CENTERS FOR DISEASE CONTROL AND PREVENTION

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

ADVISORY BOARD ON RADIATION AND WORKER HEALTH

MEETING #157

WEDNESDAY, APRIL 17, 2024

The meeting convened at 9:15 a.m. EDT

via videoconference,

Dr. Henry Anderson, Chair, presiding.

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Members Present:

Anderson, Henry, Chair

Beach, Josie, Member

Clawson, Brad, Member

Kotelchuck, David, Member

Martinez, Nicole, Member

Pompa, David, Member

Roessler, Genevieve, Member

Valerio, Loretta, Member

Ziemer, Paul, Member

Registered and/or Public Comment Participants:

Roberts, Rashaun, DFO

Adams, Nancy, HHS contractor

Barton, Bob, SC&A

Behling, Kathy, SC&A

Buchanan, Ron, SC&A

Calhoun, Grady, DCAS

DeGarmo, Denise, Petitioner Representative

Elliott, Michael, Petitioner Representative

Gogliotti, Rose, SC&A

Hand, Donna, Petitioner Representative

Hanlin, Daryl, Public

Holsberger, Maliah (ph), HHS

Kelleher-Griego, Regina, DOE

Mangel, Amy, SC&A

Registered and/or Public Comment Participants:

Marion-Moss, Lori, SC&A

Nelson, Charles

Novack, Joshua, DOL

Rafke, Michael, HHS

Rutherford, LaVon, DCAS

Sharfi, Mutty

Smith, Matthew

Taulbee, Tim, DCAS

Ulsh, Brant, NIOSH

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PROCEEDINGS

(9:15 A.M.)

WELCOME AND ROLL CALL

DR. ROBERTS: I will go ahead and open the meeting. So, I'm Rashaun Roberts, and I'm the designated federal officer for the Advisory Board on Radiation and Worker Health. Again, welcome to Board Meeting 157. As most of you know, all the materials for the meeting today, including the agenda, presentations, and other documents, are put posted on the NIOSH website under the schedule of public meetings. You can go to calendar year 2024 and click on the April tab to find those materials. If you're participating by telephone, you can go to the website to access all of the materials, and you can follow along with the presentations. The materials were provided to the Board members and to staff prior to this meeting.

The meeting is being conducted by telephone and Zoom. On the website there's a Zoom link, which will enable you to hear and watch the presentations through Zoom. If you've chosen to receive audio through Zoom, you should be able to speak to the group and hear the presentations. If you're not speaking on Zoom, please be sure to stay on mute by muting the microphone on the -- usually it's in the lower left-hand corner of your screen. Also, if you're a board member or staff member on Zoom, please make sure that your name is showing rather than your user ID so that you can be identified.

If you have dialed in, you will only be able to speak and hear the

presentations through the telephone line. Please make sure that your phone stays muted unless you're speaking. If you don't have a mute button, press star six to mute. If you need to take yourself off, press star six again. Also, if you're only participating by telephone, we're unable to see your name so please identify yourself before providing questions or comments.

So, before I move into roll call, I want to remind Board and staff members that they should state any conflicts of interest they might have as you register your attendance. I will note that there are work group updates for TBD 6000, Joslyn, specifically, and discussion of Metals and Controls today. I don't believe that anyone on the Board is conflicted for those sites. Nonetheless, if there's a discussion of a specific matter concerning the site for which a Board or staff member is conflicted, please recuse yourself from that discussion.

So, let's go ahead and move to roll call, and we will do that in alphabetical order. I'm hearing a little bit of feedback, so if people can please make sure Zoom is muted or they're muted, that would be great. Okay. Anderson?

CHAIR ANDERSON: Present, no conflicts.

DR. ROBERTS: Beach?

MEMBER BEACH: I'm present, conflicted at Hanford. And Loretta asked me to tell you that she's having trouble with her computer. She's trying to call in so -- so you'd know.

DR. ROBERTS: Okay. Thank you. Clawson?

MEMBER CLAWSON: I'm here. I've got conflict at the INL.

DR. ROBERTS: Okay. Frank -- or just check and see if he's on. He did say that he was not -- probably not attend. Frank, are you there? Okay. Kotelchuck?

MEMBER KOTELCHUCK: Present and no conflict.

DR. ROBERTS: Okay. Lockey?

MEMBER LOCKEY: Present. I'm conflicted at Mound, Fernald, Portsmouth, X-10, Y-12, K-25, and (indiscernible) --

DR. ROBERTS: Okay. I'm still hearing feedback in the background, so people could, double-check again to make sure you're muted. I don't know if anyone else is hearing that. Martinez?

MEMBER KOTELCHUCK: It sounds like a young person.

DR. ROBERTS: Yeah, it's a high-pitched voice.

MEMBER KOTELCHUCK: Yes.

MEMBER MARTINEZ: Hi, Rashaun. I'm here. I'm conflicted at (indiscernible) site and Oakridge X-10.

DR. ROBERTS: Okay. Thank you. Pompa?

MEMBER POMPA: Yes, ma'am. Good morning. Conflict at Pantex.

DR. ROBERTS: Okay. Roessler? Gen, I think I saw you earlier. Are you off mute? Okay. And has Valerio joined? Okay. Ziemer?

MEMBER CLAWSON: There's Gen.

DR. ROBERTS: Okay. Gen, can you register your attendance and state any conflicts? Okay. Having difficulty hearing. I do think that we are at a quorum even despite not hearing folks. So, let me just move on to DCAS/ORAU.

MR. CALHOUN: Hi, this is Grady. Can you hear me?

DR. ROBERTS: Yes, I can hear you. Thanks

MR. CALHOUN: Okay. I'm conflicted at Fernald, and I, too, hear the chipmunks chattering in the background still.

DR. ROBERTS: Okay. Anyone else DCAS/ORAU?

DR. TAULBEE: This is Tim Taulbee. I'm conflicted at Mound.

MR. NELSON: This is Charles Nelson. I am conflicted at Fernald.

DR. ULSH: Brant Ulsh. I'm conflicted at Fernald, Mound, and Argonne.

DR. ROBERTS: Anyone else for DCAS/ORAU? Let's move on to SC&A. Anyone here for SC&A?

MS. BEHLING: This is Kathy Behling.

MR. BARTON: Sorry, this is the Bob Barton. I lost connectivity there for a second, but Bob Barton, SC&A, no conflicts.

DR. ROBERTS: Okay. And Kathy, you said you --

MS. BEHLING: Yes.

DR. ROBERTS: -- you registered your attendance. Any conflicts?

MS. BEHLING: No conflicts.

DR. ROBERTS: Anyone else for --

DR. BUCHANAN: This is Ron Buchanan, SC&A. Conflicted at Los Alamos.

DR. ROBERTS: Okay.

MR. FITZGERALD: Joe Fitzgerald, no conflicts.

MS. GOGLIOTTI: Rose Gogliotti, no conflict.

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

DR. OSTROW: Steven Ostrow, no conflicts.

DR. ROBERTS: Okay. Anyone else at SC&A? Okay. Let's move on to HHS and contractors.

MR. RAFKEY: Michael Rafkey, HHS, no conflicts.

MS. ADAMS: Nancy Adams, NIOSH contractor, no conflicts.

MS. HOLSBERGER: Maliah (ph) Holsberger, OGC, no conflicts.

DR. ROBERTS: Any others for HHS and contractors? Let's move on to the departments, DOL, DOE, other departments?

MR. NOVACK: Hey, good morning. This is Josh Novack. I have no conflicts. I'm from DOL.

MS. GRIEGO: Good morning. This is Regina Griego with DOE and, while I work for DOE, I -- I don't have a conflict, particularly, with any of the sites, per se. Thanks.

DR. ROBERTS: Anybody else from DOL, DOE, other departments?

DR. ROBERTS: Hearing none, I just want to circle back and see if we can hear Roessler now. Okay. Valerio?

MEMBER VALERIO: Can you hear me?

DR. ROBERTS: Yes.

MEMBER VALERIO: I am here. I am conflicted out of all New Mexico sites, and just so you know, I'm having trouble getting on to my computer. It keeps kicking me off for some reason.

DR. ROBERTS: Okay. Sorry about that. Ziemer? Okay. So, let me

just go back. Are there any members of the public that would like to register their attendance?

DR. DEGARMO: This is Denise DeGarmo, the authorized petition representative of the Pinellas SEC 00256.

DR. ROBERTS: Good morning.

MR. ELLIOTT: Good morning, Dr. Roberts. This is Mike Elliott. I'm hearing the chipmunks as well. I'm a petitioner for the M&C SEC petition 236.

DR. ROBERTS: Okay.

MR. MIKE ELLIOTT: And I'll -- I'm going to sign off during the morning and come back on around 1:45, okay?

DR. ROBERTS: Okay. Great. Thank you. Any other members of the public who'd would like to register attendance? Okay. Hearing none, I thank you and welcome everyone again. So, let's prepare to move further into the agenda. Again, please make sure you're checking your phone and muting it. If you're on the phone and you don't have a mute button, press star six to mute. If you need to take yourself off, press star six again. I do want to remind everyone that there is a public comment period today starting at 6:00 p.m. So, if there are any members of the pub -- starting at 5:00 p.m., sorry. So, if there are any members of the public who plan to comment, please make sure you're present at 5:00 p.m., because the public comment session will end with the last comment. So, with that I will turn the agenda over to Dr. Henry Anderson, who's our Board Chair for the official welcome. Andy?

CHAIR ANDERSON: Thank you. I welcome everybody. And we had a couple of tornado alerts here last night, but all of our wiring is all in place. I was worried about losing internet connection and phone, but we're all set here. Want to welcome everybody, and we're starting a little bit earlier than we usually do, so a little bit -- welcome for those on the West Coast who are up a little early. So, let's get started. We have a full agenda today. Running right through late afternoon. So, start with the NIOSH program update with Mr. Calhoun.

NIOSH PROGRAM UPDATE

MR. CALHOUN: All right. I'm getting this organized here. Hold on. All right. Can you see my slides?

MEMBER BEACH: Yes.

MR. CALHOUN: Excellent.

MEMBER BEACH: Good. Looks good.

MR. CALHOUN: Okay. Thank you. All right. Program update all right. Okay. Contracts and staffing. Sadly, Dave Sundin retired and so did Kim Kraus. Kim Kraus was our -- she kept track of all of the project plans, which was great. But well-deserved retirement. So, the deputy director position has been filled with a fellow you all know as Bomber, LaVon Rutherford. And we have a candidate -- tentatively has accepted the position of program analyst, which is with Kim Kraus' job was. A thorough -- third ward -- third quarter hiring plan is a health physics supervisor, that's LaVon's previous position, manager -- management analyst, which is our money lady, Payton

Zang (ph). She's retiring 7/31/24. And then we're going to hire an understudy for DCAS director, who was me, because I'm retiring January 31st of 2025.

As far as contract information goes, the ORAU contract was extended for six months. That gets us through September of this year. There's a one-year bridge contract that's being finalized for ORAU as well. That will get us through September of 2025, and then we will have the big contract that goes out for bid one plus four years, which will get us through September of 2030.

IT update. I think I finally got some good news for you. We're still processing all cases manually. And that's difficult, but we have managed, as I've reported in the past, to get all the cases -- at least 90 percent of all the cases completed within five months of receiving the last data required for completion. The site research database has been restored on ORAU's side. I don't know the extent of how many of you-all from the Advisory Board and SC&A have gotten access, but I know an email went out yesterday to the Board, and I know that SC&A had -- had gotten notification a little earlier. And so, they're working through that. It takes, I don't know, 20-30 minutes. And you, actually, have to call ORAU's help desk. And is it cumbersome; yes. It's not as easy as it used to be, but it's there and it's awesome. So, the functionality is the same as it used to be. So, everybody that I know that has accessed it, once they're is quite happy with it. There's actually been some improvements to it. Also, we got the Board review system up. Now, we're still working on a couple issues and just trying to

make document upload a possibility. So, it's going to happen. It's just a matter of getting it done. So, the access to that will be just the same. It'll be through Cyber Ark. So, once you've figured out how to get on Cyber Ark, you'll be able to get to these two applications.

The next on our list is an SEC viewer, and I don't have a firm date for that. I know it'll be -- I'm confident -- this isn't an ORAU commitment, it's what I believe -- it'll be done in the next six months, maybe sooner. Who knows. And then, obviously, NOCTS will be the last as it is the most complicated. So, the overall vision of where we're going with this has changed, luckily for us. And we're in the process of scanning and remediating NOCTS on our side. Once that's completed, we will sent that -- send that over to ORAU, then they'll do a similar type operation, and then that will be housed on ORAU's side, and it will be accessed through Cyber Ark, and that'll be until, ultimately, we get everything moved to the CDC cloud. And then it'll be housed on our side. But for the interim, we're going to do it that way. And I don't know how long it's going to take, but I see light at the end of the tunnel, and it's not a train this time, so I'm really happy about that.

Workshops, town halls, and outreach -- outreach. We completed an outreach event in Portsmouth this month and also one in Paducah yesterday. Everything I've heard from the folks say that these both went quite well. We had a joint outreach task group meeting yesterday, and I was told that more than 100 people showed up in and out of the Portsmouth call or at Portsmouth meeting. I don't have an actual count for Paducah yet. But

Dr. Cardarelli was there for us, and he said it went well. We have some other events tentatively scheduled, but they're pretty solid at this point. We're going out to Kansas City, Missouri area May of -- or next month, yeah. Idaho Falls next month as well. Chicago, we've got a couple of meetings scheduled in July. Then we have our Cincinnati (indiscernible) workshop in September, and then we have the -- I call it the Four Corners area, Gallup, Grants in Albuquerque, New Mexico in September of 2024. So, it's a quite busy outreach season this year.

This is just the -- the graph I kind of show all the time. Are all your pictures showing up on the right-hand side of the screen, because I see it on mine? I don't think they are.

MEMBER BEACH: Yes.

MR. CALHOUN: They are?

MEMBER BEACH: They are for me.

MR. CALHOUN: Okay. That's no good. I'm going to move it to this side then. So, you can see the end, all right. Thank you.

Basically, this just is a -- kind of a graph that shows us what's been going on since the -- since the pause occurred. And, basically, you can see with we're coming on our third year, which is hard to believe, that we have been shut down. And so, that happened May 1st, and you can see it. There was a big increase in cases because we couldn't process them. And so, we're kind of getting back to where we were -- where we want to be. And we're, basically, still processing cases at the same rate, or close to it, as they're coming out. We're not really seeing a significant buildup of cases.

Although the cases over 12 months are increasing, that's -- that's really waiting on getting some TBDs done so that we can process those cases. So, you can see, we're -- we've recovered from the pause for the most part, but it's a lot harder than (indiscernible).

And let me move this thing again now. Record requests from the Department of Energy, we have 241 outstanding requests now. As I always say, that doesn't mean that Department of Energy is late. If we go from the longest, we don't have any over 120 days old. We have six between 61 and 120 days, and all the other -- rest are below 61 days.

Overall, we've received 57,529 cases from Department of Labor for dose construction. 49,772 have been returned to dose -- to DOL with a dose reconstruction. 956 and administratively closed. 3658 have been pulled by DOL for special exposure cohort. 1904 pulled from DR by Department of Labor for -- for some reason. We have 1239 cases at NIOSH right now for dose construction.

Probability of causation summary. Of the 49,772 dose reconstructions sent for final adjudication, 36,666, are less than 50 percent, 74 percent of the total, 13,106 are greater than 50 percent, 26 percent of the total. These have -- these percentages that remain relatively constant over time.

Active cases. I reported earlier that 1239 cases are active at NIOSH in dose reconstruction. 390 are actually in the dose reconstruction process. 225 are in the hands of claimants so they can review those and sign the OCAS-1, and 624 are preparing. I should have mentioned earlier that all of the -- all this information and these numbers is as of April 1, 2024.

And that is the end of my update. So, any questions?

MEMBER BEACH: Grady, this is Josie. I have one on that Cyber Ark system you said we were supposed to have gotten an email yesterday.

MR. CALHOUN: Yes.

MEMBER BEACH: I don't believe I got one.

MR. CALHOUN: All right. Well, I will check on that, and I hate to put Rose on the spot, but we kind of -- she kind of agreed to be the -- the point of contact for that but let me make sure that you're on that list. Because I just saw it -- it was -- unless he sent it really late last night, I saw it for the first time this morning.

MEMBER BEACH: Yeah, I just went through, and it wasn't there this morning for me. So, great. Thank you.

MR. CALHOUN: No, I'll check. And I'll make sure that -- that -- that it -- I forward that to you. And you know, feel free to contact, you know -- Rose knows what's going on.

MEMBER BEACH: Yep.

MR. CALHOUN: Lori -- Lori Marion-Moss on our side knows what's going on. I will confess that I have not yet logged on myself. I would have liked to sign -- say I saw it myself, but I have not.

MEMBER BEACH: Thanks, Rose.

CHAIR ANDERSON: I saw the email, but I didn't have a chance -- it's a complex -- gives warning that -- be sure and read all of the steps in advance and print it out, so I haven't begun to try to get into it.

MS. GOGLIOTTI: Didn't the email come from Kevin Vinoulistill (ph)?

MR. CALHOUN: Yes.

MS. GOGLIOTTI: Okay. Would people like a training? Do people want to try it on their own first?

MEMBER LOCKEY: Jim Lockey, --

MEMBER BEACH: Yes and yes.

MEMBER LOCKEY: Yes to training. Yes.

MEMBER BEACH: Probably try it on my own, but it would be nice to know that we had a training backup.

MEMBER LOCKEY: Yes.

CHAIR ANDERSON: Yes.

MS. GOGLIOTTI: I'm still learning myself, but I'd be happy to give one. I'll send out some emails to see when is good for people, but it would be helpful if everyone at least got their credentials verified before we could do that.

MEMBER BEACH: Yes.

MEMBER LOCKEY: Grady, I have a question. Jim Lockey. I don't understand, the 12 month out is increasing? I missed what the explanation was for that.

MR. CALHOUN: It's because we had -- at least a lot of it is because we had some TBDs that were kind of taken a little longer. Of particular note was the Savannah River site, and so we're starting to hit those cases long -- kind of hard lately. And but that's -- there's going to be other issues as well. There's the slide. So, but that's -- that's one of the issues that has caused the delay in the cases.

MEMBER LOCKEY: And one other question, it might be due to my hearing. Did -- I think I was mistaken this, but did I hear you say you're retiring?

MEMBER BEACH: Yeah.

MR. CALHOUN: Yes. Yes, you did, sir.

MEMBER LOCKEY: And when is that, again?

MR. CALHOUN: That's the end of January of next year.

MEMBER LOCKEY: Wow. Okay.

MEMBER BEACH: Congratulations.

MR. CALHOUN: Thanks.

MEMBER KOTELCHUCK: You still look so young really.

MR. CALHOUN: I'll be 62, you know.

MEMBER KOTELCHUCK: How much? Oh.

MR. CALHOUN: I just had grandkid number six born.

MEMBER KOTELCHUCK: Oh, wow.

MEMBER LOCKEY: 62, I never would have thought that.

CHAIR ANDERSON: Well, you got a lot to get done before you retire. Okay. Are there any other questions? Got a big crowd on. It's going to be hard to look for raised hands and things.

DEPARTMENT OF LABOR PROGRAM UPDATE

CHAIR ANDERSON: So, next up is a program update from DOL. Mr. Vance.

MR. NOVACK: Hey, good morning. This is Josh Novak from DOL. I'm

going to be doing the program update --

CHAIR ANDERSON: Okay.

MR. NOVACK: -- for Mr. John Vance. I work in the -- I work in the policy unit as a policy unit supervisor with John, but lucky for you, I don't retire for another 14 years, so I'll be around for a while. Let me see if I can share my screen here. I wasn't sure who was going to bring the presentations up. Are you able to see the slideshow?

MEMBER BEACH: Yes. It's up.

MR. NOVACK: Excellent. Okay. I think some of the numbers that you're going to see throughout this slideshow kind of reinforce things that Grady was saying a little bit earlier, and I'm going to touch on outreach as well. A lot --

DR. ROBERTS: Excuse me.

MR. NOVACK: -- the presentation --

DR. ROBERTS: Excuse me, Joshua? I'm sorry, to interrupt. I think you're on presenter's view. I'll just leave it like this. Can you see the slides now?

DR. ROBERTS: Yes. But we can see the -- the upcoming slides on the side.

MR. NOVACK: What should I hit for you to see it the way that Grady had it?

DR. ROBERTS: If you go to the bottom right-hand, there's like a projector icon.

MR. NOVACK: This one?

DR. ROBERTS: Yeah.

MR. CALHOUN: Or you can just go from the beginning, slideshow from the beginning, Josh. That's what I did.

DR. ROBERTS: It did it again.

MR. CALHOUN: Go slideshow from the beginning. Oh, I don't get that.

MS. GOGLIOTTI: Go to display settings. Go to display settings in the top middle and click swap -- yep. Yep, there you go.

MR. NOVACK: Okay. Now, we're back on track. Okay. What I was saying was if we're going through this, and there's something that the Board wants to see from DOL in future presentations, just let me know at the end, and we'll make sure to include those in here. But I picked a few topics here that I think would be interesting to know from -- from Department of Labor here.

So, just to give you an idea of what our claims intake numbers look like, we hit about 2200 to 2500 claims per quarter for the beginning of this fiscal year. And then in addition to that we have a very large number of consequential claims. We're seeing those numbers kind of -- nearly triple, quadruple in some cases. And we are debuting a new consequential illness form. It's going to be called the EE1A, and that's going through a clearance process now, which is going to help DOL better delineate between an initial claim and a consequential claim. The feedback that we're hearing from our stakeholders is that they appreciate the fact that we're doing this, and I think it's going to allow our claims examiners to better identify and better

adjudicate a consequential claim. So, we're all excited to be able to debut that form, hopefully in the upcoming quarters of this fiscal year.

This is similar to what Grady was mentioning, the NIOSH referral case statuses so far for this fiscal year. In quarter one, we have referred 1035 cases over to NIOSH, and in quarter to 1074. So, the numbers are fairly consistent. And then along that way, we're seeing a consistent return also, between the cases referred to NIOSH and the cases returned from NIOSH.

In quarter one, we -- for the POC calculations performed, quarter one, we had 3559 and quarter two we had 4080. So, this goes along with what Grady was saying, how the numbers are coming -- are coming down for their ability to return cases quickly.

Some of the program's statistics -- this is from inception to date. We have 352,000 claims filed from the inception, and that led to about -- the compensation and medical bill payments amounts that you see on the bottom of the screen. As the years go on, we're seeing the total medical bills paid kind of creeping up. And we estimate eventually that will probably outweigh the compensation dollars paid. Again, this kind of feeds into the last slide. I'm not going to read all of these numbers, but these are our fiscal year '24 compensation paid out between RECA payments, medical bill payments under Parts B and E, parts E medical bill payments, as well. So, you can see the kind of totals that we're dealing with. Large numbers of medical bill payments and compensation payments made in both the first quarter and second quarter, with the second quarter kind of creeping up a little bit larger than the first quarter. And that's this -- that's the average

that we're seeing quarter over quarter throughout the last few fiscal years.

Grady touched on this outreach also. I think that what he mentioned kind of plays into this also. He mentioned most of the JOTG outreach events, which as you're all familiar with, the JOTG is comprised of Department of Energy, Health Human Services, our department as well, as well as some -- some other contractors, and other parts of our departments. They go on the road and make themselves available to the stakeholders and the general public by giving presentations at the beginning of the day and then kind of sticking around and helping answer questions one on one that people may have.

DOL also puts on AR workshops, which is an authorized representative workshop. And that's when we invite 30 authorized reps or so to come meet with us. And it's an in-depth kind of college level study on every single aspect of the adjudication process that we undergo. It's very hands on. It's very intimate, and it allows our authorized representatives to have a better understanding of kind of our program, what we go through, what our claims examiner's go through, and allows them to then go back to their communities and be a better authorized representative and help -- help all the claimants that -- that deserve the benefits that we provide.

And then the other type of event type you'll see there is a traveling resource center. So, the Department of Labor contracts resource centers in order to do claims intake and a various number of other functions. What they also do is they -- they travel to different sites around the country and set up shop there and allow claimants to file claims at those -- at those sites

and also do other administrative sites. So, we have traveling resource centers coming up in Amarillo, Texas next month.

As part of our in-person outreach, we supplement that with a webinar series. And we're very fortunate to have NIOSH participate in that since the beginning of these. They were kind of a brainchild that came out during the COVID years when we were unable to travel. We still wanted to reach our claimant population and our stakeholder population, so we developed a webinar series. They go on for 10 months out of the year, from January to October. We pause them around November and December because of the holidays. And we go through a whole number of topics, similar to the -- the AR workshops, but a little bit broader view of it -- these different ones. So, I know NIOSH is participating in the one that we have coming up on April 30, so we thank them for their -- for their participation. And, you know, they've done a presentation for -- at least once a year since these webinars series started. And you can see some of the other topics that we talked about, including the medical benefits coverage. We do a stakeholder update, and that's when our DEEOIC director, deputy director, and some of our branch chiefs lead a call and tell them kind of what to -- what to expect in the upcoming year, some changes that we have going on, and also take a look back at some of the things that we've accomplished in the -- in the year. We do it tools and resources one. We do one for RECA. I mentioned NIOSH. DOE participates in one as well, and then we have claims process. I suggest if you are interested in learning about these webinars or even if you just want any update to our program, we have an email distribution list. So,

whenever we make a policy update, we use that email distribution list to let our stakeholder population know what the policy update is, and we also use the same distribution list to keep everyone informed about what our outreach events are, our webinars as well. So, I suggest if you want to keep informed about what's going on in DEEOIC, to go over to our homepage and you'll be able to find a link to that email distribution list and sign up. It's not spamming. We only really send you emails when we have something to notify the public about.

I decided to add just a couple of program updates and bulletins that we have put out in the last six months or so. We did an -- a bulletin update for our beryllium sensitivity criteria, and this came about because of a -- an amendment that was included in the NDAA last year, which broadened the scope of the criteria needed to accept beryllium sensitivity. So, they had stated that we'll will now be able to accept beryllium sensitivity if we have -- if we have tests performed over -- over a -- if we have three consecutive tests performed over a period of time, we'll be able to accept it as well.

The other bulletin that we set up was the categorization of BCC and SCC as a nonmelanoma skin cancer. So, just to summarize all of this writing that's on this slide, the basic premise is, if you have a primary BCC or SCC cancer that's accepted and you file a consequential condition for another primary BCC or SCC cancer, those will be accepted via letter decision. And this does not include the melanoma skin cancers.

I have a slide here which kind of gives a few resources that we provide. The Energy Compensation Workers Program website is very

comprehensive. You can find almost anything you need there, including brochures, infographics about our program and the length of time it may take to adjudicate a claim. Our resource centers are our kind of our front line -- our front line people to the public. They answer our phone calls, and they provide the greatest assistance. So, we have a great link and a great website dedicated to the resource centers.

And then I added the energy document portal, which gives claimants and stakeholders the ability to file a claim through it, upload documents to their case file, now you can complete your impairment or wage loss claim forms there, and you can complete the benefit payment forms, as well as check status of the documents. And as well, if you ever have any questions or anything ever comes to your mind, our public email box is monitored on a daily basis and respond to them usually within 48 hours. So, our public mailbox address is located right there.

Yep, that brings me to the end, to questions and comments.

CHAIR ANDERSON: Any questions?

MR. NOVACK: Thank you. Thank you for -- for having me. If there are certain things that the Board does want to see moving forward from DOL, just let us know and we'll incorporate them into future presentations.

CHAIR ANDERSON: Thank you. It was very informative. Other questions? Any questions people have? Oh, I just had -- I haven't -- it's a -- it's a big website, but on the webinars, are those recorded, and are they available for people to go in afterwards to look at?

MR. NOVACK: Yeah. Unfortunately, the webinars are not recorded;

however, we have a depository of all the slide show presentations that are given throughout the history of the webinar. And that's on our outreach page on our website, so you'll be able to see what the presentations are, but they're not recorded.

CHAIR ANDERSON: Okay. Because I was looking for that to look at some of them, and I could find a lot of information there, but that wasn't among it. So, that's good. That's (indiscernible) --

MEMBER BEACH: Henry, this is Josie. Josh, I was able -- I have your presentation up on my computer as well, and I was able to get signed in for your email, so that was quick and easy. Thanks --

MR. NOVACK: Yeah, great.

MEMBER BEACH: -- for doing that.

CHAIR ANDERSON: Other questions? Okay.

DEPARTMENT OF ENERGY PROGRAM UPDATE

CHAIR ANDERSON: Well, then let's move on to DOE update. Greg Lewis?

DR. ROBERTS: If someone's presenting, we can't hear you.

CHAIR ANDERSON: There we got the slide.

MS. GRIEGO: Sorry, I was trying to -- I was trying to get a mute -- unmute myself. This is Gina Griego from the Department of Energy. Can you hear me?

MEMBER CLAWSON: Yes.

CHAIR ANDERSON: Yes.

MEMBER CLAWSON: Yes, Regina.

MS. GRIEGO: Okay. Sorry about that. Every time I'd go up to try to unmute, it with the disappear. I was, like, gosh. Okay. So, my apologies. Good morning, everybody, I am Regina Griego-Kelleher from the US Department of Energy, and I am the program manager for the EEOICPA program, and Greg and I -- Greg Lewis and I work closely -- you know, close together to implement EEOICPA as well as the former worker medical screening program. I'm going to go ahead and give you that update on program activity.

With respect to program news, we recently -- we've been working with our -- our SERT, the secure electronic records transfer system, IT folks to update that system. We should be able to allow for smoother records transfer and better communication. It was also to accommodate the Department of Labor's national program, at least their -- their -- you know, the -- with the CEs being assigned to any type of site nowadays, we wanted to make sure that it was easier for CEs to access SERT, and for us to transfer (audio break) back and forth to CEs. So, we've gone through phase one of the update, and we're actually putting together for phase two. So, I think, you know, by the end of this year, we should have the -- you know, the SERT updated and should be working a lot smoother for -- between DOE, DOL, and NIOSH.

One other thing is the former worker medical screening program, just to -- to give you guys a head up, they are going to roll out an expansion at the New Mexico program. They're already doing some screenings, but we

were officially going to roll that out probably in June. And that's also going to complete -- include early lung cancer detection, so that's the CT program. That will be in, you know, Albuquerque, Los Alamos area, and we'll be sending out information once we officially kick that off, and we encourage you to share it with your -- your stakeholder groups that you work with considering they are eligible for the screening program as a former worker.

With respect to DOE's responsibilities, as I think most folks know, we respond to -- to the Department of Labor and NIOSH regarding records requests for individuals, and that would be for employment verification and for exposure. We also provide assistance to Department of Labor and NIOSH and Advisory Board on large-scale research activity, you know, to assist with site characterization projects and records research and retrieval at the -- at the various DOE sites, including -- including our closure sites where we often work with legacy management.

With respect to individual records, I've, you know, we've -- DOL -- DOE has come a long way with respect to providing records to the Department of Labor. We've implemented several measures within the department to make sure that we protect the records and that records are accurately being scanned and made available electronically. With -- with NARA's new requirement, the government's supposed to go electronic, I believe, at the end of the summer, but Department of Energy is ensuring that all historical records, at some point, that we use on site will be electronically transferred. That might take a while because they're more -- more or less focused on current records, but historical records is something

that our records management leadership at headquarters, they are aware of EEOICPA, and they have taken that our program into consideration as they move forward with developing their -- their records (audio break.)

And with that said, you know, I say that because most -- you know, many of ind -- individuals, employees, worked at multiple jobs, multiple sites, and it can be challenging to identify or locate records for individuals, particularly historical. The records that worked -- that retired and worked many years ago, it's -- it's -- the early -- the -- these -- the records -- current records are much easier to locate, but it's always a challenge with some of the historical records, particularly with the -- the subcontractor contractor connection.

And then just to give you a little bit of stats on record requests as of FY '23, we had 18,765 responses for the program, that up -- that went up dramatically. In FY '19 prior to COVID, we had 16,978 responses, and as of today, we have responded to -- we have 11,301. So, FY '23 was by far our highest number for records requests, and we're on target to probably break that record this year. And we are seeing an upsurge -- an uptick in requests at various -- at our -- at our sites, particularly like Nevada, Los Alamos, more or less the -- some of the larger sites.

With respect to large research projects, again, as I mentioned, we support Department of Labor and NIOSH. There are -- there are quite a few projects going on right now, and so I just want to kind of give you a snapshot as to, you know, what we're doing out in the field. So, not only are our sites, you know, working to process -- sorry about that -- process

our record requests, they are supporting Department of Labor and NIOSH with record projects.

What goes on with the record (audio break), obviously, you know, DOE is committed to (audio break) NIOSH and Labor and the Board access to the records that they need. Our average turnaround rate for review of those records are -- is generally about eight working days. I don't even -- I think probably within -- during the COVID time frame and, you know, and after COVID, we had some delays, but I'm pretty -- I feel like we're -- we're actually doing a better job with getting those reporters turned around within eight -- about eight work days.

One other risk responsibility that Department of Energy has is to maintain the covered facilities' database. So, if you have not had a chance to review the database, it can be found at -- on the Department of Energy's website. That database contains over 300 facilities covered -- covered under EEOICPA. And within the last couple of years, we did update that database to make it a little bit more user friendly. So again, if you haven't looked at it or chance to review it, please go in and take a look at it. We now have an option that you can actually export a list and print out, you know, information on various facilities via Excel spreadsheet. So, it makes a little bit easier.

As I mentioned the former worker medical screening program, you know, ties into EEOICPA in that our former worker medical screening program offers free medical screening for former DOE employees, and that includes contractor and feds. And obviously, if they identify a potential

occupational-related illness or -- they will refer them to EEOICPA. And if you want more information on the former worker medical screening program, you can visit our site to get information. And again, I would encourage you to share this information with your colleagues, with claimants so they understand -- they understand and know that they're eligible for these -- for this program.

And that's all I have. The only -- I guess, actually, I take that back. I have one other item, and it's kind of a tag on with the outreach that Josh talked about. And I mentioned this, I think, to the Board maybe before Christmas, in that we're wanting to put together these historical operation briefings, I guess, we're in the planning phase. And this will allow us to have some sort of short webinars where we could provide an overview of site operational activity. We've asked Department of Labor to provide us with a list of facilities that they would like us to focus on so we can prioritize. And so, I'm asking the Board for the -- you know, the same list, and then we'll determine format. We're not quite sure if we'll open it up to the public at this point. I believe that it will probably just focus internally with Department of Labor, you know, to educate their claims examiners and then and NIOSH and -- and initially. And if it goes well, then maybe we can actually open it up to the public. And we're thinking about even recording the presentations. That way we can make them available so folks can actually review them at any time.

And that is all I have. Anybody have any questions?

CHAIR ANDERSON: I just have -- Henry Anderson -- one question

here. Do you have any thoughts on what you would attribute the increase in the requests for records that you just showed? Is that response to outreach or any thoughts?

MS. GRIEGO: I don't know. Josh, if you want to chime in? I think it's out -- you know, outreach, we did do a lot of outreach. And obviously, after COVID, we did see, you know, a surge of -- of claims coming in. But, you know, Josh might have some more detailed information or Grady might have his own opinion.

MR. NOVACK: Yeah, hey, it's Josh again. Yeah, I mean, it's all -- it's all dependent on -- on what the claimant situation is and kind of we see an ebb and flow of increases in request for records by the -- the Department of Energy. You know, a lot of the times claiming to have records that help in order to prove their employment at a site, but at times they don't. And you know, some of these requests that we put to the Department of Energy just could increase for a quarter based on, you know, a site doing outreach to -- to their retirement community or us going out to certain areas of the country and doing targeted outreach right there and receiving more claims from -- from that area, which is -- eventually leads to the Department of Labor requesting more records from the energy -- or the Department of Energy.

MS. GRIEGO: Okay, but Josh it's my under -- I understand there's an uptick in general claims, correct?

MR. NOVACK: Yeah, I --

MS. GRIEGO: -- Labor?

MR. NOVACK: Yeah, I mean, in that first slide that I showed, the --

the claims increase, and we do always tend to see a claim increase kind of around the holidays time and going into the beginning of the calendar year, which is the second quarter of our -- our fiscal year after, you know, families gather for the holidays and kind of figure out next steps for -- for filing claims. So, we always see an uptick kind of around those times as well.

MS. GRIEGO: And just for clarification, the numbers I shared are requests related to Department of Labor and NIOSH, so that number doesn't reflect anything coming from the public, per se. But Josh is correct, if labor is not able to establish verification (audio break) we might have to do some additional research, but it has increased.

CHAIR ANDERSON: Okay. I was just curious. It's really --

MEMBER CLAWSON: Regina, -- Regina, this Brad Clawson. How are you doing?

MS. GRIEGO: I'm good, Brad. It's nice to talk to you and see you. How are you?

MEMBER CLAWSON: I'm doing good. Hey, my question is, is on a lot of these sites when we're doing background research, we're still getting into a lot of classified documents and stuff, and I know that you -- we've kind of downsized Germantown that we had there, but we have some of them that are coming up in some of these sites and, I guess, I'm wondering a little bit how -- are you starting to see more classified documents being requested also, too, or is that kind of out of this realm?

MS. GRIEGO: Not to my knowledge, but Brad I can -- I can actually do some -- ask some questions, because they usually go directly to

classification, so I'm not aware of any.

MEMBER CLAWSON: Well, I -- I may get with you a little bit later and reach out to you and stuff, and we can talk about that there offline. I was just wondering if some of them were coming in. And because there's kind of an added emphasis on some of these sites that we've been working on for a little while, and some of the classification things are starting to pop up now. So, I was just wondering about that. I appreciate it, Regina. Thanks.

MS. GRIEGO: Yeah, no. Yeah, let me know definitely. You know, I know that the closure sites, we usually work with headquarters, but, you know, active sites, you know, they're -- their own classification offices will review the information. But yeah, feel free to reach out to me.

MEMBER CLAWSON: Okay. Appreciate it. Thank you.

MS. GRIEGO: Thank you.

CHAIR ANDERSON: Any other questions?

MS. GRIEGO: Well, thank you everybody.

CHAIR ANDERSON: Well, thank you. Appreciate the update.

MEMBER ZIEMER: Andy, this is Paul Ziemer. I would -- just wanted to let you know that I did -- I am aboard finally.

CHAIR ANDERSON: Okay. Great. No questions?

MEMBER ZIEMER: No.

CHAIR ANDERSON: The record --

MEMBER ZIEMER: I came on earlier on this presentation, but I didn't want to interrupt to tell you I was here.

CHAIR ANDERSON: Okay. Thank you. Okay.

DOSE RECONSTRUCTION REVIEW METHODS WORK GROUP UPDATE

CHAIR ANDERSON: With that we'll move now to Board activities, and the first is dose reconstruction review -- review methods work group update from --

MEMBER KOTELCHUCK: Okay.

CHAIR ANDERSON: -- Dave.

MEMBER KOTELCHUCK: Good. Let me see. Okay. So, let me begin. Oh, I'll put -- just to make sure I have the slides -- and folks see -- can you see my slides on share screen?

CHAIR ANDERSON: No.

MEMBER KOTELCHUCK: No. Okay.

MEMBER CLAWSON: Not yet, Dave.

MEMBER KOTELCHUCK: Pardon?

MEMBER CLAWSON: Not yet.

MEMBER KOTELCHUCK: Okay. Well, let me first -- we'll come to the slides in -- in a little while. I'd like to report on the DRRM working group meeting on March 11th. This was the first regular meeting of our group since September 2018. And was -- it was also an introduction to the group's activities and -- for our new members. Let me give a little -- given the long delay in getting -- in giving a report to the Board, let me just give a little more background than usual perhaps, and we have to have some new members on the Board since my last report.

The -- the dose reconstruction reviews methods working group was established by the Board in March 2015 under the broad mandate of,

quotes, be responsible for advising the Board on possible new approaches to reviewing a sample of NIOSH dose reconstructions, unquotes. It was established and shared by Jim Mellius, then chairperson of the Board and in 2017, Mark Griffin, former Board member, presented his report on many of the instances of professional judgment in the dose reconstruction process. He talked about the personal professional judgments, but he also in -- introduced the concept to us of the -- or introduced as an important concern the programmatic professional judgments, professional judgments not made by individuals, but rather by program leadership in its instructions to the individual dose reconstructors. Less than a month later after the Griffin report Jim died, and I was asked to take over chairpersonship. And we held our next regular meeting in September of 2018. The last meeting until the last meeting -- until our March 11th meeting. Meanwhile, the -- and soon afterward, we really got delayed by -- you know, with COVID and also the CMI initiative -- CM initiative.

So, meanwhile the dose reconstruction subcommittee continued work on its blind reviews. And in our March 11th working group meeting, I first reported on the 49 blinds cases that the DRR subcommittee has completed so far. This is the Board's best effort so far to examine the consistency among DRs in the 1 percent sample of claimant cases we have so far reviewed. It also informs on the extent of our working groups imperatives to push ahead with developing new initiatives for our methods working group. We examined each of the 49 blinds cases completed so far. Of these cases only three, 6.1 percent, did the compensation assessments differ for

the two reviewing groups, NIOSH and SC&A. As I've said before, these results give us confidence in the consistency of the DR process.

Furthermore the working group looked into each of these three cases. One -- one was a case of what Griffin called programmatic professional judgment in which NIOSH and SC&A took quite different approaches to evaluating dose reconstructions for claimants with a small -- or from a small, covered AWE facility. Excuse me.

In the other two blinds cases, on the other hand, we selected where the probabilities of causation were very close to the 50 percent cut off percentage. In one of these two cases, the NIOSH POC was 50 -- the NIOSH POC was 50.06 percent, and SC&A's POC was 49.43 percent. So, they were on different sides of the 50 percent boundary. So, the difference in these two POCs was only 0.63 percent. Similarly, in the other case, the other -- the second case, the NIOSH POC was 48.6 percent and SC&A's was 50.35, a difference of 1.75 percent. These two sets of results are both very close to each other and do not appear to me to represent a significant difference in the POCs, just the ordinary variabilities one might expect resulting from a complex process involving many steps and professional judgments along the way.

In short, the differences in POCs for the two blinds cases, these two blinds cases, does not appear to represent failures or faults in evaluating POCs in these cases. We were just pushing the POC envelope to see how well we were doing for cases near the 50 percent -- you know, the 50 percent borderline for compensation. So, these 49 cases were chosen to

reflect as best we could a representative sample of our population. And I'd like to show you a few slides and let me hope we can get these -- I didn't -- up and shared. And let me see if this -- do folks see this? Is this on your screen?

CHAIR ANDERSON: Yes.

MEMBER BEACH: Yes, it is.

MEMBER KOTELCHUCK: Okay. Good. So, the first slide -- on the first slide, I should remind people, and I want to mention to people, that the members of our DRRM work group are Josie Beach, Arthur Frank, myself, Nicole Martinez, and Paul Ziemer. And the next slide, let's see. How do I get -- let me see. Here we go. The next slide. Just to -- we're talking about the representativeness of the -- of the 49 blinds cases. Here we have the facilities covered by the 49 blinds cases. And so, we have a total of 30 different facilities covered. Among them, a robust sample of the largest covered DOE facilities, as well as several smaller AWE facilities, as you can see there.

So, and then on slide three, oops -- on slide three, notice that years employed among the 49 blinds cases, we have, essentially, a flat distribution between 10 and 40 years. That is to say, we covered well people who've worked for many -- for decades in this industry and also people who were worked for times of 10 years, which, of course, represents probably the shortest. Ten years is often the shortest latency period for different kinds of cancers caused by exposures, the blood cancers.

So, and finally on this rep -- the issue of representativeness, of the 49

cases, 22 percent were female and 78 percent were male. As of November 2015, which is a long time ago now, 13.6 percent of total claims involved female energy employees. So, we have a greater percentage of female employee claimants in our 49 blinds cases than we have for all claims, but that, I think, represents the fact that we were taking -- we started this process of doing blinds later in the game when there were many more women working in the -- in the -- in the -- this in -- in this industry, if you will.

So, now, -- well, let me say a few -- few other things about this. As we discussed in the March -- I'd like to talk about another metric now. We talked about that -- we talked about the metric for evaluating consistency when there were differences in the compensation assessments. If we look at the difference in the two PO -- POCs for each blinds case, an idea of -- the ideal would yield a distribution with a mean of -- mean value of zero, that is each case -- each blinds case, we had NIOSH and SC&A doing a -- at a -- evaluating a probability of causation. In an ideal world, those would be -- those -- those would give -- those would show a difference in the POCs of 0 percent with a distribution (indiscernible). So, we decide -- so, after the March 11th meeting, I asked Rose go -- Rose go -- go -- go -- go Gogliotti to tabulate and plot the distribution of the difference variable for each blind, that is to tabulate POC NIOSH minus POC SC&A, and she has done so. And the result is in this blind case POC difference.

Here are the 49 blinds that we've looked at. As you see, one is very, very far -- five -- I think over five standard deviations from the mean. The

mean is 0.78, and the standard error is 1.0. The standard error of which I used to -- which I was taught was the -- the -- the standard deviation of the mean. So, the standard D -- so, if the mean is 0.78 and the standard deviation of the mean is 1.0, then clearly these results are consistent with -- with having the idea of zero -- of the two measurements being identical. And indeed, you see this peak right here, right around 0 -- 0 to 0.5 percent difference.

What's interesting is that since this is -- this, on the left, is over five standard deviations from the mean, right, more than five standard deviations of 6.98. Suppose we drop this, suppose we just, you know, we took -- we dropped this from the distribution, and the results are that the -- the mean of the remaining 48 cases, the mean of all of these cases, to the -- to the right of this, are -- is 1.62 percent. And the standard error of the mean -- or the standard error is 0.55 percent. So, we -- the ideally expected mean is 0.0 is now three standard deviations above the calculated mean. You know, we could also -- now, some of these here are more than two standard deviations above the mean, but, you know, it's no point in going on with this, in my opinion, other than to say that the results are really consistent with -- and the peak here is consistent with 0.0, that is to say that the -- the mean of the distribution is consistent with the POCs of NIOSH and SC&A being the same.

So, this blinds distribution gives us a real confidence in the consistency with which dose reconstructors calculate claimants' probabilities of causation. Thus, I would say claimants can be confident that the

compensation decision for their case would be the same, whichever dose reconstructor calculates the POC for their radiation exposure. So, this is -- and by the way, the notes -- the nice part about this is initially, we were always talking about the cases where the two -- where the compensations -- compensation decisions differ. Here we have the distribution of all the cases. That is to say, we can see with this -- this metric tells us about the input from all of the cases, all the blinds that we've looked at.

And so, while this analysis of our blinds case gives us great confidence in our existing dose reconstruction process, of course, we recognize that there was always room for improvement in the process. One new initiative that came out of our working group meeting on March 11th was a joint one between our working group and the subcommittee for procedures review. Kathy Behling talked -- talked to us about an initiative being taken by the subcommittee for procedures review in which they will be reviewing templates for the AWE sites, which could provide our working group with consistency information about those sites. Let me ask -- and I've asked Kathy, and she's agreed to talk a little bit about this initiative. And there's one more slide. That was the slide added.

So, Kathy, would you like to begin now?

MS. BEHLING: Yes. Can you hear me?

MEMBER KOTELCHUCK: Yes. And I'll put your slide on as soon as you ask.

MS. BEHLING: Okay.

MEMBER KOTELCHUCK: Go ahead.

MS. BEHLING: All right. Yes. Go ahead. I'm ready anytime you are.

MEMBER KOTELCHUCK: Okay. Would you like -- you say you'd like the slide now?

MS. BEHLING: Yes, please.

MEMBER KOTELCHUCK: Sure. There we are.

MS. BEHLING: Okay. Thank you. Yeah, as Dr. Kotelchuck just mentioned, one of the major talking points at the last DRRM work group was the issue of what methods can we use for reviewing professional judgments in dose reconstruction and assessing their consistency. And this is -- we determined this is a very challenging task, but it was agreed at the December Board meeting where I presented this slide that perhaps the judgments could be assessed using this collaborative effort between the procedures subcommittee and this work group. Therefore, Dr. Kotelchuck just asked me to -- to reiterate the process that we envision.

And since the subcommittee has just begun reviewing dose reconstruction templates and associated cases with those templates, it was determined that our case reviews would include a section on areas where prof -- personal professional judgment decisions were made. This is different than the problematic. As we were talking about, these are personal professional judgments decisions made during the dose reconstruction process. And thereafter, we -- what we plan to do is compile a separate report that compares the professional judgment consistencies and the inconsistencies that are found in our reviews of these template cases, which we will share with the DRR methods work group. And this collaborative

effort should benefit from the fact that both Josie and Paul Ziemer are -- are members of both the subcommittee and the work groups.

MEMBER KOTELCHUCK: Thank you.

MS. BEHLING: So, that pretty much summarizes what our plan forward is.

MEMBER KOTELCHUCK: Great. Thank you. So, this is really nice. Not only does it -- does it give us a measure about -- of consistency, a better -- a further look at consistency in this area, but also doesn't put a burden on our resources beyond things that we are already contemplating doing. I mean, one of the difficulties in in moving ahead with the Griffin report is that there are many great ideas. They all -- but they will also involve a quite -- a -- quite a -- an extensive use of -- of our limited resources that we have for the Advisory Board. So, this is something that was ongoing to meet the needs of -- or to meet the responsibilities of the subcommittee for procedures review and -- but will also benefit us in understanding and improving consistency -- possibly improving consistency in our dose reconstruction process.

So, that's all I wanted to say and we wanted to say. And thank you, Kathy. And -- and thank you also, Rose, for preparing the slides, particularly the distribution of the 49 blinds. Are there any questions?

CHAIR ANDERSON: Yeah, I -- I have a question for you.

MEMBER KOTELCHUCK: Sure.

CHAIR ANDERSON: Are there -- I mean, I -- this is -- I think it's very positive seeing what you've done and the results of it and such a complex

program. I'm wondering are there any exposure characteristics of cases where there were differences that might point to, you know, where adjustments or focus might be worthwhile? In other words, I mean, there's really two broad areas that the dose reconstruction looks at, and that's external exposures and internal doses. I mean, my perception of it is that calculations for external seem to be a little more -- a little easier, perhaps, than the internal dose issues. Have you broken it down by --

MEMBER KOTELCHUCK: We -- we --

CHAIR ANDERSON: -- things like that?

MEMBER KOTELCHUCK: We have not broken it down further. I'm -- I'm -- this is the first time -- this is really -- this was the first time we have looked at that metric. I mean, as you know, I've reported to the Board for quite a few years now, as we've gone along in the blinds process, just said the compensation of the claims have to be the same, and that was very good and very important. But we have not looked further at this. And possibly we should. Well, we -- let's put it we should. And I think it might merit some -- some more -- some -- a little -- slight -- slightly more attention to where the differences occur, and if, at least, we can categorize them as to external, internal, etc. So, I think that would be -- I think that would be a good idea, and I think we should try to think about how to go about this. We certainly have all -- since we've -- since the dose reconstruction subcommittee has looked at the different -- has gone through each and every one of those 49 blinds cases, we have the backgrounds and we know where the difference -- the major differences occur. So, I think we

could possibly tabulate that -- put that together and tabulate that and see where the differences are.

You'll notice the distribution, by the way. Skews a little bit to the right. That is to say, since the variable was the difference between NIOSH's POC and SC&A's. I felt -- I was glad, particularly in terms of the DRR subcommittee, I was glad that the distribution skewed a little bit to the right, which meant that among the two, SC&A's reviews and NIOSH reviews, NIOSH's was always -- were always a little bit greater. And I thought well, that's fine, because we're claimant favorable. The whole process tries to be claimant favorable. And so, it's nice to know that if two people -- two groups are reviewing it, the folks from NIOSH are slightly more claimant favorable as the distribution suggests. But I -- I -- I -- I think this is a good idea that you suggest, and I think we should look into it. And -- and I pledge we will.

Any other questions or comments? Okay.

CHAIR ANDERSON: I think we can declare success on this. I think the program is doing well, and we need to congratulate both the programs that looked at it, and there weren't a great deal of differences. And I'm not sure we need to spend a lot of time chasing, which are relatively small differences. And again, they're -- the way we started out looking at compensated or not compensated is really the critical point. And that has been very -- very well handled, I think.

MEMBER KOTELCHUCK: And let's give credit to all the people who developed all of the dose reconstruction processes and -- and try to

formulate them over the decades now. And to say that it seems to be clear that we're doing a good job, and you're right. I don't think we have to chase really hard on issues of consistency, which we --

CHAIR ANDERSON: Yeah.

MEMBER KOTELCHUCK: -- which we could -- which we have -- which we have now found out and shown that the consistency is there, and that's great.

CHAIR ANDERSON: Other questions, comments people have recommendations? Just keep it up. Good job, David. That's a lot of work, but it is worth to validate the effectiveness and the consistency in the program. Okay. With that, if there's no other questions or comments, we're 10:30. So, do we want to take a break now until eleven o'clock Eastern time? Everybody's on mute, so if you're saying anything, I can't hear it. I don't see balloons going up saying that everybody --

MEMBER BEACH: Yeah, I think a break is good at this point.

CHAIR ANDERSON: Okay. So, Rashaun with that, we'll adjourn for a break until 11:00 Eastern. Come back for -- Josie, be sure your procedures presentation is up and ready to roll --

MEMBER BEACH: Yep.

CHAIR ANDERSON: -- and Kathy. Okay. We're -- we're on break.

(Whereupon, a break was taken from 10:37 a.m. until 11:00 a.m.)

DR. ROBERTS: I'll do a quick roll call starting with Anderson.

CHAIR ANDERSON: Can you hear me?

DR. ROBERTS: Yes.

CHAIR ANDERSON: Okay. I'm on.

DR. ROBERTS: Okay, Beach?

MEMBER BEACH: I'm on, also.

DR. ROBERTS: Clawson?

MEMBER CLAWSON: Here.

DR. ROBERTS: I'm gonna skip Frank. Kotelchuck?

MEMBER KOTELCHUCK: Here.

DR. ROBERTS: Lockey?

MEMBER LOCKEY: Here.

DR. ROBERTS: Martinez?

MEMBER MARTINEZ: I'm here, but I have to switch headphones because the current ones are dying. So, if you see me drop off, I'm going to come right back on.

DR. ROBERTS: Okay. Great. Thank you. Pompa?

MEMBER POMPA: Yes, ma'am.

DR. ROBERTS: Roessler? Gen, can you hear us? Okay. I can see her. Valerio? Valerio, are you back?

MEMBER VALERIO: Yes, I am.

DR. ROBERTS: Okay. Thank you. Ziemer?

MEMBER ZIEMER: I'm here.

DR. ROBERTS: Okay. Great. So, over to you, Andy.

PROCEDURE REVIEW FINALIZATION OF DOCUMENTS AND APPROVALS

CHAIR ANDERSON: Okay. Next up is the procedure review finalization of documents and approvals, Josie.

MEMBER BEACH: Oh, thank you very much. Kathy is going to take over here in a moment. We thought we'd go a little easier on you today with only four documents to review, and you've all been through this. So, I'll go ahead and let Kathy get started. Thank you so much, Kathy, for all your work.

MS. BEHLING: Thank you. Can you hear me?

MEMBER BEACH: Yes.

MS. BEHLING: And can you see my screen?

MEMBER BEACH: Yep, it's up there.

MS. BEHLING: Okay. Great. All right. We are back at discussing SPR, you know, procedures subcommittee approved documents, and namely, today, if I can get this to work, there we go, we're going to look at two PERs, an ORAUT report, and a technical information bulletin. So, we'll start with PER-42, which is the Linde Ceramics plant TBD revision. And PER-42 was issued in November of 2012, and it evaluates revisions to -- to the Linde TBD, which once they issued Rev. 3, they went back and looked at all of the previous versions of the TBD. And these revisions resulted in both increases and decreases in dose. The doses decreased due to the inability to reconstruct internal dose, which resulted in the establishment of three SECs for this site. And doses -- doses increased due to changes in exposure seen

-- scenarios in utility tunnels and, also, the distribution of internal doses to construction trade workers.

And so, just give you a little overview of the Linde operations. Operations during the 1940s included three uranium production activities. The -- it was a production of dry uranium oxide, or yellowcake. There was also production of uranium dioxide and uranium tetrafluoride. And I'll just make mention that the uranium dioxide came from the Melon -- Mallinckrodt Chemical Works between 1947 and 1949. Linde also produced nickel material for the K-25 diffusion barriers. And the operational period is listed from October 1, 1942 through October 31, 1953. And then the residual period starts in January of 1954 through July of 2006.

So, SC&A issued its review of PER subtasks one through three in August of 2014, and that is linked to this presentation. Under our subtasks one through four, we assess the issues that -- issued -- initiated the PER and in subtask two, we tried to look at and assess any of the related technical guidance documents. And then thirdly, we look at the approach that was used to identify the number of claims that required reassessment. And in that process, we identified two findings. And we presented this review of the PER to the procedure subcommittee in August of 2014. I always make mention of that, just in case anyone has any questions or wants to go back to any transcripts, I list when the meeting was held.

Okay. So, finding one SC&A questioned why internal exposures for uranium and radon could not be assigned for the period of 1954 through 1969 when there was air sampling data available that represented both

operational and residual periods. And this seemed to satisfy the criteria of OTIB-70 and also -- oh, yeah -- OTIB-70 provides guidance on determining dose during the AWE facility residual period. And NIOSH explained that due to SEC regulations, NIOSH cannot develop a model using any data during a designated SEC period. So, therefore, since a portion of the residual period falls within the SEC time frame, doses could not be estimated using OTIB-70. NIOSH did mention that they, obviously, would use any of the workers' internal or external monitoring data that is available. And based on that explanation, the subcommittee closed -- found that acceptable, and they closed the finding.

Finding two, there are two tables, Tables 611 and 612, in the Linde TBD that lists radon exposure rates that are correctly based on occupancy factors of 50 percent for trade workers and 5 percent for all other workers; however, the text that led up to this -- these tables -- the text was inconsistent with what the data was in the tables. The data in the table was correct, but the text was incorrect. And so, NIOSH agreed and they stated that that language would be changed in the next revision of the TBD. And so, in 2015, Rev. 4 of the TBD was issued, and SC&A confirmed that the wording was correctly changed, and the subcommittee closed the finding.

Okay. And then on to subtask four. Under our subtask four, this is where we review a sample of the reevaluated cases. And SC&A submitted subtask report in December of 2014, and this evaluated both internal and external doses for two cases that were selected from a population of 71 total reworked cases. Oh, let me just back up a second here. I'm sorry.

Subtask four report was issued in December of 2014, and this review resulted in one finding, and we presented this review at the February 18, 2015, meeting.

So, our one finding states that NIOSH used a skin dose correction factor of 0.892, which comes out of the external implement -- implementation guide, IG-00, rather than using the value of 1.00 for photons, which is cited in OTIB-17. And OTIB-17 discusses and gives guidance on the assignment of shallow dose. So, but SC&A did not that this -- this -- this inconsistency would not impact the outcome of the case compensation decision. So, considering that the use of the lower DCF would not affect the case outcome, the subcommittee decided to close the finding.

So, that's -- I assume we're going to take a break then and discuss PER-42 and whether you have any questions?

MEMBER BEACH: Yep, that's correct, Kathy. Thanks.

CHAIR ANDERSON: Any questions?

MEMBER BEACH: So, did we vote on these as we went through last time? I thought we did.

CHAIR ANDERSON: I think so, yes.

MEMBER BEACH: Okay. So, this is a recommendation for closing all of these from the subcommittee. Rashaun, can we just do an all in favor?

CHAIR ANDERSON: Or let's do is there anybody opposed.

MEMBER BEACH: There you go.

CHAIR ANDERSON: If nobody's opposed -- if you are opposed, you may be on mute, so. Okay. Don't -- hearing no opposed, the motion to

accept is passed.

MEMBER BEACH: Thank you. And, I think, Kathy, you can go on with PER-005 -- or 055, excuse me, Rev. 0.

MS. BEHLING: Okay. PER-055 was issued in September 2014, and it assesses the effect of Rev. 1 of the TBD-6000 and TBD-6000 is the site profile for AWEs that worked within uranium or with uranium metals. And it determines the effect of this revision on previously adjudicated cases. And again, with this PER, the revisions resulted in both increase and decrease in dose. Correction factors from uranium surface contamination were revised, and this resulted in a slightly lower photon value. And due to the introduction of correction factors for betas, dose rates increased for shallow dose.

The second revision involve changes to the 30-day surface contamination settling time. It was changed for nonoperational areas. The settling time increased to 365 days, and so this resulted in a decrease in external dose. And for metalworking processes, the settling time decreased to seven days, which resulted in an increase in the external dose. And again, beta dose rates were introduced in this revision, and that, obviously, resulted in an increase in the shallow dose for both operational and nonoperational areas.

So, our subtasks one through three review was submitted in December -- or July of 2015 and present it to the subcommittee at its May 16 -- May 2016 meeting. And under the subtask two review, SC&A acknowledged that the TBD-6000 Rev. 0 report had been reviewed under the TBD-6000 work

group. And that review initially identified 10 findings. Nine of those findings were resolved by the work group, and the remaining one finding was carried over to PER-55.

Okay. And so, the PER-55 finding had to do with the Putzier effect, and this happens after melting and molding uranium. Thorium-234 migrates to the surface during the cooling period, and this can last for a few months. And this could result in a 10- to 15-fold increase in the beta field and perhaps a significant skin dose for any workers that would be handling uranium metals. So, SC&A questioned is this potential effect being included in the calculation of external doses to the skin.

And NIOSH responded that the issue was discussed many times at the TBD-6000 work group meetings and explained that since external doses are entered into IREP as a lognormal distribution with a GSD, a geometric standard deviation, of 5, that would result in the 95th percentile doses being nearly 15 times the geometric mean. And based on NIOSH's response, the subcommittee closed this finding.

Okay. And under our subtask four review, we looked at the intern -- the external and internal dose associated with two of the 30 cases that was -- that were reworked by NIOSH. Our report was issued in December of 2016, and it was presented to the subcommittee at the January 10, 2017 meeting.

So, the first case was one where the POC changed to greater than 50 percent, and SC&A always starts our review by comparing the original dose reconstruction to the reworked DR. In this case, there were no formal

revised dose reconstructions in the worker's file. There were two files showing that NIOSH recalculated the doses using two different approaches. They first assumed that the EE worked in an appropriate TBD-specified job category, and then they reworked the case using environmental doses.

So, and although, in both cases, the internal and external doses decreased, it did result in the POC going from 28 percent to 50 -- to greater than 50 percent. The reason for that, for that POC increase, was the result of entering the doses in IREP as a lognormal distribution with a GSD of 5, rather than a constant value as had been done in the original dose reconstruction. So, SC&A was able to confirm that the doses that were calculated using both maths -- methods were correct, and we reran it IREP and -- which resulted in a POC of greater than 50 percent, and so SC&A had no findings or observations.

For the second case, doses decreased using OTIB-70, which is the OTIB for calculating the residual doses at AE -- AWE facilities. This was one of the case selection criterias that we requested in our subtask -- under our one through three subtask report. We also asked for a case that -- where the doses increased using OTIB-70, but there were no such cases. So, we just had two -- two case reviews in this -- under this PER.

So again, we compare the original DR to the reworked doses. And again, there were no formal DRs prepared by NIOSH since the compensation decision did not change. External doses decreased slightly, and internal doses stayed the same for this case. And so, accordingly, the POC decreased from 20 percent to 19 percent. And again, SC&A was able to

confirm that the doses were calculated correctly and in court -- in accordance with the TBD-6000, so we had no findings or observations.

Now, although SC&A had no findings, during our discussion of this PER at the procedure subcommittee meeting, the subcommittee did question why the original dose reconstruction for our first case -- our case A entered values in IREP as a constant rather than a lognormal. And they wanted to know is this -- was this issue confined to only this case or are there other cases that may be impacted. And the subcommittee felt that since entering the dose into IREP as a lognormal with a GSD of 5 has such a significant impact on the POC, they asked NIOSH if they could confirm whether there were other cases that -- that may be impacted by this.

So, NIOSH did go back, and they attempted to determine if this was a systemic error. And the way they did that is they randomly -- randomly selected and reviewed 10 cases out of several 100 cases that were reassessed and they determined doses in all of those cases were entered -- the IREP information was entered correctly. So, based on that information, the subcommittee closed this concern and closed the PER review.

Okay. So, that is the end of PER-55. Any questions?

MEMBER BEACH: Henry, it looks like you can take over again.

CHAIR ANDERSON: If there's no -- no need to rush, Josie. I'm just looking at all of the individuals with mute on. So -- so we're -- thanks, Kathy, for that presentation. And so, we're now going to vote on accepting the review and closing this one out. All -- if anyone objects to doing that, please speak up. If not, I --

MEMBER KOTELCHUCK: I -- I certainly -- I do not object, but I also thank you for making clear what the Putzier effect is. I've heard the name several times before, but I was never quite clear as to what physically was going on, and now I understand, so thank you for that.

CHAIR ANDERSON: A new word your vocabulary.

MEMBER KOTELCHUCK: Absolutely.

CHAIR ANDERSON: That's probably true for many of us.

MEMBER BEACH: It's kind of -- it's kind of funny, because it was in our discussions for so long, yeah.

CHAIR ANDERSON: Yeah, well, there's a lot of those that kind of just fly by and then --

MEMBER BEACH: Yep.

CHAIR ANDERSON: -- don't really challenge it if it doesn't make a difference. So, with that, we had no objections to it, so it's accepted unanimously. So, next, Kathy.

MS. BEHLING: Okay. I'm sorry, Josie, did you want to say anything?

MEMBER BEACH: No, no, I'm -- you're -- you're great. Go for it.

MS. BEHLING: Okay. All right. Thank you. All right. We'll move on to Report 78. And Report 78 is the technical basis for sampling plan. Rev. 1 of this report was issued in June of 2016. And the report describes the technical basis for the statistical sampling of coexposure datasets to determine transcription error or typo rates. And SC&A reviewed this report in October of 2017, and we had no findings or observations. And we presented the review to the subcommittee at the November 2017 meeting.

Okay. To give you a little overview of Report 78, coexposure modeling datasets, you know, are often created by manually transcribing data from original records into an electronic database. And this can, obviously, result in transcription error -- errors or typos. And so, in recognition of that, NIOSH has specified in OTIB -- or in Report 78, and I'll read the passage, that the data acceptance criteria for the coded datasets should be such that the error rate in the analytical results should be less than 1 percent with the overall error rate, meaning all fields -- all data fields combined -- and should be -- all data fields combined should be less than 5 percent. So, in order to achieve that, the report uses statistical methods to develop a sampling plan to determine the number of samples that are needed of the electronic database compared to the original data to ensure that the accepted typo rate has not been exceeded. And the report uses hypothesis testing to make this determination.

Now, the sampling plan consists of basic distribution function that is presented in an equation in the report. And using this distribution function, you can set parameters and determine your sample size. When a population is much larger than the sample, identifying the appropriate sample size, NIOSH just -- justifies using a binomial distribution, and the distribution function also creates operational curves and confidence intervals to give you an idea of how many typos can be observed and still satisfy your acceptance criteria. The -- there are many parameters that are considered for dose reconstruction purposes for which -- which apply to both critical fields. Those are fields containing analytical results and then all fields. And due to

the number of parameters to be considered. When SC&A reviewed this report, we felt it was easiest to divide these parameters into fixed parameters, variable parameters, and then the resulting values.

So, fixed parameters consist of the total population and the total number of typos in a population. And the variable parameters have a limit set on them. And they include what's called a producer's risk, and that is rejecting data with acceptable typo rate, and that is set at 2.5 percent. The consumers' risk is accepting data with excessively high type of rates, and that's also set at 2.5 percent. There is an acceptable error rate for critical fields that's set at 0.5 percent and an acceptable error rate for all fields at 2.5 percent, an unacceptable error rate for critical fields is 1 percent and an acceptable error rate for all fields is 5 percent. So, the end -- and the derived or absorbed -- observed values are listed on this slide, and those are the values of the number of fields to be sampled under a given set of fixed and variable parameters. Also, the value of except -- of the accept number of typos, this is a balance between the producer and the consumers' risk, and the number of typos observed in a specific sample of so -- so many number of fields, and it generates an operating curve and also a confidence interval.

So, SC&A had our statistician look at the statistics and the approach used by NIOSH, and we had no findings. However, again, during the discussion of Report 78, the subcommittee did have a question regarding the arbitrary nature of the selection of acceptance criteria. The subcommittee wanted to know is there guidance or a benchmark on how others determine

this selection criteria. So, NIOSH went out and searched the literature, and they consulted an outside expert. But they determined that there were -- there were no benchmarks and -- or standard guidance on the acceptance criteria; however, NIOSH further stated that the selection of 1 percent for the critical values and 5 percent for all other values just seemed reasonable and intuitive, and the subcommittee agreed with that.

So that sums up Report 78. Are there any questions?

CHAIR ANDERSON: Any questions?

MEMBER ZIEMER: Not a question, but a comment, Andy.

CHAIR ANDERSON: Go ahead.

MEMBER ZIEMER: If -- if the Board accepts this recommendation, I just want to remind us that we are in -- in fact, endorsing the 1 percent and the 5 -- the 1 -- wait a minute, was it 1 or 2 percent and 5 percent values as being reasonable. I think it's important that we recognize that.

CHAIR ANDERSON: Okay, thank you.

MEMBER BEACH: That's a good point, Paul. Thank you.

MS. BEHLING: And this was Paul's question, yes, during the discussion.

CHAIR ANDERSON: I have a question that -- can -- can you -- do you have any information on how often those numbers are, you know, I don't want to say violated, but are found and therefore, it's unacceptable? I mean, the numbers seem -- you know, it is what it is, but it'd be nice to know how do they error rates occur? What -- what -- what is commonly seen and is it close to the 1 percent, 5 percent, or where is it?

DR. TAULBEE: This is Tim. If I could answer that. I don't have the exact numbers of how many times we've exceeded this, but I will say that we do occasionally see where we exceeded it, and we go back and we look at the dataset, and we investigate it. And typically, there's a coding error or some difficulty with it. So, the values really seem to work from that standpoint. And whenever we're -- you know, the first pass of the dataset that meets those criteria and we don't see anything, you know, we have really good confidence in that dataset. So, I will say that we have occasionally exceeded it. It's not often, but it does occur, and it clearly does then work and point out whenever we do have something that is a little bit of a miss, and it could even be only for one year, but we do see it occasionally.

CHAIR ANDERSON: Yeah, I was just -- mean, what I was wondering is if you calculate the error rate on -- on all the datasets, what is the distribution? I mean, --

DR. TAULBEE: We can go through and do that.

CHAIR ANDERSON: As opposed to -- I mean, are these way out in the tail, or is it common in the datasets that you see a 4 percent error rate, and therefore...?

DR. TAULBEE: No. For each of these, what we're doing is we're calculating the error rate with a 95th percent confidence interval about it. And that confidence interval has to remain below the 1 percent for the analytical results, below the 5 percent. It can't include those values. And so, I mean, that's our acceptance criteria. We don't accept it until it's fixed,

from that standpoint. And on the new code exposure models that we have been publishing, the one for INL and the one for Savannah River, if you go back --to the back of them in the appendices, you'll see each of those datasets and these values are listed for each of the datasets used to create those coexposure models. So, we are reporting them in every TBD that we are putting out for coexposure models now.

CHAIR ANDERSON: Okay.

MEMBER ZIEMER: Tim, could I follow up? I don't remember asking this before, but if you do find a set that's out of specs here, you go back and find where the errors were and, basically, put the dataset back into compliance; is that basically what's happening?

DR. TAULBEE: Yes, --

MEMBER ZIEMER: Correcting the --

DR. TAULBEE: -- exactly. We --

MEMBER ZIEMER: -- occurs, yeah.

DR. TAULBEE: We figure out what went -- what is wrong with that particular dataset. And in some cases we have to go back to the site and get additional data from that standpoint. Actually, it's -- it's pretty rare from that, because this is the typographical ones. But sometimes there's a coding error where, you know, one of the data coders misinterpreted something, but we go back and we check the whole dataset again.

CHAIR ANDERSON: Okay. Any other questions? Well, everybody, you-all agree that these are appropriate numbers to use, even though there's no firm foundation for why? So, if anybody objects to adopting

them, as Paul pointed out, it's -- compared to some of the others, this has an important impact on really becoming professional judgment issue that we're endorsing here. So, if nobody's objecting, we'll accept this unanimously as --

MEMBER KOTELCHUCK: Yes.

CHAIR ANDERSON: -- the review. Okay. Kathy?

MS. BEHLING: Okay. Okay. And I -- fortunately, for me and for you, Steve Ostrow has agreed to present the complex review of OTIB-54. Steve was the lead author on this review, and he's SC&A's expert on reactor design. So, I wanted to give him enough time to go through this, and I will turn the remainder of the presentation over to Steve. Okay.

MEMBER BEACH: Thank you, Kathy. And thank you --

DR. OSTROW: Good morning everyone. Good morning everyone. This is Steve. As Kathy said, this is a really complex OTIB. Before I begin with the slides here, I should have included one more slide at the first one to answer the question what does OTIB-54 actually do. Probably most people here don't know about it. The -- it answers the question (indiscernible) air sampling or urine analysis data on worker with exposures to mixed fission activation products are available only in the form of gross beta or gross gamma activity unattributed to specific radionuclides. And to do a dose reconstruction you really need the -- the activity for the specific radionuclides, so what do you do in these cases? So, in these cases, OTIB-54 provides guidance and a standard approach on how to assign radionuclide-specific intakes to exposed workers, and given that, then you

can calculate the doses that they receive. So, that's a little preface that I conveniently left out of here.

All right. So how do we review it? This has been going on for a long time. The OTIB, initial one came out 2007. The first one that SC&A reviewed was Rev. 0, PC-1, page change 1, in March 2008. And we produced a report. Came out with lots of findings, 27 -- 26 findings on that. Rev. 1 of the OTIB came out in November 2013, which was a great improvement over red -- Rev. 0, and it answered a lot of the questions we had on the first issue of the OTIB. Rev. 2 came out in April 2014, while we were still reviewing Rev. 1, so we looked at that also. So, we sort of de facto reviewed Rev. 2 as part of evaluating the -- NIOSH's responses to our comments for Rev. 1.

Subsequently, Rev. 3 came out in February 2015, which although, we had reviewed, only had minor change -- changes over Rev. 2. And the current one in Rev. 4 in August 2015, which primarily corrected various typo errors in the previous ones. So, we're pretty much up to date on the OTIB-54.

So, in our initial review, we identified 26 findings, 11 of which were classified as observations in the BRS. When we did our big review of Rev. 1, we identified 10 more findings, and in the BRS labeled them a findings 27 to 36. So, we have a lot of -- we have a lot of findings, but our review of Rev. 1, basically, superseded a lot of the 26 initial findings that we had.

Okay. Change the slide, please. Next slide.

All right. So, just a little bit background. The idea of the OTIB was

trying to create a space -- sort of a phase space of reactor and fuel types, burn ups, etc., that would encompass the majority of actual DR cases. So, when a dose reconstructor is looking for a particular case on a particular plant or a particular reactor, they could select one of the representative models that are in the OTIB that would best represent the -- model it with the case that they have. So, initially in the process of the OTIB, NIOSH selected seven reactors, of representative reactors, they had two Hanford reactors, the N reactor and a single-pass reactor. They're both plutonium production reactors. Fast Flux Test Facility, which is a sodium-cooled fast reactor, Advanced Test reactor, which is a high -- represents high-flux reactors, TRIGA reactors with aluminum fuel and with stainless steel clad fuel, which represents smaller research reactors, and a pressurized water reactor, which is sort of a generic reactor.

Next slide.

So, the -- NIOSH did -- in part of their modeling, they ran first the origin code, which is the radioactive buildup and decay code, which is well-known industry -- industry standard. They used the ORIGEN2, which is a particular version. So, they ran 11 cases to calculate fission and activation product inventories in fuel discharged from their seven initial reactors. Then the results of those 11 runs were compared based on activities relative to Caesium-137 and normalized to that. After 10 days of decay and four representative reactors were selected. This was the final four that were selected.

There's a lot more calculations and steps that had been done to get up

to this point, and eventually four were selected. The Advanced Test reactor, which is the -- it's still in operation actually, at Idaho National Laboratory. It -- for material testing. It's beryllium reflected. It's a pressure -- pressurized light and water reactor moderated. And its -- it has high enriched uranium and high burnup.

The Fast Flux Test Facility, which is 400 megawatts thermal and operated at Hanford and sodium -- liquid sodium cooled mixed oxide fuel high burnup. Hanford N reactor, which was a graphite moderated, slightly enriched reacted. That's a plutonium production reactor. Then the after it stopped plutonium production, they used the steam for -- for the Washington public power system, WPPS, to provide electricity. And finally TRIGA reactors. It's low powered, water cooled. It's a swimming pool-type reactor. Interestingly, the TRIGA reactors have a very large prompt negative temperature coefficient of reactivity, which means that you could take out the control rod very quickly, and you got a huge power pulse for experimental purposes,. But then the reactor would shut itself down almost immediately. And I think there were something like 60 or 70 TRIGA reactors produced throughout the world. It's by General Atomics.

So, next slide, please. Okay. There we go.

So, here we get to the actual findings. I'm not going to go through all 36 in detail because that would keep us here the whole day. I'd mentioned that a lot of the initial 26 were resolved when Rev. 1 came out, and we also took the liberty of consolidating some of the findings on the following tables. It didn't call for having a separate one for each. All right. Anyway, getting

on.

Finding one. So, remember this is on the original Rev. 0. This was an observe -- observation we had on reactor modeling. The OTIB didn't specify what version of ORIGEN2 NIOSH used, because there's different versions. NIOSH gave us information on that. It was version 2.1. And this was incorporated in Revision 1 of the OTIB that specified what version of ORIGEN they used. And the -- we accepted that, and the SPR closed the finding in its July 2013 meeting.

Okay. Next slide, please.

Here's where we consolidated the five findings, numbers 2, 3, 4 ,6, and 10 were all informational only. The -- that we -- at least, in those early days, very often rather than criticizing NIOSH for doing something, we actually praised them in several places for doing something that we thought that was nice or correct -- or correct. So, these were the things where we agreed with NIOSH, so it didn't require any further review.

Next slide, please.

This is finding five. The Fast Flux Test Facility that we thought the methodology and data sources were reasonable. We went into -- in all these reactor cases, we really dug into the information about the individual reactor models that were chosen, did a lot of research on that. And we had questioned the burnup, and that's for how much you use the fuel, how much of the uranium or plutonium, whatever, that you use. And NIOSH came back and specified that it was 80,000 megawatt days per metric ton of heavy metal. That's a nice unit. They picked -- why they picked that

burnup rate. And we agreed with it, that it was reasonable, the 80,000. And based on that, the SPR closed the finding in its October 2010 meeting.

Next -- next slide, please.

Okay. Finding seven this next one. This is for the single-pass reactors, which is a Hanford N reactor. The -- we questioned that the initial fuel dimensions, compositions, and burnup values applied to the really early days. This is, like, one of the oldest reactors that we looked at. It applies to the Manhattan Project era. But the reactors continued to operate well after that period. So, we just questioned why -- that there -- there should be some justification for the assumption that the data did not change significantly, in that Manhattan era data. (Indiscernible) or not, NIOSH responded that they intentionally captured the Manhattan era fuel and modeling for single-pass reactors, and the -- they said that the evolution of the solid core fuel slugs -- they didn't use fuel rods. They used fuel slugs in those days -- which were used until the mid-1950s -- would not affect the fission activation product results. We looked into that and agreed, and the SPR noted that the findings had been closed at their April 2015 meeting. In fact, at the April -- the April 2015 meeting, the SPR noted that all the findings had been closed, the initial ones from Rev. 0 of the OTIB.

Okay. Next finding or next slide, please. Okay.

In this one, the -- this is another one that's a single -- on the single-pass reactors that the OTIB referenced a particular person rather than citing original source material directly. The -- NIOSH responded that the -- in Rev. 1 -- this goes on for two slides, so Kathy, we can go to the next slide,

please. All right. The -- and in the -- in July of 2013, NIOSH responded about the ORIGEN calculations, that they revised the calculation of the single-pass reactors to reflect a different set of dimensions from the Manhattan era fuel slugs. So, and they had responded to our comment and they cited the original source documents for all the data used. That -- that discussion had been removed from OTIB-54 and will be put into a separate document, which they did later. So, we looked into it and OTIB Rev. 1 addressed the issue.

Next slide, please.

For finding nine, this is on the TRIGA reactors. The TRIGA is a -- range from little ones from about 20 kilowatts up to 16 megawatts. They had a whole range of them. And the fuel enrichment from about 20 percent to 70 percent. The OTIB chooses 70 percent enrichment but didn't justify its -- its choice. All right. So, NIOSH responded that the -- they wanted to represent TRIGA reactors usually within the DOE complex that operate with moderate enrichments and burnup. The -- as I mentioned before, I think there were 60 something or 70 something TRIGAs produced around the -- for use around the world, but General Atomic, about half in the US and half overseas. And the DOE just had a handful of TRIGA reactors. A lot of universities that had nuclear programs got TRIGA reactors. So, the -- the uranium content of the fuel was based on fuel elements from the TRIGA reactor operated at the Hanford neutron radio -- radiography facility. And the -- they picked an average power level of three kilowatts. So, we were do -- we reviewed the -- the work that NIOSH did, looked at the actual

NIOSH workbook, and agreed with NIOSH that was reasonable. And in April 2015 SPR meeting, they closed this finding.

So, next slide, please.

Here's where we had consolidated some findings, three of them, 11, 17, and 90. And this was because the -- they became moot when went from Rev. 0 to Rev. 1 of the OTIB. There was a finding 11 on reactor source terms, finding 17 on urine analysis. Finding 19 was also on urine analysis. And I'm not going to read the three of them, but, basically, these were all moot.

Next slide, please.

Finding 12. We're still on Rev. 0 of the OTIB. This was on reactor source terms. Table D-1 of the OTIB presents a list of radionuclides, a long list. The -- we had observed that NIOSH does not provide an explanation for the derivation of the relative exposure activity fractions listed in the table. The -- NIOSH promised in October of 2010 to elaborate on the methods used to calculate the values in that table and July 2013 responded that the tables are -- and they gave the explanation of what they are here -- that these are radionuclides that contributed at least 1 percent of the dose to any organ or to effective dose for at least one of the three solubility categories that were deemed dosimetrically significant radionuclides. The -- I think the reason was that originally they had a huge list of nuclides, which made it cumbersome to actually do a calculation. Remember, the ultimate goal of this was for a dose reconstructor to actually use the OTIB. And so, -- so the -- NIOSH decided to throw out or eliminate radionuclides that contributed

less than 1 percent of the dose to any organ. So, we -- responding in Rev. 1, we reviewed it. And the July 2013 SPR meeting closed the finding.

Okay. Next slide, please. Okay.

Finding 13, which actually goes on for two slides, the original finding was -- and this is -- you know, these are hard to appreciate the findings unless you have the OTIB sitting in front of you. But the -- eventually, the OTIB gets down to 17 radionuclides in Table E-1, which is called simplified reactor source terms for intake calculations. This is a -- you know, NIOSH got down from hundreds of potential radionuclides to 17 here. And we thought they did should include four additional radionuclides and using NIOSH's own criteria of effective doses greater than 1 percent. So, NIOSH agreed with us, and they -- they said they'll make it the revised OTIB.

So, next slide, please.

All right. In this they did. The -- we reviewed Rev. 1. Saw that -- that table's revised, each -- include each radionuclides with a contribution equals 1 percent of the effective dose, and we checked the calculations of Rev. 1 and agreed with them and recommended that the finding be closed, which the SPR did on its July 2013 meeting.

Next, please.

Issue 14. This goes on for three -- three slides. The -- this has to do with reactor source terms also. We questioned not -- the OTIB's practice of averaging the source terms over the four reactor types to produce the default source terms in Table E-2 since in -- since in most cases the dose reconstructed would know which type of reactor or reactor fuel produce the

claimant's exposure. Okay. We thought that when we -- when the -- when the -- when they're actually doing a dose reconstruction, they would know which reactor or fuel type the employee's being exposed to, that's why you were averaging it. So, NIOSH didn't agree with that, that -- especially for some of the big sites, they have multiple reactors, and the dose reconstructor may not know which particular reactor an employee was exposed to. So, the purpose for averaging the four representatives of reactors was to create a single hypothetical representative reactor appropriate for all sites.

Next slide, please.

Okay. So, in this one, that we agreed first that the dose reconstructor may not know what reactor to select, but we didn't think that averaging over four reactor types would produce a bounding exposure. That -- we thought that the source terms for the reactor type the yields and maximum exposure should be used for consistency with -- with stated purpose in the OTIB. Well, the OTIB -- let's just go back a little bit. As part of its purpose is to be claimant friendly, claimant favorable, you might say. That whenever -- it ended up, it did do this. That we think -- that whatever they had to make -- whenever there had to be a choice made an assumption made, it was claimant favorable, which is a little bit of a philosophical question we had in some of the discussions that it has to be claimant favorable, but also reasonable. And I think the SPR agreed with NIOSH and also with us, that it's -- it produces reasonable results. Because you can always just make the dose so high that it's always claimant favorable, but it might not be a

reasonable type-dose. All right. So, NIOSH responded that we should review a particular section of the -- of the OTIB, ,and the SPR asked us to look at it some more. And which goes on to the next slide, please.

Okay. And this one, Rev. 1 of the OTIB replaced the methodology used in Rev. 0 entirely, so the finding -- after we spent all this time thinking about it and talking about it, it's no longer applicable and is resolved. The -- NIOSH replaced the approach of averaging over four representative reactor cases where one where the assigned dose is the maximum determined for nine individual reactor cases, which reflect a range of radiation parameters for four representative reactors. So, we concurred and the SPR concurred to close the finding.

Okay. So, we're going on now to number 15. Okay. So, this one's also a reactor source terms. We noticed that some of the radionuclides were not released in significant quantities for all four reactor types. So, the average source term for those radionuclides as listed in Table E-2 underestimates the values given in Table E-1. So, default source terms underestimated the value is given in the simplified source term tables, which is all sort of esoteric unless you really read all this stuff. And NIOSH responded that the discussions and comments in finding 14 are the same as for 15, so the -- whatever happened in the last one was applicable for finding 15 also, because Rev. 1 of the of the OTIB used of different methods altogether. And the SPR agreed in the October 2010 meeting and closed the finding.

Okay. Next one, please.

This is a two -- this is a two-slide discussion and also with source terms. The OTIB didn't provide quantitative effect of the uncertainties cited in one of the sections. So, SC&A cannot agree with conclusion of the default source term produces an upper bound to doses from a nonspecific radio analysis. NIOSH responded they're in the process of establishing appropriate methods. And go on to the next slide, please. Rev. 1 of the OTIB, I think we mentioned this in one of the earlier findings, states to assign the maximum dose obtained from nine individual reactor cases and in -- nine cases were selected to reflect the expected range of radiation parameters for representative reactors. So, we analyzed that, and we thought that this methodology adequately addresses our concerns. The SPR at the April 2014 meeting closed the finding.

Okay. Finding 18. All right. This was on urine analysis. We verified the intake retention factor -- fraction values Table F-1 with different -- with a different software package than IMBA. And so, the only nuclide with a difference is iodine, for which the OTIB intake retention factor is 23 percent higher than the one derived by SC&A. So, that's some inconsistency. NIOSH responded that the -- this difference, 23 percent, has no effect on the indicator nuclide activity fractions as iodine -- iodine's not considered these calculations, which are we thought about this. This is claim -- actually, claimant favorable since including the iodines would decreased the activity fractions for the indicator nuclides for the shorter decay times. So, the -- it's actually, claimant favorable to do it this way. So, we recommended that the finding be closed, and the SPR closed it in October

2010 meeting.

Finding 21. This is also urine analysis. We couldn't reproduce all the percentages listed in Tables G-1 to G-4, which is the radionuclide contributions to urinalysis counts following NIOSH's procedures that they gave with the values listed for Strontium-90, which was the indicator reference nuclide for a urine analysis for betas. So, the -- NIOSH noted that we were -- that there's an issue with attachment G, with Table DJ -- data, and they were working to correct it. And the -- the -- so, NIOSH noted that in July 2013. They revised the tables and the -- this became resolved in Revision 1 of the OTIB. That was closed in July 2013 SPR meeting.

So, next slide, please.

21 is also a urine analysis. And these are real nitty-gritty-type things about the tables. That the radionuclides listed in Tables G-1 to G-4 are the ones taken from Table D-1, and the simplifications introduced in Tables E-1 and E-2 were not used. So, NIOSH said yeah, we're correct, and the -- the simplified source terms given in attachment E are the basis for Table 7-3 and 7-4. Attachment G and Tables 7-1 and 7-2 are based on the nuclide mix given the Table D-1. So, we agreed with that -- with their response. It clarified for us what it was doing, and the SPR changed it at the -- closed the observation in January 2011 meeting.

Next one, please. All right.

This is finding 22. Also a urine analysis. We have a lot of findings on that. Okay. And looking at the tip -- the G tables, SC&A doesn't agree at all that the trends are similar for all solubility categories. We don't agree with

averaging the results from the solubility category. The most flee -- claimant favorable approach would be to use the percentages for insoluble radionuclides in all cases. This is another one where revision 1 of the OTIB resolved it. The OTIB was revised to use the most insoluble forms, as recommended, and the SPR closed the finding in the July 2013 meeting.

Next slide, please.

And this is a two-slide presentation for finding 23. Urine analysis again. And we noted that the oversimplification of results -- remember that the OTIB goes through several steps that are trying to simplify the dataset they have so that a dose reconstructor can use it, actually. That this creates reference numbers that do not relate to the real exposure of the workers. That's what I said before, as I mentioned briefly, that we had this over -- overall concern and the committee had this over -- overall concern, that the numbers may end up being claimant favorable, but that they -- they bear no relation to the actual exposure the workers. So, NIOSH responded that the OTIB was intended to provide a favorable overestimate, and the document states that doses determined by -- via OTIB-54 should be assigned this upper bounds, so it's an upper bound-type of approach. After some discussions at the SPR meetings, the January 2011 meeting, the SPR wanted to look at it further.

So, next slide, please.

Rev. 1 of the OTIB has a discussion of this section 8.1, which were -- which explicitly states the assigned doses are likely upper bounds and should be treated as such. So, the -- we looked at it, and said the clarification

sounds good. The subcommittee closed the finding 23 at the -- at the July 2014 meeting and also noted that finding 36, which comes up later, is -- has a similar discussion, but on some broader issues. So we'll go -- we'll get to that later.

Okay. Next. Finding 24. This is air surface contamination. That -- this is similar concern, that all the oversimplifications that were -- that were discussed in finding 23 result in -- resulted in a conclusion that do not relate to the real exposure the workers, so they're -- they're claimant favorable, but they may not relate to the real exposures. The -- NIOSH commented and we agreed, and the SPR agreed, that the Rev. 1 explicitly states that this is a claimant favorable upper-bound approach, so the finding 24 was -- was closed.

Finding 25. This was several parts. We found a urine activity fractions used indicator radionuclide is somewhat arbitrary. Overestimation of doses due to simplification does not relate to real intakes and excretion rates and reactor averaging, solubility averaging, and other assumptions underestimate urine activity fractions. NIOSH response is that Rev. 1 of the OTIB addressed all these issues. We review with that, and the SPR closed this finding in its April 2014 meeting.

Okay. Next. Excuse me. All right.

So, finding 26. We're still reviewing Rev. 0 of the OTIB. We got a lot of findings. And this is -- this is sort of repetition. We found the methods described in the OTIB will provide intakes and doses not correlated with the real ones. The differences are unknown and depend heavily on the scenario,

reactor type and detection methods. And NIOSH responded okay, Rev. 1 is going to address these concerns. We -- the SPR noted in its April 2014 meeting since SC&A has been tasked to review the revised OTIB, that's Rev. 1, the SPR closed the finding. So, it'll be handled later.

Finding 27. Hang on while I take a drink of water. All right. So, this was SPR finding 27, which represents the first finding we had on Rev. 1 of the OTIB, which also applies to Rev. 2, 3 and 4, because they didn't change these things. In this finding, SC&A wasn't able to evaluate the appropriateness of the input parameters used for the ORIGEN2 runs since they're not specified or references cited in the OTIB. And here we have something new. NIOSH responded, a separate report was planned that will document the reactor modeling process in detail. So, we've -- we've had a lot of questions about the reactor modeling process, and NIOSH decided to respond with a stand-alone report, the ORAUT Report-0067 supporting calculations for OTIB-54 and Report-0047, Rev. 0. So, NIOSH responded to many of the questions that we had in this -- this separate report.

We -- SC&A reviewed it in 2015. See, we're getting to the closer to the -- a little bit closer to the present day here. We reviewed the report, which was also a very technical report, and we were satisfied for this particular finding that the report adequately addresses the comments about ORIGEN2. It specifies and references it so we could look it up and check them out and so forth. The SPR closed this finding it's February 2015 meeting.

So, next, please.

The -- we commented the OTIB does not provide sufficient information to allow evaluation of it's down select from the initial seven to final four representative reactors chosen. If you remember, at the very beginning of the presentation today, my presentation, the -- initially the OTIB looks at seven different representative reactors, and the after doing calculations and other things, narrows it down to just four representative reactors. And we complained that it didn't provide sufficient information. The NIOSH report, the ORAUT Report-0067 addressed our concern, and the SPR changed the status of -- well, this is two slides. One -- it's a -- next slide, please.

So, we reviewed the Report-0067 and concluded that the -- it -- it addresses our thought -- our finding, so the SPR closed the finding in the April 2015 meeting.

Next, please. All right. Finding 29. At the very beginning, NIOSH ran nine cases using ORIGEN. In this case, they used ORIGEN-S, which is a little bit different than the ORIGEN2 code. And that S stands for scale system. The scale is a big NRC-approved -- I think Oak Ridge produced it -- reactor modeling tool. And origin S has some advantages. Anyway, and we had the finding that each of the nine cases that they ran, the origin S parameters include specific power, radiation time, and burnup, and the OTIB includes a basis, but does not say how the values were selected or cite any reference. And once again, the Report-0067 provides all the information that we were asking for, and we looked into the details of the reactors themselves and so forth, the modeling, and the -- at the February 2015 meeting, the SPR closed this finding.

Next, please.

In this (indiscernible) for the TRIGA reactors, the initial list of seven reactors had both aluminum clad -- fuel clad -- cladding and stainless steel fuel cladding. The four reference reactors picked had -- they had TRIGA reactor, but they didn't say which cladding was assumed for the -- for the reference TRIGA reactor finally. And the ORAUT report, again, 0067 explicitly said what they use, and we were satisfied. So, at the February 18, 2015, meeting the SPR closed the finding.

Finding 31, and this is a two-slide one also. And it's going back to release fractions for exposures to airborne radionuclides. The OTIB starts with the fuel inventory rather than the mix of radionuclides in the gas gap or primary coolant. Okay. So, this is -- for those who are not totally familiar with how -- of reactors, you had the fuel, and you have the fuel inventory, which is actually in the fuel pellet or the fuel rod or whatever. That's one fuel inventory. But some of this gets into the gas gap, which is the gap between the fuel pellet and the cladding or some of it gets into the primary coolant, so there's different fuel inventories. So, the OTIB starts with the fuel inventory rather than the mix of radionuclides and the gas gap or primary coolant. And here we were concerned for workers involved in the handling waste streams using isotopic mix in fuel as a starting point might not be appropriate, because if you're doing, like, fuel processing activities or the -- you're looking at nuclear waste, that you may not have the same isotopic mix as you do in the reactor fuel itself. NIOSH responded that limiting the radionuclides to just those in the gas gap or coolant would not

be appropriate for fuel separation or other work activities that would likely reduce the assigned doses. We look at it further.

And go to the next slide, please.

NIOSH prepared -- we agreed with the response about preferring reactor fuel radionuclide inventory rather than gas gap inventory as the starting point, but not knowing the -- the organ of concern, SC&A questions whether the NIFs, the fractions, used to derive radionuclide intakes based on gross beta analysis of urine are claimant favorable, because you don't know what organ of concern you have. So, NIOSH prepared a white paper, yet another technical paper, and concluded although, release fractions adopted in OTIB-54 can result in lower doses under certain conditions, they're considered more appropriate produced during normal operating conditions. So, that they -- you could conceivably find cases where the release fractions may be underestimated somewhat. Most cases they're not going to be. So. we reviewed, the SPR reviewed in April 16, 2015, meeting. The SPR closed the finding.

Finding 32. This is dose conversion factors. The finding is the use of effective dose conversion factors is appropriate for screening purposes if the objective of the OTIB was to reconstruct whole-body doses, but not necessarily claimant favorable for organ doses. So, the distinction here is that you can -- you can reconstruct whole-body doses, which is averaged over the whole body, but in the -- when you do dose reconstructions, you're really looking at specific organ doses. And we said that some radionuclides not present in the reduced list of -- of the nuclides may be -- may make a

significant contribution intakes in organ doses. So you can go -- that we didn't -- that the OTIB throws them out, it may make actual contribution to the intakes in organ doses. NIOSH responded the list of nuclides in this Table D-1 was not created using effective dose conversion factors. Its list was committed -- created using committed organ doses, and the list created in Table D-1 was later reduced using effective dose as shown in Table E-1, as recommended by SC&A. So, NIOSH responded with more details of what these tables and process actually represent and finished up by saying they actually did do what we recommended. So, we looked at it more carefully and agreed with NIOSH. And in the April 2014 meeting, NIOSH (sic) closed this finding.

Next one, finding 33. The commented intakes in organ doses should be calculated using the same set of radionuclides as used to derive the contributions to total beta excretion rate results. And here, NIOSH said it's desirable to limit the number of associated radionuclides considering the organ dose calculations to reduce the computational burden on the dose reconstructors, which is already pretty large given this OTIB. There was a discussion on this. And we decided that the -- that this is a good -- it's a valid response, and it wouldn't affect -- shouldn't really affect the findings of the dose reconstruction, so we agreed with the response. And the SPR closed the finding in April 2014.

Next slide, please.

That's number 34. All right. Here we are taking urine samples. We questioned whether the OTIB methods would miss certain radionuclides,

such as the iodines, especially for large fraction of the activities lost in the analysis of urine samples. This is getting down to the details of how do you do urine samples. The -- NIOSH responded that they made the claimant-favorable assumption the iodides were not present in the urine, and that chemical recoveries for separations procedure are immaterial unless they differ significantly for different radio elements. In gross beta counting, the chemistry uses mostly irrelevant since most of the activity's from strontium for any reactor decay time. So, we agreed that this is not relevant, and the SPR closed the finding in its April 2014 meeting.

Finding 35 was also in two slides. We went into the current, at the time -- this is 2013 -- the OTIB workbook, and this is after Rev. 1 of the OTIB was produced. And we met -- we just found that the current -- the -- the workbook that was current at that time 1.01 didn't match the current version of the OTIB. NIOSH recognized that. They revised the OTIB before they revised the workbook. And then they responded that they revised the tool, the workbook, on November 22, 2013, so they took care of that. And we were tasked to review the revised tool.

Next slide, please.

Okay. We revised -- we looked at the revised tool and found that the current -- the version that was produced then matches up to the -- to the OTIB itself. We had a teleconference with -- with all concerned parties in October 2014 and went over the workbook concerns. And the -- I was addressed -- the -- we noticed that there were some inconsistencies, especially promethium 147's -- 147. So, the new tool addressed that, and

SPR closed the finding in April 2015 meeting.

This is the last finding, 36. It's also two slides. And once again -- we brought up the subject several times, and the SPR brought it up several times, too. We accepted the basic approach using the OTIB as claimant favorable, but believes that more discussion of the overall claimant favorability of the strategy employed in the OTIB is warranted. NIOSH -- this is -- this gets to, sort of, a philosophical question. NIOSH responded the goal of the OTIB was to develop a process to have little chance of underestimating a worker's dose. It was never intended to be precise. Additional discussion of that point can be added as requested. The SPR asked us to look at it some more, and last slide, go to. Change the slide, please.

MS. BEHLING: I did -- I did change it. Are you showing it? It's the follow up. Are you seeing --

DR. OSTROW: I got it. I got it. I got it.

MS. BEHLING: Okay.

DR. OSTROW: Okay. Thank you.

So, there was a technical call in -- May 13, 2014, about this. The -- the SPR at the April 2014 meeting agreed with the results of the technical call and closed the meeting -- the finding. So, this was, basically -- the SPR agreed with the overall philosophical approach about how claimant favorable it is. It's supposed to be an upper bound.

Okay. So, that's it. We went through all of the findings. We just have the conclusion slide. Next slide, please. Okay.

Conclusion. Twenty-six findings on Rev. 0 of the OTIB, 10 findings of -- on Rev. 1. which also applies to Rev. 2. All findings have been discussed and closed by the SPR, and NIOSH made the appropriate revisions to the OTIB based on the papers -- and the many papers and many discussions. So, we consider the -- it closed, the OTIB. So, that's the end.

MEMBER BEACH: Thank you, Steve, for leading us through that. I'm sure Kathy was very pleased not to have to.

DR. OSTROW: Yeah.

MEMBER BEACH: It was a complex, complicated set of slides. Any comments or discussion?

MEMBER KOTELCHUCK: Yes. Dave. How many -- this must have encompassed years of work on your part --

DR. OSTROW: It did. It started in 2008 and went on for many years. There were a lot of technical papers that NIOSH produced, and we had a bunch of response papers, you know, back and forth and a lot of discussions and meetings.

MEMBER KOTELCHUCK: Well, very good. It's -- your -- your -- your attention to this -- this and -- and all of your work on this is impressive.

MR. OSTROW: Thank you.

CHAIR ANDERSON: So, what has been done recently? I mean, most of those findings are from 10 years ago, and is that -- now, you've resolved all of those, but what is the status now of OTIB-54?

DR. OSTROW: Well, as far as I -- I can see, so we reviewed formally Rev. 0 and Rev. 1. Rev. 1 also applies to Rev. 2, because we -- Rev. 2 came

out while we were revising Rev. 1 and took a look at it, and we didn't look at Rev. 3 or the current Rev. 4 in detail, but from what I can see quickly, by looking at the -- the record of change and looking at it quickly, it doesn't appear that Rev. 3 or Rev. 4 changed anything significantly. NIOSH -- if anyone there on the NIOSH's -- or ORAUT is really familiar with this OTIB, am I correct that you didn't really change things for Rev. 3 or Rev. 4?

DR. TAULBEE: This is Tim. That correct. Rev. 4 -- both of those were kind of minor corrections to tables and things that -- that we found were -- had some small typo error-type things.

DR. OSTROW: Yeah, that's my impression also. So -- so, I think that the OTIB-54 is done with now.

CHAIR ANDERSON: Okay. Question is -- this maybe for Tim. What proportion of the dose reconstructions that are currently being done use OTIB-54?

DR. TAULBEE: Wow. That would be a difficult --

CHAIR ANDERSON: I mean, is this a --

DR. TAULBEE: -- question to --

CHAIR ANDERSON: -- gray or --

DR. TAULBEE: -- answer.

CHAIR ANDERSON: I mean, I understand what's going on in the -- in the reactors and all this kind of thing. The other, kind of, the follow-up question is, how does this use OTIB-54 relate to the use of the monitoring -- individual monitoring data that you have?

DR. TAULBEE: Well, OTIB-54, --

CHAIR ANDERSON: (Indiscernible) used when they're -- when you don't have monitoring data.

DR. TAULBEE: No. It is used when we have monitoring data. What it does is, it takes that monitoring data, it might only be measurement for one particular radionuclide, say, caesium for whole-body counting or strontium as what we assume for urine analysis, and it expands it to all of the -- the mixture of fission products at a reactor site or a separations facility, such as Hanford and Savannah River, primarily. But any of the reactor sites, we use OTIB-54 extensively. The uranium sites, not so much. We don't -- we don't use this because there isn't really mixed fission products there. So, it's really difficult for me to say how many of the dose reconstructions use this and how many don't. I mean, we could go through and -- and do some queries. Well, we'd have to ask ORAUT to do those queries because we don't have access to NOCTS right now. But it would be very difficult to try and come up from that. I will say OTIB-54 is one of our more critical documents for sites that do have reactor work or separations work. And so, we use it extensively, but it's not in every dose reconstruction.

CHAIR ANDERSON: So, it's usually used then -- you have urine analysis for compounds and you -- this adds an exposure?

DR. TAULBEE: It interpret -- it helps us interpret the exposure for a suite of radionuclides, and it's designed to be claimant favorable so that we're encompassing all of them.

CHAIR ANDERSON: So -- so, you're really using the measure -- the laboratory measurements as indicators?

DR. TAULBEE: Correct

CHAIR ANDERSON: What -- what is a greater total exposure.

DR. TAULBEE: That's correct.

CHAIR ANDERSON: Okay.

MEMBER ZIEMER: Andy, this is Paul. If I might make an additional comment. Recognize that the main sites that have the reactors are the sites like Hanford and Idaho Falls or -- yeah, Idaho, Savannah River, all sites where we have many, many claimants. So, I think intuitively you would say OTIB-54 would be used a lot, but --

CHAIR ANDERSON: Well, that was kind of my sense, but.

MEMBER ZIEMER: Yeah. And one other comment I might make, and this -- this is -- OTIB-54 is a good example, that recognizes one procedure, and look at all the procedures we have and how many have been reviewed and recognize the quality input that goes into improving a procedure and making it the best it can be. We have -- we started out with NIOSH and it's support teams and scientists from SC&A looking at it and making -- indicating things that they think might be changed or improvement, and then having the subcommittee looking at all of that. There's a lot of input on these things that's been -- many of them a long process, but what -- what confidence we can have long term in these procedures that they have just been looked at very carefully by many, many different scientists and others.

CHAIR ANDERSON: That's --

UNIDENTIFIED SPEAKER: That's a pretty --

CHAIR ANDERSON: -- yeah, it's impressive.

MEMBER BEACH: That's a great point, Paul. Thank you for that.

CHAIR ANDERSON: Are there other questions, comments?

MS. GOGLIOTTI: Andy, this is Rose Gogliotti. I just wanted to point out, I did a real quick search on the 33rd set, and seven out of our 30 cases used this procedure.

CHAIR ANDERSON: Okay.

MS. GOGLIOTTI: For context.

CHAIR ANDERSON: That just seemed to me this is a real core activity, so I was just curious over the years, and it's been kept up to date and adjusted. So, it certainly is a critical one. I mean, a lot of time invested in doing that evaluation, so it's good to know that it's -- it's really a foundational use in the dose reconstructions, which clearly warrants the amount of effort that went into reviewing and then updating and gathering additional information.

Other comments? Okay. Thanks, Steve. I think you --

MEMBER BEACH: Can you do the --

CHAIR ANDERSON: -- well.

MEMBER BEACH: Can you do the close-out vote.

CHAIR ANDERSON: Yes. Yeah. I'm just saying I want to --

MEMBER BEACH: Oh. Sorry.

CHAIR ANDERSON: -- for his presentation, you really overwhelmed us with everything. For many of us.

MEMBER CLAWSON: You may -- you may want to nudge a few people and make sure they're still --

CHAIR ANDERSON: Yeah.

MEMBER CLAWSON: -- there.

CHAIR ANDERSON: Okay. So with that, is there anybody not satisfied with review that's been done and continued tracking that will go on with the activity? If there's no objections, we'll accept the review and the close out of all of those previous findings. I think that's very useful to clean this up and also to keep the record that goes back so far, that it's good to have those -- that documentation in the can, so people, if they have questions, can go back and see what all was done. So, with that, we'll accept it.

Say, Brad, you turned your -- you want to say something?

MEMBER CLAWSON: No, I was just --

CHAIR ANDERSON: -- the last word, Brad?

MEMBER CLAWSON: -- going to say -- I was going to say that we have an awful lot of these procedures that we've accepted years ago, but we have not officially brought them forth, and I'm just wanting to tell the work group that I appreciate that to be able to get -- get these all taken care of and get caught up with this. I know it's a big undertaking and there's an awful lot to go over, but I think it's really important to get these accepted by the Board and continue on. Kathy, as usual, you do a wonderful job. I appreciate everything you've done.

MS. BEHLING: Thank you. My pleasure.

CHAIR ANDERSON: So, I'm going to assume that the vote was unanimous since we had no objections, and we've accepted it and can -- congratulations all around -- and keep after it.

MEMBER BEACH: Well, I was hoping to have a chance to ask Kathy about the BRS, because I know you and Rose got access to it. So, we'll hold that until July, since we're late for SEC --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- review. So, thank you. We'll -- we'll talk about it at our next meeting.

SEC PETITION STATUS UPDATE

CHAIR ANDERSON: Okay. Let's move on to the last before lunch with Chuck with the update on the petition status.

MR. NELSON: Okay. Can everybody see my screen?

CHAIR ANDERSON: Yes.

MEMBER KOTELCHUCK: Yes. Yes.

MR. NELSON: All right. Thank you. My name's Charles Nelson. I'm going to be doing the SEC update today. I'm the DCAS SEC team lead. See if I can get this thing to advance. Okay. So, this update, we do it at every Advisory Board meeting with the purpose of updating petitioners and the general public and the Advisory Board as to where we are with SEC petitions. This SEC update will let you know how many petitions we have in qualification, and for those qualifying, how many are under evaluation by DCAS, and how many petitions are currently with the Advisory Board for reviews. Finally, any SEC -- any -- finally, any potential NIOSH-initiated SEC petitions which are 83.14s.

Okay. We'll go over some numbers here. To date we have received

264 SEC petitions. We currently have two of those in review to see if they qualify for further evaluation. To date there have been 153 SEC petitions qualified for further evaluation by DCAS. There are no new petitions in the evaluation process at this time. And all of the 153 SEC petitions that qualify for further evaluations, we do, in fact, have an evaluation report completed by DCAS and they had been provided -- presented to the Advisory Board. As of right now, we have 10 evaluations with the Advisory Board undergoing review and evaluation. And to date, we have 109 that did not qualify for further evaluation. That number went up by one. The one that didn't qualify most recently for further evaluation was at Thule Air Force Base, and it was determined by both DOE and DOL that it was not a covered DOE facility. Okay.

So, petitions under evaluation, we have Lawrence Livermore National Lab. You may recall there was a class added previously for this site for 1974 to 1989. So, of course, this is still SEC-221, and we're currently working on an addendum to that report. It's going to cover the time period of '90 to '95. You may recall, there was probably mention of a site visit on 1/8/24. So, I went to the site. There was interviews. They were cleared and provided to the work group on to 2/2/24. So, currently, the NIOSH team and ORAUT is working on the draft ER addendum.

Next up we have Hanford, which is SEC-57. All issues are closed except those related to ongoing internal coexposure modeling efforts, and that is underway. It's -- February 15th we submitted a data request to the site for the data completion -- completeness portion of the coexposure

study, and we have some of the documents back from them thus far that we requested, but there are still some that are outstanding.

Next up we have Savannah River, which is SEC-103. Again, we're responding to findings and observations raised by SC&A and the work group, and we're standing by for the work group meeting, and it is scheduled for July 19, 2024.

Then we have Los Alamos National Lab, that's SEC-109. Thus far, we provided four reports and two memos in response to findings and observations by SC&A in the LANL work group. So, the four reports were Reports were 101, 102, 103, 104. And then we had additionally submitted a couple of memos, one titled Weight of Evidence Memo, and that was over to the work group in August. Then more recently, RWP Analysis Memo, and that was sent to the work group in -- March 25, '24.

Next up we have Idaho National Lab, SEC-219. And we're responding to findings and observations by SC&A and the work group. Currently, NIOSH is working on Report-100, and so, incidentally this is tied to OTIB-54. So, it reviews the remainder of high-priority reactors with respect to application of OTIB-54 for dose reconstructions.

Then we have an Argonne National Lab West. That is SEC-224. Again, we're responding to findings and observations. We provided ORAUT Report-89, which is the evaluation of issues of general area sampling -- of general area air sampling from Argonne West, and that was sent over the work group in June of 2022. And we have an Area IV Santa Susana, that's SEC-235. We're working to provide clarifications on the remaining issues.

This is the one that we are waiting for records from EMCBC here in Cincinnati. You know, as we do these updates, sometimes we get more recent information because we're trying to get these presentations over and posted and to the Advisory Board members two weeks ahead of time, so I do have a little bit of an update on that one. So, initially they were -- the site, EMCBC was estimating that they was going to be done at the end of May, and then they sent us another update and they said they were awarding a contract for processing the remaining records, and they said their new estimate is closer to the end of the fiscal year. So, that's a little bit of an update to that slide.

Then we have Metals and Controls, SEC-236. And it's with the Metals and Controls work group, and this afternoon it is on the agenda. So, there'll be much further discussion on that one.

Then we have DeSoto, and that update's very similar as SSFL. Again, we're waiting on those records to be sent over to us. We've reviewed them as they come in, and we're not holding up any claims, but again, that's out to the end of the fiscal year.

We have Y-12, SEC-250, and that's the addendum to the ER. And it was in the August 2021 Advisory Board meeting, and SC&A was assigned to perform a review of the evaluation report.

Finally, we have Pinellas. NIOSH presented the ER at the December 2021 Advisory Board meeting. And there again, here is another thing that, you know, I put out that there was a Pinellas work group meeting in the works for August 2024, and there's been more internal discussions trying to

find a correct date or something that'll work for everyone. So, I don't know if Rashaun wants to pipe in here or not. I know there's a proposed date, but I don't know if it's set in stone, available for release yet, so I didn't want to put that out unless she says it's okay to do so. So, currently, we expect that to happen here fairly soon.

So, this is just some slides that gives you the sites, the SEC numbers, and, you know, what the -- awaiting action and the time period associated with it. We have Hanford SEC-57, that's '84 to 90. That's for the primes. We have Savannah River, SEC-103, '72 to 2007, again, for the prime contractors. We have Savannah River SEC-103 again, and this time period is '91 to 2007 for subcontractors. We have Los Alamos National Lab SEC-109, time period of '96 to 2005. Then we have Idaho National Lab, SEC-219 for the time period '49 to '70. Argonne National Lab West, SEC-224, for '58 to '79. And Area IV for Santa Susana, SEC-235 from '91 to '93. And last slide here, Metals and Controls, SEC-236. It's for the residual period '68 to '97. Like I said, we'll talk more about that today. We have DeSoto Avenue, SEC-246 for '65 to '95. Y-12, SEC-250, '79 to '94. And finally, Pinellas Plant, SEC-256, '57 to 1990.

With regard to the West Valley Demonstration Project, we're currently evaluating the time period of '66 to '68. We've got a lot of data in there that we're still mining through and working through. So, that's in our house right now, and we will continue to look at that for potential 83.14.

And that is the end of my presentation. Are -- if there are any questions?

MEMBER CLAWSON: Yeah. Chuck, this is Brad. You said you had two and -- that are qualifying? Can you tell us what those two are?

MR. NELSON: I sure can. I'm going to pull up my notes here because I don't want to mess it up. Okay. So, SEC-263 is Weldon Spring. It's during the remediation period. It's currently under qualification. We've been working with the petitioner quite a bit, and he keeps saying we have more information coming, and we've given him several deadlines and his deadline ends today. So, if we don't get anything, we're going to go forth with the information we have and we'll evaluate to see if it qualifies for further evaluation. The other one is a SEC petition 264. That's Missouri University Research Reactor. We call it MURR. We've sent a letter to both DOE and DOL to make a determination if this should be EEOICPA covered facility or activity. So, we've gotten some communication from them, but that's not finalized yet.

MEMBER CLAWSON: Okay. Appreciate that. Thank you.

MR. NELSON: You're welcome, Brad.

CHAIR ANDERSON: Any other questions, comments people have? Okay. Thank you very much, Chuck. Appreciate that.

MR. NELSON: Thank you, Dr. Anderson.

CHAIR ANDERSON: Yeah. Do we -- I think it's time for lunch, so we're pretty close to being on time. So, let's plan to get back at 1:45 Eastern Time for Dr. Ziemer's TBD-6000 work group update.

MEMBER MARTINEZ: Hi, Andy. This is Nicole. I just wanted to let you know that I have a class at 2:00, so I'll have to miss the first two sessions

after lunch, but then I'll let you know as soon as I'm able to join back in.

CHAIR ANDERSON: Okay. Thank you. Any other comments? Rashaun?

DR. ROBERTS: No comments.

CHAIR ANDERSON: Okay. We're -- we're on lunch break. Put it in the chat.

(Whereupon, a lunch break was taken from 12:53 p.m. EDT until 1:45 p.m.)

DR. ROBERTS: Then I'm going to do a quick roll call. Let me get to that place, starting with Anderson.

CHAIR ANDERSON: Present.

DR. ROBERTS: Beach?

MEMBER BEACH: I'm here.

DR. ROBERTS: Clawson?

MEMBER CLAWSON: Yeah.

DR. ROBERTS: I'm going to skip Frank. Kotelchuck.

MEMBER KOTELCHUCK: Here.

DR. ROBERTS: Lockey?

MEMBER LOCKEY: Here.

DR. ROBERTS: I think I'm skipping Martinez. Pompa?

MEMBER POMPA: Yes, ma'am, I'm here.

DR. ROBERTS: Roessler?

MEMBER ROESSLER: Here.

DR. ROBERTS: Valerio?

MEMBER VALERIO: I'm here.

DR. ROBERTS: And Ziemer? Paul, are you back? Okay. And I think the presentation is -- is -- so, let's give him a few minutes.

MEMBER ZIEMER: Is my screen currently shared?

DR. ROBERTS: Yes. Okay. So, you are here, great. Thanks, Paul. And it is up.

MEMBER ZIEMER: Okay. The -- let me make it full screen. Is that better?

DR. ROBERTS: Yes.

MEMBER ZIEMER: I don't know if we're ready to go ahead. Andy, are we ready to go ahead?

CHAIR ANDERSON: Yes. We're good to go.

TBD-6000 WORK GROUP UPDATE

MEMBER ZIEMER: Okay. This is a TBD-6000 work group update dealing with Joslyn Manufacturing and Supply. I might -- well, first of all, let me --let me thank Bob Barton who actually prepared me the slides for this, so thank you, Bob. Actually, originally, I thought maybe Bob would do the presentation, but he put my name on it, so I'll go ahead and do that. But let me indicate that this work group consists of -- of Dr. Anderson and Josie Beach and me. Used to include -- or some of the early material that took place included Wanda (indiscernible) and John Poston (ph) way back a number of years ago. But Andy, you have taken the place of both of those, I believe, so you're doing double duty. Also, I want to acknowledge

(indiscernible) Buell (ph) from NIOSH who has helped the group in the most recent presentation or most recent meeting.

I want to say a couple other remarks about TBD-6000. In particular for the benefit of our newer members -- actually, I guess, Nicole is not here at this session, but I think David's here and others on the Board and others who may not remember exactly what TBD-6000 is, TBD-6000 is a technical basis -- basis document that deals with atomic weapons workers that worked with uranium metals, and this is a sort of a broad overreaching TBD that's focused particularly those sites that are smaller sites. It includes General Steel Industry, Joslyn Manufacturing, Superior Steel, Baker Brothers in Toledo, Bliss & Laughlin Steel, and, I believe, Standard Saw & Steel -- or Simons Saw and Steel, rather. And so, a number of these, particularly, groups that worked in the early days of preparing uranium in different forms. TBD-6000 overall give us process descriptions about things like extrusion, rolling, a foreign -- forging, machining, slug preparation and things of that sort. It has -- outlines the -- the procedures or uranium dosimetry that would be used in these kind of facilities. It talks about the mitigation measures for the different processes and making them safe to work with and how one might go about determining both external and internal doses. And incidentally, we talked about -- earlier in the PER present presentation, PER-55 that we just talked about, was a PER for TBD-6000, Rev. 1, so this make that tie in right away.

So, let me -- let's see, I think I can advance it. Here we go. So, a little bit of an overview of the Joslyn site, it's located in Fort Wayne, Indiana,

and the uranium processing operations were done in support of the Manhattan Engineering District from March '43 through December '46, and then continued under the AEC from '47 through the date shown here, December 31st of '52. And they were instrumental in developing procedures for rolling natural uranium into metal rods. And incidentally, a good portion of those rods, for example, went to a Hanford under the Old Manhattan Engineering District. So, that goes back to the early days to building that probably the original Hanford (indiscernible) that was used to produce plutonium. So, the work involved specific activities air that is indicated, tempering, hot rolling, quenching, straightening, cooling, grinding, waste burning, abrasive cutting, all to prepare uranium rod.

There -- there is a -- an SEC at the site, SEC-200 that qualified in 2012. We had the -- full Board had discussions on it in December 2012 and January 2014. The designated class is all AWE employees at the Joslyn site from March '43 to July 31, '48. Actually, -- yeah that's -- that's -- originally, it was not that full range, but it was extended through July 31st. That class was approved and became effective in 2014 April 26.

So, the site profile history or -- I'll now mentioned here, that the various sites that I already mentioned are handled through appendices to TBD-6000, for example, General Steel Industries is designated as Appendix BD, Joslyn site is Appendix J. The appendices give more specific things for these particular sites over and beyond the broad descriptions given in TBD-6000 itself. So, Appendix J is the Joslyn -- what would constitute a site profile, and that was first reviewed by SC&A -- well, it went into effect in

October of 2014. Was reviewed by SC&A in 2015. And they had seven findings. And, basically, it's those seven findings that the work group is dealing with. And I should just tell you that we haven't really dealt with Joslyn much in the last number of years. But the -- the seven findings were made available on May 12, 2015, and those NIOSH has been dealing with. But because of the nature of this site and other sites having precedence, this was a little more of a back-burner situation. But more recently, NIOSH is able to begin responding to the findings.

We actually, at this point, only have a response on finding one. And that response is dated July of this past year. And the remaining six findings are still open for response and discussion. So, we don't have an official response on the other six findings. I'll tell you in a moment what the findings are, but we're I'm just really giving you a progress report here. We have no action for the Board to take, but just wanted to give you an update on what's going on.

So finding one, the work group had recently -- and finding one is what -- all right. Going back and forth here because I'm doing this with my wheel and not doing it (indiscernible). All right. Here -- here we go.

Finding one relates to the number of days when processing was actually done on this site. There are some historical records that have been made available. NIOSH has some. For example, they have things like specific information on contracts that specify a rod information and job length, for example. There are some documents that indicated how many rods per day were to be machined and things like that. So, there's some

information on specific work times that is available. And one of the important parts of this finding has to do with how many work days actually took place during the overall time period. They seem to have done specific work on these rods on specific days and times. So, there was a finding on the number of work days and how they were determined. Actually, NIOSH as a chart for what they believe are the actual work days and how many rods for process on specific days. The finding has to do with whether or not NIOSH actually adequately considered the University of Chicago contract. Remember, the early -- early days with the Manhattan Project, University of Chicago was involved in some of those contracts. And the uranium processing days are very important in this particular site, actually, determining the dose reconstructions and what the -- both internal and external dose estimate (indiscernible) be.

Well, let me just say that SC&A has also gone through what they believe are the work days and times, and there's a lot of the times that the two agree on, but some that -- that there's pretty major disagreements. So, some of this has to do with, for example, assumptions on what the length of a work day is and whether or not there's double shifts and things of that sort. I think this will be sorted out as we proceed. But at this point, all we have is the initial response by SC&A at our work group meeting. NIOSH has not had the chance to evaluate SC&A's findings on this, so we're waiting on -- so we're in the very early stages of even resolving finding one, let alone getting to any of the other findings.

I'll just tell you what the other findings are. Here they are. Inhaled

uranium intakes are underestimated due to underestimated uranium work days. Well, so this finding will depend very much on the resolution of finding one since it's dependent on the number of uranium work days. This third finding, photon and electron doses from contaminated floor underestimated by neglecting -- guess what, Putzier effect -- well, that -- that issue, of course, has been discussed by the work group and also, as you just learned earlier, the subcommittee for procedures review. And there is general agreement now on how this should be handled, so this finding probably will be off the -- off the slate, but there it is.

Finding four, doses from external exposure. Uranium underestimated during seven years of the ten-year covered period, but this finding goes back to findings one in three. So, once the work days are resolved, and I think we're probably good on the Putzier effect, this finding may be resolved. Finding five, exposures from contaminated surface were expressed in milliroentgens and then added doses from uranium metal, which were personal doses expressed in units of millirem. And just for the benefit of all concerned here, technically the roentgen unit is a measure of (indiscernible) I shouldn't say dose in air -- I'll say exposure in air, and it's -- it's -- and it measures really the -- the charge released in air by radio -- radiation typically or precisely gamma radiation, X-rays. Whereas, the millirem unit expresses the deposition of energy in something. In our case, tissue. So, there is an important difference. There are many cases where the two are numerically very close to each other, but not always.

Finding six. Doses to skin from nonpenetrating radiation from uranium

underestimated due to failure to incorporate (indiscernible) the Putzier effect. And so, this relates back to finding three and also to finding one. And finally, finding seven, under estimating doses to skin from external exposure to thorium rods are incorrect geometry in the NIOSH-generated Monte Carlo N-particle transport analysis. So, await response from NIOSH on that.

Then just to finish up here, the work group did meet in February where, as I've already suggested, SC&A presented their first finding and NIOSH has a technical response, but we have not, at this point -- or NIOSH has not had a chance to review this finding one. And then the task forward will be to review NIOSH's response to finding one and then to continue with the rest of the six findings as may be appropriate. SC&A has also been asked to do -- do a resolution matrix on the finding so we can track these things in accordance with current our policies and procedures. And so, that's where we are, and it's very straightforward. Not a lot to report on other than where we're at. Thank you. Let's see if we have any questions.

MEMBER CLAWSON: I got, Paul, a question. Can you help me? This is Brad. So, why are we worried about the time worked and so forth? Was there -- was there other operations that were going on or?

MEMBER ZIEMER: this appears -- and NIOSH can help me on this, but this appears to be very specific -- that work was done on very specific days with very specific numbers of rods. And then, of course, like many of these other companies, Joslyn -- Joslyn had other work going, but as far as we can tell, this work was done in very specific location at a very specific time. And

I don't know if Alek -- or if you're on board, Alek, do you want to add to that?

MR. KRANBUHL: I am, Dr. Ziemer.

MEMBER ZIEMER: Sure.

MR. KRANBUHL: Yeah, so just like Dr. Ziemer said. So, the operations at Joslyn were -- first of all, it was -- it was a steel mill where they had a lot of other stuff going on. So, the -- the uranium rod rolling and the operations that they were doing with uranium were pretty limited, both in the scope of the time -- so, they would get billets from, say like, Mallinckrodt. And they would take those billets and roll them into rods, and it would be an operation that lasted maybe two to three days. And then, you know, they put the rods on a train and send them to Hanford. So, the -- and then they may go a couple of months and not do any work at all. So, just whatever residual radioactivity was there from that work is really the only exposure going on. So, that's why we wanted to evaluate based on the amount of material that the site was processing. So, we have receipts, basically, for amounts, we have a lot of different pieces of information. We don't have a real perfect, clear picture, but what we tried to do was piece together what we have. So, whether that's tonnage, receipts of billets, numbers of billets, numbers of rods going out, reports that we have back and forth at the University of Chicago. You know, we have reports where they say we seen 12 billets, and we did this experimental rolling on this number of rods. So, we get an idea of date ranges and -- and the amount of time it should take for them to process things, and then we can piece

together how many days in the year they were actually operating. And then we use the method described in TBD-6000. Sorry.

MEMBER CLAWSON: Well, Alek, that's -- that's interesting, but you've got all that residual after that. You have no way of knowing -- do you guys have air samples or what do -- how are you going to -- how are you going to cover that portion of that? Because there may be rods that come in, you run it through this, but you still got that residual in that equipment and stuff, and you're using that equipment to do other things, too, the other metals. So. I'm just wondering how are you -- that's -- that's a big question right there.

MR. KRANBUHL: That is. And there are methods described in TBD-6000 for various operations that -- that -- I don't want to say, prescribe, but it give -- there's a procedure through TBD-6000 for determining things like the contamination levels post different operations. So, whether it was grinding operation or rolling operations, we have a lot of air sample data from other sites that was sort of compiled into TBD-6000, and that's where these --these methods are coming from.

MEMBER CLAWSON: Well, I -- I understand that, but I -- I think you're -- I think you're stepping into a pretty big mess, but, you know, we'll go forth and we'll go from there. I -- I hope you have a little better -- bit more information and stuff to be able to cover that. I understand TBD-6000. And we've got some things that are covering that, but when you really start looking into it, all of these different processes are going to create more and more -- I -- I -- I guess, we'll just see where we go from there,

but. Okay. Thanks, Alek.

MEMBER POMPA: Grady (sic), this is Pompa. I've got a question. Do -- is there any work history, data sheets, time sheets that specify the work they did?

MR. KRANBUHL: We have -- we have a couple of different documents that we're working with. One that we focused on as far as the, sort of, time schedules that they were on shift wise, we have some rosters from -- that give a breakdown of how many individuals were involved in each process. So, the -- the operation of the ovens, the -- the heating elements to actually heat the metals, who was moving the metal around in the shop. So, they have a -- and then who was, you know, involved with rolling. So, we have -- we know roughly how many people were on a shift, how long the shifts were, what the shift hours were, and that's kind of our -- what we've used for basis. And then when we have more information about specific rolling campaigns, you know, they might have required a couple of guys to work overtime or work a 10-hour shift. We try to incorporate that information where we can.

MEMBER POMPA: One more question, Grady (sic). Do we have a measure to show for internal intake due to the machining of uranium?

MR. KRANBUHL: So, yes. So, TBD-6000 has the internal dose section, and I'm kind of working off of, you know, memory here.

MEMBER ZIEMER: TBD-6000 has a section on both external and internal dosimetry.

MR. KRANBUHL: Correct. And there are -- they're prescribed default

intake rates for a given operation. So, whether that's grinding or rolling or other machining processes, it has a prescribed intake rate for a given operation.

MEMBER POMPA: One more question. Did they have bioassays at that time? We going back in history here, or do you know?

MR. KRANBUHL: There are there are no bioassays. We have some physical data, so the employees did have physicals and had some blood work done, but this is all prebioassays, preexternal dosimetry, at least for the SEC period at this facility.

MEMBER POMPA: Okay. Thank you. Great.

CHAIR ANDERSON: Okay. Other questions for Paul? Okay. Thanks, Paul. It's -- glad to see that 6000 is going to be coming alive a little bit more, and hopefully we can lay to rest some of these issues as well. So, --

MEMBER ZIEMER: You -- you should mention and -- and -- Andy, there used to be a TBD-6001 also.

CHAIR ANDERSON: I know.

MEMBER ZIEMER: -- have that, but the name has been changed.

CHAIR ANDERSON: Yeah, I know. Still living with that. And that's got a few that are still under consideration.

MEMBER ZIEMER: Similar kind of thing though.

CHAIR ANDERSON: Similar sorts of issues that are -- have to be dealt with. So, with that, let's close out that part of the agenda here, and we'll move on to Metals and Controls. And for those of you who don't know, I've been on the Metals and Control work group and also, of course, the chair of

the Board. So, to avoid -- to avoid any potential as we move forward with things -- comp -- potential perceived conflicts, I've asked Rashaun to chair the -- this particular portion of our Board meeting. And when -- when the discussions and voting is done, she'll turn it back over to me to handle the rest of the meeting. So, Rashaun, I'll pass it off to you.

METALS AND CONTROLS CORP WORK GROUP UPDATE

DR. ROBERTS: Okay. Thanks, Andy. So, what we're going to do is start with the presentations for this agenda item. Josie Beach, the M&C work group chair will present first followed by questions and comments from the Board, then Brant Ulsh will present for NIOSH/DCAS followed by questions and comments from the Board. And then, as you know, there was some time built into the agenda item to hear from the M&C petitioner if they wish to present or comment. For the questions and comment and discussion portions of this agenda item, I really want to encourage all Board members to actively engage, ask questions, and offer your perspective so that there is a robust conversation on the record of this SEC. That will be a potential vote today, and it's really important to have any questions answered and have all perspectives heard prior to a vote. So, with that said, I'm going to turn it over to you, Josie.

MEMBER BEACH: All right. That was a good introduction. Thank you, Rashaun. And Andy, good thoughts on having Rashaun take your duties for a bit.

Bob has agreed to run my slide presentation. It was just one thing I

didn't want to have to deal with. I do have a question. And Rashaun, you might need to answer this. The director -- DCAS director, he put out a memo on April 3rd, and I was looking for it on the website, but I noticed it hasn't been posted. Is that something that will be posted?

DR. ROBERTS: No. That will not be posted on the website. It's -- it's predecisional, as was your --

MEMBER BEACH: Okay. Okay. So, perhaps after, or? Okay. Thank you.

So, I do want to acknowledge SC&A for helping prep these slides and for Bob running the slide show. The other work group members you've heard are Henry Anderson, we also have David Kotelchuck, Loretta Valerio, and Nicole Martinez. I know what Nicole mentioned this morning she won't be here for this discussion, but she sent her comments on to Rashaun. Next slide.

This is a chrono -- chronology of events; however, if we were going to put everything that's occurred in the last eight years, from 2016 until present, it'll probably be three pages, so I'm not going to read that to you, but it is there to look back at if anybody feels the need to. Next slide.

So, the work groups' review. For finding one of SC&A supplemental review, which came out in 2022, the work group concurs with SC&A's conclusions from its 2024 memo that plausible circumstances exist for radiation exposures, different from and potentially in excess of those addressed by NIOSH's inside subsurface bounding models for Metals and Control maintenance workers. Next slide.

For finding two of SC&A's supplemental review, the work group concurs with the SC&A and NIOSH agreement that surrogate data concern regarding M&C dust-loading factor is a site profile issue, not bearing on dose reconstruction with sufficient accuracy. NIOSH has committed to review suggested -- recent suggestions to upgrade its dust loading models, including enhancement factors in confined spaces and will consider incorporating methods suggested by SC&A in their supplemental review. Next.

These will be easy, Bob, since I'm pretty much reading them.

The work group's review of the exposure models. Worker interviews indicated intrusive activities during the residual period. NIOSH developed six exposure models to bound potential dose. We have the inside subsurface, outside subsurface, roof and overhead, welding operations, HVAC maintenance, and the remaining exposures. SC&A recommended alterations to one model, to which NIOSH agreed with suggested modifications. SC&A found internal and external doses from each maintenance exposure pathway can be bounded. This was in 2021. Tactic agreement between NIOSH and SC&A was reached; however, the work group did not concur. A supplemental review was requested in 2022 and additional potential exposure pathways and conditions were identified that the inside subsurface model needed to address.

The additional exposure pathways and conditions include contaminated scale. M&C maintenance workers were potentially exposed to contaminated aerosols and particulates during the mechanic -- mechanized, excuse me,

cutting and clean out of drain pipes containing internal surface contamination. The presence of coagulants, the concentration of contaminated scale and sediments may have elevated due to the effects of regular releases of coagulant oil into building 10 drain pipe system during operations in the early M&C residual period. Internally contaminate -- contaminated AWE machinery and equipment. Repurposed M&C machinery and equipment likely contained radiological contamination inside and under the units, potentially exposing maintenance workers during routine maintenance and relocation of -- that occurred during the residual period.

The work group considers them plausible. These exposure pathways and conditions have not been adequately addressed by NIOSH in its bounding model.

An -- unaddressed M&C exposure pathways and the release of contaminated scale. NIOSH identified -- identifies contaminated sediment and scale as source terms, but only bound sediment in the inside subsurface model. Accumulation of contaminated scale on the inside of piping is confirmed with one survey -- interior surface contamination of up to 1 million dpm per 100 centimeters squared for a four-inch vitreous clay mainline drain being cut and removed. During M&C residual period drain pipes were frequently cut, repaired, replaced, and cleaned out using power tools such as saws, drills, grinders, and power snakes, as well as cutting torches.

As noted by DOE in its hazard assessment of Bridgeport Brass AWE, the residual uranium could eventually be released through intrusive work

duct -- work activities, such as pipe cutting and removal, and that it is plausible that under certain conditions, such as cutting through steel pipe with a cutting torch, surface activity attached to the steel could be released with the steel particles. Such pipe cutting may have released particulates and fine aerosols that could have been concentrated by the confined space atmospheres where such work was being performed.

Aerosolization of contaminated scale. SC&A's response to NIOSH's counterpoints. M&C workers used a wide array of power tools. These mechanized tools would have volatilized and suspended fine particles and fumes. The torch cutting example from Bridgeport Brass was highlighted by SC&A to substantiate -- substantiate the exposure pathway involved with cutting pipes within pipe scale. Use of Bridgeport Brass parameters to compare and model M&C exposure is problematic. M&C had different or uncertain conditions, processes, source terms, and surface contamination thickness. NIOSH's conclusion on scale only being associated with cast iron pipes is not corroborated.

The 100 -- or the 1 million dpm in-pipe surface contamination found in the vitreous clay main-line pipe. NIOSH lacks sufficient and representative survey data for in-pipe contaminant scale or interior pipe surface contamination to provide an adequate basis for an upper bound source term. This survey data is inadequate to be representative of contaminated skill -- scale in M&C drains. So, NIOSH has six samples. This -- this represents those. The first two measurements are in a caged area, one and four, typically less than 3000 dprm -- dpm. And this is -- survey data is from

near-surface recirculation piping, not from the drain pipes. This was a Weston report, 1996.

The other two measurements are located in areas four and five. Supporting assay laboratories with a concentration of 500 picocuries total uranium and is specific to only one building 10 activity. Two of the measurements in areas three and four -- total uranium concentration of 1864. This represents loose pipe sediment and debris, not just scale. Reliance on beta scintillator data is -- to represent scale activity -- the beta scintillator was used to identify not quantify scale activity. Weston, in its report, emphasized the limitations of any direct measurements given pipe service irregularities, geometry of the pipe, blockages, and liquids. NIOSH's reliance on Weston's 1996 method for hypothetical dose and exposure rate may not sufficiently name -- excuse me may not be sufficiently accurate for bounding source terms of scale. Next.

So, our conclusion for the scale -- reference survey sampling data are very few in number, only six. Most are not applicable, four of them, and overall not sufficiently representative of drain pipes at M&C to establish even a biased high value. Reliance on direct measurements, the beta scans, or hypothetical exposure models as backup methods is not sufficient or reliable. NIOSH has not demonstrated that the as high as 1 million dpm value is bounding for in-pipe surface contamination or scale value at M&C during the entirety of the residual period, prior to 1995.

So, unaddressed exposure conditions and the presence of coagulants, which is a vegetable-based mineral oil that was used in building 10 for

drawing wire reportedly had the properties of a coagulant. Upon discharge to the drainage system, M&C workers found it would frequently plugged up the drains. This was from 2017 interviews. The discharge -- discharged oil may have consolidated and concentrated drain pipe sediments and scale, including existing AWE uranium and thorium.

During active building 10 operations through 1981, would regular releases of the coagulants have led to more frequent and substantial blockages involving elevated uranium and thorium as a function of the consolidation properties of the coagulant oil on the sediment and scale?

So, NIOSH's response to the presence of coagulants and our conclusion -- NIOSH determined it can bound exposures associated with unclogging pipes while accounting for the effects of nonradioactive coagulants on the drain line source term. The work group disagrees. NIOSH has not provided any supporting information to characterize potential effects of coagulant oil on sediment and scale source term in the early residual time frame of building 10 drain pipe discharge.

What is clear is during M&Cs residual period, drain pipes contained both in-solution suspended sediments and fixed sediment contamination of varying degrees for which regular introduction of oil-based coagulant was used -- was known by M&C workers to cause the blockage of drain pipes, requiring clean out. The work group concludes that the presence of coagulant oils within M&C drainage system may have led to increased concentrations of uranium and thorium contaminated sediments and scale for which a maximum dose estimation may not be feasible.

So, unaddressed M&C exposure pathways -- internally contaminated AWE machinery and equipment involves repurposing M&C equipment, removing and replacing mill units. NIOSH found it not addressed by the ER resuspension models based on OTIB-70 that came out in 2017. Issued -- the issue is the presence of residual contamination underneath and in the interior of AWE pre 1968 M&C machinery and equipment repurposed for later use during the residual period. Significance of this particular exposure source was highlighted during a Linde SEC deliberation in 2011. Some of you will remember that. Routine maintenance on machinery and equipment cited by former M&C workers also regularly -- regular relocation of equipment and building 10. NIOSH's position is that decontamination and decommissioning, D&D of site, in 1955 through 1968 would have removed any remaining contamination. Again, the work group disagrees that D&D would have removed -- moved contamination within and under machinery and equipment. Repurposing would have led to potential exposure of M&C maintenance workers employing intrusive measures to clean and move these items during the residual period. This represents an unaddressed plausible exposure pathway.

And the work group summary of NIOSH's basis for sufficient accuracy of dose reconstructions for M&C -- NIOSH in general finds intrusive activity comparable to other AWEs and back applies available survey data to cover residual period and observes that the Board has accepted this approach for other AWEs in the past.

Extreme conservatism applies to address unknowns and uncertainties.

This is interpreted to mean appropriate for bounding scenario, not as cited by SC&A from earlier NIOSH definition and scope of the application. And specifically, survey measurements for scale not intended to be representative, but meant to be biased high to identify maximum concentrations not a range. Oil-based coagulant cited as green lube by NIOSH finds no evidence of coagulant effects described by SC&A.

Next.

Here's what the work groups concerns are with NIOSH's basis. Generally, NIOSH itself acknowledged the pronounced level of intrusive activities by M&C maintenance workers based on 2017 worker interviews that led to additional -- addition of six bounding models, which I mentioned earlier, to address identified exposure pathways. M&C maintenance activities were unique in terms of their level of intrusiveness, excavations, pipe cleaning, pipe cutting, as example, work environments, confined spaces, and uncertain or unknown source terms, contaminated -- contaminated pipe sediments and scale, presence of coagulants, and repurposed equipment. The work group finds that unknowns and uncertainties exist regarding the pre 1995 residual period source terms and exposure circumstances for which sufficient and reliable information is lacking to support NIOSH's inside subsurface bounding approach. Extreme conservatism should not be compensated for a lack of information.

And then our kerns -- our concerns, specifically, with NIOSH as basis: NIOSH has not demonstrated that the as high as 1 million dpm value is bounding for contaminated scale at M&C during the residual period. Survey

data are few in number and most are not applicable, overall not sufficiently representative of drain pipes at M&C to establish even a biased high value. NIOSH acknowledges worker description -- described coagulant discharges to building 10 drain line, but disputes that these would have had any impact on consolidation or concentration of sediments and scaled. NIOSH has not addressed potential impact to uranium and thorium source terms of potential physical and chemical interactions of potential -- or potential coagulants known to plug up the drains. NIOSH has not addressed the identified exposure pathway for internally contaminated repurposed pre AWE-era machinery and equipment and whether potential worker exposure -- exposures can be bounded.

Our threshold issues for M&C residual period are, one, what potential exposure pathway may have existed and whether they represent plausible circumstances under 42 CFR, Part 83; and two, whether available information for exposures is sufficient and reliable to support maximum dose estimate.

So M&C's potential exposure pathways -- the work group finds residual contamination without intrusive activities is plausible. Adequate information, dose reconstruction, via OTIB-70 and Battelle-TPD-6000 -- intrusive maintenance activities, the outside subsurface, roof and overhead welding operations, HVAC maintenance, and remaining exposures are plausible. Adequate information, maximum dose estimate feasible with bounding scenarios. Intrusive worker maintenance activities inside subsurface contaminated sediment and scale and clean out of drain pipes compounded

by potential coagulant effects and internally contaminated machinery plausible, but inadequate information, so maximum dose estimates may not be feasible.

So, under plausible circumstances, radiation doses can be asked and mated with sufficient accuracy if NIOSH has established that it has access to sufficient information to establish the maximum dose -- radiation dose for every type of cancer for which radiation doses are recognized -- reconstructed that could have incurred implausible circumstances by any members of the class. 42 CFR 18 -- 83.13.

The work group concludes that NIOSH does not have sufficient information to establish the maximum dose for the following plausible exposure pathways that -- at Metals and Control: cutting and cleaning of drain pipes containing contaminated scale; in-pipe surface contamination, too few applicable survey measurements for bounding purposes, maintenance and movement of internally contaminated pre AWE-era repurpose machinery and equipment identified, but not addressed; potential for increased source term values for sediment and scale in the early residual period due to the effects of reported regular discharge of coagulant oils to drain pipes.

So, the -- the similarities between the conditions and processes, NIOSH must also determine that it has information regarding monitoring, source, source term or process from the site where the employees worked to serve as a basis for dose reconstruction. In order for radiological data from one time period to be considered informative about exposures during

another time period, there should be some similarity of conditions and processes between the two periods. The work group concludes that the -- the proposed inside subsurface bounding scenario based on the 1995 pre D&D survey measurements may or may not account for all exposure scenarios and conditions during the entirety of the 27-year prior residual period. This uncertainty, coupled with a lack of sufficient and reliable information regarding these early exposure pathways, makes the back application of 1995 information insufficiently accurate for this purpose. The work group recommends that SEC status be afforded to all atomic weapons employees who worked at Metals and Control Corp in Attleboro, Massachusetts during the period from January 1, 1968 through September 21, 1995. The proposed end date marked the completion of pre D&D radiological survey of the M&C drain pipe system.

And on to questions and any work group members that want to make comments. Thank you.

DR. ROBERTS: Josie? Josie, before we get to that, if you wouldn't mind going back the slide. And since the SEC definition that was discussed within the work group was a little bit different, if you could, just explain what --

MEMBER BEACH: Yes, I could. Thank you. I meant to do that. So, the -- if you remember, back in August -- in my August presentation, I had actually put a slide in it is the -- it was the petitioner's class definition that was evaluated by NIOSH. I don't know that I need to read it, but Rashaun, if you want me to, I can. It covered all construction workers. It -- and it

specifically named out every person every building, and labor took a look at that and said they would not be able to administer it with -- with that -- fine-tuned in that manner. So, this class definition that is being recommended is one that labor can support and administer.

Is that enough, Rashaun, or do you need something else?

DR. ROBERTS: No, I think that's --

MEMBER BEACH: Okay. Thank you. So, I guess, we're open for questions If other -- other Advisory Board members or work group wants to make comments.

MEMBER ZIEMER: I have some questions, but I'm wondering if I should wait until after Brant Ulsh makes his presentation. Maybe I'll pose the question and then see if that should wait. This 1 million dpm per 100 square centimeters seemed to pop up several times. Who's -- was that part of a survey done? Where -- where did that number come from?

MEMBER BEACH: That -- that number came from the Weston surveys in 1995, I believe. It was the -- the only scale sample that we have for the pipes.

MEMBER ZIEMER: Do we know whether they -- how representative is -- is this just a point? Did they scan a lot of pipes, or do we know that?

MEMBER BEACH: They actually did a lot of debris and soil sample -- well, not a lot. All the samples that they have are those six I mentioned with that one being the only scale sample, I --

MEMBER ZIEMER: Yeah.

MEMBER BEACH: -- believe. The rest of them are soil and debris.

MEMBER ZIEMER: Okay. Well, a million dpm sounds like a big number, but it's -- it's more like half a microcurie or something like that. It's a very small amount of radioactivity. If you're cutting a pipe, is it fair to say that around the cut, you have around a half a microcurie of activity? Does anybody know the answer to that? Okay. Well, I -- I'll just pose that for a moment. And I want to ask about the coagulants. Were coagulants at -- specifically used for clearing the drain pipes?

MEMBER BEACH: No. They were -- they were used in the wire -- wire polling operation, but they found that it clogged up the pipes, which is what required the maintenance personnel to go in, and they had to snake -- snake. If they couldn't get the drain cleared by snaking, then they ended up cutting the lines and replacing pipe. So, the coagulant's important because it was a -- it clogged up the drains frequently.

MEMBER ZIEMER: If that was the case, why was it used? Does anybody know? Why would you use a coagulant that clogged the drain? Was there some reason they were pouring it into the drains?

MEMBER BEACH: They were using it to pull wire, so it might have been something that they did and didn't realize it was going to cause such a problem, but that goes back a ways.

MEMBER ZIEMER: Yeah, because usually a coagulant is not used for that purpose. But I -- I --

MEMBER BEACH: If S -- yeah. If SC&A knows this answer, please feel free to answer Paul -- or NIOSH.

MR. FITZGERALD: Yeah, I -- I -- this is Joe Fitzgerald. Good

afternoon. It was used as --

MEMBER ZIEMER: Hi, Joe.

MR. FITZGERALD: Hi, Paul. It was used as a lubricant because, if you can imagine a wiring operation on a spool, you know, where you're actually using wire that way, it was oil-based lubricant, as I recall.

MEMBER ZIEMER: Not specifically a coagulant then.

MR. FITZGERALD: Well, no, the worker -- the worker reported in at a -- at a -- in an interview as a coagulant in terms of what he characterized as the substance. He also indicated that when they released it, it tended to clog up the pipes.

MEMBER ZIEMER: Oh, I got you.

MR. FITZGERALD: That was -- that was pretty much the -- the indication. And we -- we identified it as -- as an uncertainty because clearly it was a condition that existed when they were using the wiring operation and releasing it into the drain pipes, but beyond that, you know, there isn't any surviving evidence or information. It's an uncertainty, and it's -- it's one of these conditions that we wanted to highlight as something that would have existed in the early residual period that clearly did not exist in 1995.

MEMBER ZIEMER: Gotcha. Then the trenches are referred to as confined spaces. To what extent -- I -- I'm picturing a trench as more of an open thing. What -- what made it a confined space.

MR. FITZGERALD: Josie, you want me to handle it?

MEMBER KOTELCHUCK: Well, Brant Ulsh is going to talk to that, and I -- I was planning to talk to it.

MEMBER ZIEMER: Okay. I -- I can wait on that. I just --

MEMBER KOTELCHUCK: Yeah. But I do -- for -- I just feel like for a general background to -- I want people to remember when we started it, and I've said this at several -- at more than several meetings, that we have two basic background facts that we have to deal with. One is -- and people should realize this is how we started. There were no individual exposure measurements -- were -- no individual exposure measurements were made during the residual period from '68 to '97 for any of the claimants; and two, the records of the individual work activities of the claimants during the residual period were not found. So, we had this data from 1995 that -- that -- where -- that NIOSH certainly tried to use as effectively as they could, but it leaves so much -- there's so much that may have happened and, I believe, credibly might have happened. So, that I absolutely concur with the -- you know, and voted in favor of the -- of the SEC that our working group is proposed, so.

MEMBER BEACH: So, thanks, Dave. And, I believe -- so, NIOSH has a presentation and, I believe, the petitioner, Mike, is also going to make comments. So, shall we just hold comments until the end? What do -- what do people think?

MEMBER LOCKEY: Josie, I'd like --

MEMBER BEACH: I want to make sure --

MEMBER LOCKEY: Can I ask you a couple questions? While I enjoyed your presentation and thought it was very thorough. When -- when you were -- this is Jim Lockey. When -- I remember you were talking about

before they were potentially cutting pipes with torches, etc., were the pipes at M&C, were they clay pipes and cast iron pipes or were there also steel pipes?

MEMBER BEACH: I believe they had a variety. The one we found the million dpm in was a vitreous clay pipe. There were -- what was the most common one? Can someone help me out with that?

MEMBER LOCKEY: Well, the reason it becomes important to me because cutting a steel pipe versus a cast iron pipe versus how you would work your way through a clay piper are -- are -- are different --

MEMBER BEACH: Yeah.

MEMBER LOCKEY: -- different for generating different aerosols. So, --

MEMBER BEACH: Yeah.

MEMBER LOCKEY: -- that's why I was addressing that question.

MEMBER BEACH: Yeah, it's a -- it's a great question, and I'm pretty darn sure we had clay pipes, we had steel pipes, but I believe that is correct.

MR. FITZGERALD: Yeah, if I may -- if I may, Josie. It was --

MEMBER BEACH: Yes, please, go ahead.

MR. FITZGERALD: -- definitely a range of pipes for -- you know, you certainly had the vitreous clay and you had the cast iron pipes, and the equipment that would have been used in cutting certainly would have been different. Obviously, for cast iron You would want to use something -- if not a torch, something that would cut a cast iron versus a vitreous clay, which clipping -- a clipper or something like a -- a saw would be adequate to do that. And I think, certainly, the petitioner can shed some light on that to

more extent, but, yes. So, there was a range of cutting equipment, a range of equipment that would be used to clean out the pipe, whether it be routers or snakes

MEMBER LOCKEY: Okay. Then I understand.

MR. FITZGERALD: And so, you'd have a -- you certainly would have a range of intrusive activities depending on the makeup of the pipe, so that certainly is an important variable.

MEMBER LOCKEY: And what was --

MEMBER BEACH: And so, I --

MEMBER LOCKEY: -- in regard to --

MEMBER BEACH: Let me -- can I answer you for a sec? Sorry, I found my notes. Mostly cast iron was used and vitreous clay, but they use snap cutters for the vitreous -- vitreous clay, and they use grinders on the cast iron. The torch cutting was mostly in the trenches on the cast iron. And the stainless steel pipes, that provided service to equipment and machinery.

MEMBER LOCKEY: So, these stainless steel pipes were different than the drainage system pipes, I take it, right? What you're saying?

MEMBER BEACH: I believe so.

MEMBER LOCKEY: Okay. So, that's different. So, I can under --

MEMBER BEACH: It -- it provided -- yeah.

MEMBER LOCKEY: I can understand the cast iron pipes and vitreous pipes in relationship to drainage activities.

(Whereupon, continuing audio interference experienced.)

MEMBER LOCKEY: The other question I had is -- is I -- I tried to understand this, in my work on, say, air pollution. If you have a -- if you have a water particle, it acts as a concentrator. And so, if I have a very low dose of trichloroethylene in the air, and there's a mist, the -- the water particle will concentrate the trichloroethylene. Is -- is this -- is this oil that was used, is it a -- is it -- act -- is it a concentrator, or when you say something that accumulates? It accumulates because of its blockage nature? I'm not aware --

MEMBER BEACH: -- same thing.

MEMBER LOCKEY: Well, you can diffuse material in oil, but I'm not aware of vegetable oil actually, actively from a chemical perspective concentrating (indiscernible) materials. So, they're -- they're more concentrated, like they -- like a water particle would do with -- with chemical agents.

MEMBER BEACH: Yeah. It would trap it in the pipe along with the other --

MEMBER LOCKEY: So, it's a trapping --

MEMBER BEACH: -- debris that's in the pipe.

MEMBER LOCKEY: It's a blocking agent.

MEMBER LOCKEY: It's a block. That's what I thought.

MEMBER BEACH: Yeah.

MEMBER KOTELCHUCK: Yeah.

MEMBER LOCKEY: It's a blocking agent. It's not really a concentrator.

MEMBER KOTELCHUCK: Right.

CHAIR ANDERSON: Gradually -- gradually, it would reduce the flow and on the -- before the blockage, you know, scale or whatever particulate could either settle out or (indiscernible) actually make it then, close it off completely.

MEMBER LOCKEY: Right. It would block the drain --

CHAIR ANDERSON: Yeah.

MEMBER LOCKEY: -- meaning it can't be used anymore. But that's different, from my perspective, than something that actually concentrates, a potentially toxic agent. It -- it blocks the agent. It can't drain. It backs up. It's there in the same concentration it was put in, but it's not being concentrated.

MEMBER BEACH: Oh, we don't -- and we don't know that for sure, Jim. It's just part of the issue.

MEMBER LOCKEY: Well, I don't think --

MEMBER BEACH: It was the potential --

MEMBER LOCKEY: I don't think oil has the capacity of doing that. There's not -- I'm not aware of any physical or chemical principle that says vegetable oil acts as a concentrator.

MEMBER CLAWSON: It displaces the water.

MEMBER LOCKEY: No, it -- yeah, it just displaces the water --

(Whereupon, multiple members speak simultaneously.)

MEMBER LOCKEY: -- doesn't concentrate -- it doesn't concentrate something. It doesn't act -- like I have instruments that look at ultra fine particles, and I can concentrate trichloroethylene to 100 times what's being

released in the atmosphere. If I have an oil dispersion, I can't do that. It doesn't do that. Oil doesn't act as that -- in that physical manner. it just doesn't. Okay.

MEMBER BEACH: Okay. It doesn't change the fact that the oil clogged up the pipes, and we don't know what was in the pipes when the maintenance workers were either cleaning them out or cutting them out, and that's what the point is, --

MEMBER LOCKEY: Yeah, that's correct.

MEMBER BEACH: so, thank you. Okay. Any other questions or comments yes?

MEMBER POMPA: Yeah, this is Pompa, Josie.

MEMBER BEACH: Yeah, hi, David.

MEMBER POMPA: Talking about confined space, there's several concerns, of course, but didn't we -- didn't I hear somewhere in a previous meeting that there was uranium found in the -- in the pipes?

MEMBER BEACH: Yes, there was uranium thorium, which was part of the operation, early -- early operation, yes.

MEMBER POMPA: Okay. And --

MEMBER KOTELCHUCK: And -- and -- David, there was the fuel rod that was found in --

MEMBER BEACH: A couple of --

MEMBER KOTELCHUCK: -- 1995.

MEMBER BEACH: Right.

MEMBER KOTELCHUCK: An unclad fuel rod and -- which was -- there

were reports, again, as it went through that was very poorly handled, which is to say it was handled by their bare hands, it was brought into the lab, put on the table, a fellow walked out, put it in his pocket. So, there was -- there was that was that fuel rod. To my mind, there was a question in the 27 years prequel -- before that -- we don't know how the rock -- excuse me. We don't know how the rod got there, except it -- it was there in 1995. Question --

MEMBER BEACH: Yeah. It was -- it went through the drain lines.

MEMBER KOTELCHUCK: Yeah, but would it -- you know, would there have been more rods? Could there have been more than one rod in the past?

MEMBER BEACH: I think there was actually two found, but, yes.

MEMBER POMPA: So, we're talking --

MEMBER BEACH: Yeah.

MEMBER POMPA: -- the worker was probably in close proximity while they were working or cutting, drilling, sawing, etc., and --

MEMBER BEACH: Right.

MEMBER POMPA: -- we don't know all -- there's still uncertain conditions that we're not aware of, unless we hear from the workers here in a little bit. I have one more question. There was a comment made that there was a removal of uranium exposure after the D&D in 1968, but do we have data to support that there was no uranium exposure -- I mean, uranium residue in the equipment and the pipes and, etc.?

MEMBER BEACH: No, we do not. Other than the -- if it was removed

in 1968, they found a whole lot of it in 1995.

MEMBER POMPA: Well, okay.

MEMBER BEACH: So, we contend that it was not D&D'd.

MEMBER POMPA: Okay. I'll wait. You know, I'd like to wait because there's going to be some comments that are going to be made for the employees, the workers.

MEMBER BEACH: Yes.

MEMBER POMPA: That's gonna be --

MEMBER BEACH: -- there will be, yes.

MEMBER POMPA: Okay. I'll wait with some more questions.

MEMBER BEACH: Okay. Sounds, great.

MEMBER CLAWSON: Josie, maybe -- maybe Brant ought to be able to give his presentation. That way it'll --

MEMBER KOTELCHUCK: Yes.

MEMBER CLAWSON: -- it may answer some of these questions and go from there.

MEMBER BEACH: That's great, because I want to make sure everybody gets a chance to -- to ask questions and comment. So, Brant, if you're ready?

DR. ROBERTS: No, actually, I'd like to add -- to echo that, --

MEMBER BEACH: Oh. Okay.

DR. ROBERTS: -- Josie. I just want to make sure folks on the Board who haven't had an opportunity to ask a question or make a comment, just make sure, you know, that they prefer not to comment at this time. So,

any --

MEMBER BEACH: Okay. Thank you.

DR. ROBERTS: Would anybody else like to comment?

MEMBER CLAWSON: I actually went -- but I'd like -- this is Brad. I want to defer until after I hear what NIOSH has to say. That's why I was -- that's why I was just mentioning that, Rashaun.

DR. ROBERTS: Okay. Great. I did want to, perhaps, at this juncture since the work group recommendation was presented, to go ahead and read Nicole Martinez's statement at this time before we move on to Brant's presentation. So, her statement is, and I'm going to read it verbatim: My apologies for being unable to attend the meeting during this discussion. I would also like to express appreciation to DCAS, SC&A, and the work group for the thoughtful and dedicated work they've been doing related to Metals and Controls. In my opinion, some of the observations or concerns raised by the work group seem inconsistent with each other when considering an overall position on whether the dose reconstruction is sufficiently accurate. For example, we have discussed potential for pipe scaling or clogging that could have led to exposure perhaps not adequately accounted for, but we also discuss the phrase and use of extreme conservatism and that perhaps this conservatism exceeded what is plausible for a bounding dose. Of course, we discussed other items as well, as work group Chair Beach has nicely summarized. But I have difficulty reconciling these two items in a consolidated critique of the dose reconstruction.

From a technical standpoint, I consider the NIOSH dose reconstruction

to be sufficient; however, I have hesitated to offer a line with a firm position because I'd like to better understand how the Board has determined plausible in the past, which I understand may be different from what I consider plausible. I will recognize the importance of consistency and fairness, and I want to make sure we are considering or weighting the same factors and in the same way as possible. Thank you.

MEMBER BEACH: Thanks, Rashaun.

DR. ROBERTS: Thank you. Okay. So, if there are no further questions or comments from the Board, we can go on to Brant's presentation, if you're ready.

MEMBER BEACH: Yes.

DR. ULSH: Okay. Hi, Rashaun. This is Brant. And I say that I'm ready if I can get the display correct. So, can you hear me, first of all?

DR. ROBERTS: Yes.

DR. ULSH: Okay. So, I'm sharing my screen.

DR. ROBERTS: You're on presenter's view.

DR. ULSH: Yeah, let me -- there was a drop down where I can switch. Where did it go?

DR. TAULBEE: It's display -- display settings.

DR. ULSH: I don't -- I no longer have a display settings on my screen. I was afraid something like this would happen.

MEMBER CLAWSON: We do.

MEMBER ZIEMER: We can see it -- we can see it on your screen. It's up -- up at the top, the middle one. Display --

MEMBER CLAWSON: Brant, I'm trying -- I'm trying to push it, and it's not doing anything.

MR. CALHOUN: I'm trying to, too, Brant, I can't do it.

DR. ULSH: Oh, man. It was just there. And now it's not. Let me see.

MEMBER ZIEMER: Right above your cursor, right there. Go up --

MR. CALHOUN: -- minimize --

MEMBER ZIEMER: -- with your cursor.

DR. TAULBEE: Try hitting escape and try again.

DR. ULSH: Okay. Hold on a minute.

MEMBER CLAWSON: How about -- how about now?

DR. ULSH: You are screen sharing. I have --

DR. TAULBEE: -- presenter mode again.

DR. ULSH: Okay.

DR. TAULBEE: It should be at the top.

MEMBER BEACH: And now you know why I asked Bob to do mine.

DR. ULSH: You know, I'm really thinking that you are the smart one between the two of us.

DR. ULSH: Okay. Well, --

MEMBER ZIEMER: Can you see the show taskbar on the upper left of yours? I -- I think it's your screen I'm looking at.

DR. ULSH: Yeah, it's just --

MEMBER ZIEMER: Right next to it is display settings. Is your -- your cursor able to get to it?

DR. ULSH: No.

MEMBER ZIEMER: Huh.

DR. ULSH: Well, I know it's distracting to have all these icons and everything. Should I go ahead, Rashaun, or what do you think?

DR. ROBERTS: Sure, yes.

DR. ULSH: Okay. I apologize everyone. This was working, of course. This is like my -- my worst nightmare. It was working right up until the time that -- my turn to speak.

Okay. Well, anyway, my name is Brant Ulsh. I am a research health scientist with NIOSH, and I'm going to be presenting NIOSH his views today on the SEC class that the working group is proposing for Metals and Controls. None of what I'm going to saying today should come as a great surprise to you because I sent over a copy of my slide -- my slides two weeks ago. And at that time we also sent over a summary that gives you some indication of what I'm going to be talking about in my verbal remarks as well.

Okay. So, you all see slide two, right?

MEMBER ZIEMER: Yes.

DR. ROBERTS: Yes.

DR. ULSH: Okay. I'll start with the big picture. I will tell you what the evaluation report findings were, and I'll just give you a very abbreviated time line, and then I'm going to dive into the specific issues. And I have to let you know here that I built my slides from Josie's December 7th presentation to the Board because that was the latest that I had. When I got Josie's slides last week, I was pleased to see that there were no major --

well, not many -- not many major differences, and I will do my best to update my presentation in light of Josie's presentation when I get to those spots. So, the specific issues that were identified in the December 7th presentation include, briefly, intrusive activities, no monitoring data applicability, some source term concerns, confined spaces, contaminated equipment, coagulants, pipe contamination, and rounding off with extreme conservatism.

So, first the big picture. Here, I know that you guys were talking about the petition class that we evaluated in the evaluation report. Here it is. I think Josie characterized it as there's a lot of words there, and you can see that that is, in fact, the case. And this is different from the class definition being proposed today. I think, yeah, Josie showed that. The end date is a little bit different. So, this is just what we evaluated in the evaluation report. And here was our conclusion that we could, in fact, bound doses for all members of the proposed class.

Now, one little housekeeping note, on my slides when I put things in bold or in blue font, that is me trying to add emphasis and draw your attention to that specific point, so just so you know.

All right. So, a brief time line, and Josie covered most of this in even more detail. So, there were atomic weapons employer operations at Metals and Controls from 1952 to '67, and that time period is currently designated as an SEC. From about 19 -- well, a major D&D operation occurred and building 10 in 1958, and that went all the way through up to '67. And then the residual contamination period started at the beginning of '68 and ran

through '97. And then spanning those two time periods, the AWE time period and the residual contamination period, was some work that Metals and Controls did, some commercial work, and also work for the HFIR, that's the high flux isotope reactor. And also Navy fuels. And none of those activities are covered activities, so exposures incurred during those activities are not covered in our program. In terms of this SEC petition, it qualified for evaluation in 2016, and our evaluation report was issued early in 2017. And we also conducted, with the assistance of the petitioner, NIOSH and ORAU team conducted 11 worker interviews, and SC&A participated in that and, I believe, the petitioner helped us identify some workers that we should talk to.

So, then work progressed for the next three years, and we got to 2020, March of 2020, and this was a bit of a surprise to me when I discovered this SC&A report where SC&A, basically, agreed that the data that we used extensively in -- from '95 in our bounding dose scenario could, in fact, be used to bound doses as all across the residual period. And they also agreed with our methods and agreed or recommended that most of these issues be closed. Unfortunately, -- well, that didn't hold. As Josie mentioned, the working group did not concur with that consensus, and they requested further SC&A review.

And today SC&A and the working group have come to the opposite conclusion, that in their opinion we cannot, in fact, bound doses with sufficient accuracy. Now, I only present this just as -- you know, I think it's relevant history. I'm not trying to say anything beyond that. I think it's

relevant that NIOSH's evaluation is consistent with the judgments from Texas Instruments, from the NRC in the '80s, the NRC again in the '90s, and also a pretty well-respected engineering firm, Weston, who did the D&D were all consistent in judging that the worker exposure potential during that residual period is low. I think we -- you know, we were also in concurrence with SC&A until 2020, but now the working group in SC&A no longer concur with us. And that's all I'm saying. That's it.

So specific issues. Let's dive right in. I took this directly from Josie's slide 19 on December 7th. I don't think I changed any of the wording, so it's -- even though there's no quote marks, I think it's pretty much a direct copy. She identified some concerns. Intrusive work activities with no available monitoring. NIOSH applying '95-era data that was characterized as D&D data all the way back through the residual period. Some concerns about uncertainty on the source terms. Here -- there's a number of issues raised in this bullet, confined spaces, pipe scale releases, coagulants, workplace not controlled as a radiation environment, and then finally extreme conservatism. So, this should sound pretty familiar. We heard about all of these in Josie's presentation a few moments ago.

Okay. So first, intrusive activities, no monitoring. Oops. Hold on a minute. I think I got ahead of myself. Yes. Okay.

Slide 11 of Josie's December 7th presentation discussed the requirements of 42 CFR 83.13 with relation to what is required for specific -- or sufficient accuracy. Well, section one of that part of law specifies that we can use source terms to estimate doses exactly as we have done, and that's

just like we have done at dozens of other sites. Section four of that part of the law specifies that personal dosimetry data and area monitoring are not required for us to estimate the maximum doses. And, in fact, we do not have personal dosimetry data or area monitoring, and that's exactly why we are using a source term, and that is explicitly allowed for this section of the law.

Now, there was no monitoring, but I want to point out that all of our judgments with the exception of the work group and SC&A, concluded that the potential doses -- the potential exposures were below what would require control as a radiation environment. So, that's why we don't have all of those radiation -- you know, radiation area controls, you know, administrative and engineered controls and monitoring.

All right. Let me move. So, let's first talk about this back application of data and whether or not the 1995 data is applicable. This is the first of what I would classify as a symantec issue. The working group on numerous occasions has characterize this '95 data as coming from a D&D era and presented that as a distinct -- as distinct from the residual period, and then argued that based on it coming from two different time periods, it presents concerns about applicability. And we have repeatedly objected to this. This data came from '95, which is actually, the end of the residual period. It is not a separate time period. And so, what really -- you know, it's kind of symantecs issue. They were doing the in some D&D -- you know, some D&D efforts throughout.

The important part is for what purpose was this characterization data

collected and the -- Weston, who collected this data, actually had something explicit to say about that. They explicitly stated that their characterization effort preceded D&D and that the purpose of their sampling was, and this as a quote, to assess the potential for inadvertent exposure to nonradiological workers performing routine drainage system maintenance. And that's what the Metals and Controls workers were doing -- we're doing throughout the residual period. That is not NIOSH's opinion. That is straight from the Weston report. And so, we think that that speaks favorably towards the applicability of this data to estimate the doses from nonradiological workers performing maintenance on the drain lines.

Also, in 2017, those 2017 interviews, Dr. Mauro asked one of the workers if there was any reason to believe that the soil concentrations observed by Weston in '95 would have been substantially different from those that the M&C workers were exposed to, and the worker answered, no, he said I don't think so. The data in that characterization report gives you an idea about some of the hot spots that the workers are being exposed to. So, if any of you are interested I -- you know, I don't have time right now, but if you're interested, I can give you the SRDB reference, and you can go read for yourself exactly what was said.

Data applicability, okay. So, there are -- at least by my very quick rough count, at least 10 other sites that previously the Board has considered during the residual periods where a -- an SEC class was not added. I won't read through the list. I want to focus on two of them that I think are particularly relevant to the Metals and Controls site because they have some

substantial similarities. They're not identical. Each site is unique, but they have some substantial similarities. The first is Chapman valve, and that ran from '49 to '93. And SC&A, at least, previously agreed that this was a relevant example to compare to. At Chapman, there was no usable air sampling data that were available during the residual period. Intakes were derived using survey results taken in '92. That is the end of the residual period, and it was applied back across the entire 44-year period. And I just noticed that I did not start my video so you can see my smiling face, so hopefully now I've fixed that.

With regard to Linde, it's a little more complicated because there were actually two periods at Linde. They broke the residual period up into two periods. The working group is focused on the early Linde residual period when there were extensive renovations going on. The thing that is different about -- and a class was added for that early Linde residual period; however, it was very different from the situation at Metals and Controls. The bounding dose that was calculated for that early Linde period was 5479 millirem, and that is 77 times higher than what we have proposed for the bounding dose here at Metals and Controls. There was only air data from one building from one year, and it was going to be applied to five other buildings, and activities included scabbling and jackhammering the floor of the primary process building. And importantly, that five-and-a-half rem dose was going to be applied to nonrad workers, and so that's a very different situation from Metals and Controls. And the Board discussed that. They expressed some concerns about plausibility, applying that high of a

bounding dose to nonrad workers, and they expressed concerns about whether or not that was sufficiently accurate. I would refer you back to that 2011 transcript, and you can read all about it.

The second Linde residual -- the second half of the Linde residual period from 1970 to 2006, I think is more comparable to Metals and Controls. In that situation, contamination data from 2001 was back applied all the way across the 31 preceding years back to the 1970. And the intrusive work that was conducted there involve subsurface utility tunnel maintenance. So, you know, kind of similar to what we have at Metals and Controls. At Metals and Controls we are taking contamination and soil data from the end of the residual period, '95, and back applying back to 1968, 27 years, so less than Linde and Chapman. And, you know, as Josie described, the work involved drain line snaking, and if that wasn't successful, they actually cut the pipes out and removed the clogs. So, we maintain that what we have done at -- for Metals and Controls is entirely consistent with these other precedents.

Okay. Source term. First of all, I want to make -- you know, for those of you who are not part of the working group and haven't been eyeballs deep in the site for the past seven years, you may not realize that there is a vast set of data across the history of this site, and I just don't want us to lose track of that because in response to SC&A and working group concerns, NIOSH has focused in on what we judge, what we all judge, SC&A, the working group, and us, we all judge to be the highest exposure potential scenario. And that involved successive rounds of narrowing the focus. So,

first of all, we focused on building 10, which is the most contaminated building on site. Then we focused on the most contaminated area of building 10, that is the unclad fuel manufacturing area. And then within that area, we focused on the priority one drain lines, priority one meaning the highest potential exposure because they were the most contaminated. And then we decided to focus on the soils around those drain pipes because we judged that that would have -- at that time we all just that that would have the highest exposure potential.

Now we're to the mistake that I made about hot spots. There were 100 percent walkover surveys, and they did do surveying to identify hot spots, but I improperly conflated the two. The walkover surveys are not the ones that were used to identify hot spots. So, they did the walkover surveys. They also did the same kind of random sampling that you would see in most D&D operations, but then on top of that, they also did a targeted campaign to identify hot spots. And they did that by snaking a peanut probe through the drain lines, and wherever they encountered an elevated reading, a hot spot, they collected a sample. So, we have included that data, and then we have taken from, you know, the successive rounds of filtering and narrowing in, we have taken the 95th -- 95th percentile of that filtered and high biased dataset. Now, that 95th percentile value is dominated by an area that they -- that was mentioned previously where they discovered a five-and-a-half-inch uranium fuel rod that had somehow gotten down into the drains, and the soil concentration around that point was much higher than the other soil concentrations that were measured in

this system. And so, that dominates the 95th percentile value that we applied to all of the work. So, that is an obvious overestimating assumption.

So, I want to also bring up a fact about the source term. So, we talked about this fuel pin, and there's a record of finding this one fuel pin. And the working group expressed the concern that we have not provided evidence that similar or higher levels may not have existed elsewhere in the drainage system. And that is a textbook example of a prove the negative argument. We can't prove what didn't happen. All I can tell you is there is no record of any more beyond that one, and furthermore, I don't think this is accurate, because we have provided evidence. SC&A, in fact, weighed in on this scenario back on -- back in 2020 about the applicability of the 95th -- '95 data, and they discussed that this argument is, essentially, arguing that somehow when the workers went in and cut out sections of the pipe to clear clogs, that they somehow selectively removed the highest and most contaminated soils and left behind the lower contaminated soils. And SC&A at that time judged that to be implausible. Now I know they're -- they're conclusions today are different, but I actually, still agree with that 2020 conclusion that it's just not plausible because these are workers who, by all accounts, didn't even know that they were working in an environment where there was radioactive material, so how could they selectively remove the most contaminated soils. It doesn't make any sense. And I don't want to lose fact -- lose sight of this fact: When we did our bounding estimate, we use the total contamination inventory in the soils, even though we know that 80 percent of that contamination came from sources that are not covered by

this program. Only 20 percent came from AWE workers -- AWE work. And we didn't want to argue about that split, so we just took the 95th percentile of the total soil inventory. So, that is overestimated by a factor of five right there. And if you want to argue that it should have been 5.1 or 5.2, okay, but only 20 percent of this is covered material to begin with. So, we took the 95th percentile of the total contaminated -- total soil contamination associated with the most contaminated drain lines in the most contaminated area of the most contaminated building on site.

All right. So, the working group also raised a number of other issue: confined spaces, pipe scale, coagulants, workplace not controlled as a radiation environment, and the D&D era. I'm not going to go over the D&D era thing; we already talked about this, but I'll walk through the rest of these.

A nonrad work environment. Well, we talked about this. Now, I did notice that this particular issue, while it was in Josie's December presentation, I didn't notice it in the presentation today. So, I don't know that that's really an SEC issue still today, so I'm not going to spend a lot more time on that.

All right. Confined spaces, let's talk about this. Catch up on my slides, first of all. So, Josie's slide four in the presentation today seems to agree -- scroll time. So, Josie's slide presentation four -- slide four from her presentation today seems to agree that confined spaces is not an SEC issue for Metals and Controls. So, that -- that's good. That -- we're in agreement with that. But then later on slide seven she again mentioned confined

spaces in the pipe cut scenario, which she did present as an SEC issue. So, I'm -- I'm not quite sure what the status of that is with regard to the SEC. So, I'm just going to go ahead and cover this slide and tell you, you can see from this picture, which by the way did not come from Metals and Controls. It's a stock photo. It's the best photo I could find to illustrate the situation that I think existed at Metals and Controls. So, you got a standard-height man, you know, maybe the upper five feet, maybe six feet, who knows, standing in a trench about three to four feet deep, because we know that these drain lines were located two to three feet below grade, and the trenches were about three to four feet deep. Just look at the picture. You can see that that is not a confined space. It's just not. So, in answer to my last bullet why is this still being presented as an SEC basis, I don't know that it is. I'm not sure. But I think you can see from this picture that this is not a confined space.

Go on there. Contaminated equipment. So, Josie's slide 13 from today characterize this issue as an unaddressed M&C exposure pathway, and I have to take some issue with that, that's not accurate. We have repeatedly addressed this issue, most recently in our August 2023 response paper where we stated that we previously responded to this concern. Texas Instruments reported to the NRC at the AWE operations, that was buildings three, four, and 10, were decontaminated and decommissioned and that all of the radioactive materials were removed during the period from 1955 to '68. And the largest building 10 cleanup effort occurred at the end of '58. Now, here's a quote: Contaminated noncombustible scrap material and

machinery were collected and disposed of. I can give you the SRDB reference if you want to see it after this, but it was removed. And I have to tell you that they -- by the end of the AWE period, they had very tight contamination controls characterized by what they were calling the smidgen hunt, and Admiral Rickover was involved in establishing that regime. So, it's been our contention all along that the machinery that was involved in the AWE work was removed from the site by 1968. Now, as Jesse clarified today that, at least, a big part of the concern on this issue involves large equipment and contamination that you might find under large equipment or in the inaccessible areas of that equipment. And we are aware of only two instances of -- of that situation occurring. They are the wire drawing machines, and Weston describe these two isolated incidents. There were two isolated instances. And here's what they had to say about it: First, the amounts of contamination in and around these residual contamination areas were calculated to be extremely small. TI -- that's Texas Instruments -- determined that because of the low exposure potential associated with the slightly contaminated areas, they did not need to be disturbed. And that was discussed with the NRC project manager, and he concurred. Now, here's the really important one. They also said -- and this is a quote -- in all instances, the residual contamination features are isolated from routine manufacturing operations and worker contact. Because of the inaccessibility of these features, inadvertent intrusion is virtually impossible. And I have to point out to you that these two pieces of equipment, these two wire drawing machines, we don't even know that that came from the AWE period. They

were -- they could have been contaminated during the HFIR work, which is not a covered activity during the residual period. So, it's not even clear that those two are relevant.

So, I also re-reviewed all of the worker interviews, including the ones that SC&A and the working group cited in support of this issue, and none of them, specifically, specified that they were talking about AWE equipment that was repurposed. And all of the workers that they cited actually did not work during the AWE period. They worked during the residual period when HFIR operations were going on. So, it is very possible, I would say even likely, given the fact that contaminated machinery from the AWE period was removed -- very likely that these two pieces of equipment were contaminated during the HFIR period. But I don't have the evidence to nail that down 100 percent. So, the bottom line is there's just no evidence to support the idea that AWE-era machinery was contaminated and was a routine source of exposure during the residual period.

Okay. Let's see. Coagulants. Josie's slide 11 from today characterizes, again, this issue as an unaddressed M&C exposure condition, and that -- again, that's not accurate. We have repeatedly addressed this issue, most recently, again, in our August 23 paper and again at the December 6th working group meeting. Now, Josie gave you a good overview of kind of the idea here. To answer some of, I think it was Jim, maybe Paul's questions, the worker referred to this material as green lube or also he referred to it as coagulant. And here's the -- here's the idea. The -- this material, it was a mineral oil-based substance. It was a lubricant. An

industrial lubricant that was used on the wire drawing machines, and it had a green color to it.

And so, it was not deliberately poured down the drains. It inadvertently made it way -- made its way down there. They were using it as a lubricant on the wire machines, and it, you know, leaked off down into the drains. And it had a distinctive green color, so that's how they detected it. It wound up contaminating a pond on site. And as the worker described, it got down in the drains and clogged it up. And as any of you know, you don't pour vegetable oil or bacon grease or anything like that down your -- your kitchen sink drain because it will plug it up. It coagulates it.

And this is another one of those situations where I think we have a symantec issue, and it involves the definition of coagulate. Merriam-Webster -- Webster defines it as: To cause to become viscous or thickened into a coherent mass, and that's exactly what happened in this drain line, plugged it up. It says nothing at all about concentrating contaminants, and that was my problem with this from the very beginning. There is no evidence that there was any concentration going on, and I think Jim did some of the heavy lifting for me on this point earlier.

So, the problem is that SC&A extended the definition of a coagulant well beyond this, that it solidifies, and asserted that it has functional -- it might have had functional similarity to chemicals used in a water treatment plant, and we pointed out that the very references that they provided specified that in a water treatment plant, the coagulants they use are most often aluminum and iron salts. They are not industrial lubricants. So, those

relevant -- those references are not relevant to the situation. So, the other main problem with -- or a main problem with this is that this situation occurred during the early '80s, early to mid '80s when the only radioactive material, you know, worked with radioactive material going on was the HFIR work. That is not a covered activity. So, even if that HFIR contamination got down into the drains and did what SC&A says it did, it's not covered by our program.

So, there are a -- there are a number of other problems, if you take this scenario through to its logical conclusion. First of all, the -- when you measure the concentration of radioactive contamination, you take the activity or mass of the radioactive material over the total mass, and if you are adding a large mass of this green lube to the system, you are actually decreasing the concentration, not increasing it. Secondly, you have to remember that 80 percent of the total inventory in the soils was not a covered material, including this, during the HFIR period. Next, the clog would have been wet. It was a -- it was a drain clog. And furthermore, the water table at the Metals and Controls site was -- was very high, and so work down on these train lines was wet and goobie. That would make -- anything that might have, you know, the workers might have exposed largely nonrespirable, but we didn't assume that. The clogs did not sit there for weeks and months and years accumulating supposedly concentrating material; they were removed. And finally, if you follow this to his logical conclusion, let's just say all of -- everything I just said is not true. Let's just take SC&A's scenario. If, in fact, this material is sitting in the drains

concentrating material, well, the longer it sits there the more concentration you get. So, then where did it go? Why don't -- I mean, that leads you to the conclusion that the pipes that we saw in 1995 actually had the highest concentrations. So, this just doesn't make any logical sense. And furthermore, there's no evidence to support it. It's just, basically, a speculative scenario.

Okay. The -- the pipe contamination issue, the scale issue, you're -- by the way, here is the second time I made this walkover survey mistake. It wasn't a walkover. The idea here is that there was scale inside of the pipes, and workers could have been exposed to that when they cut the pipes. So, I need to -- this is another symantec issue. I need to discuss the definition of scale. Now, according to corrosionpedia.com, which describes itself as "the online hub for corrosion professionals." Who knew that there was such a thing. I certainly didn't before I put together these slides. But they define scale as: It's a metal salt, and it's a good conductor -- conductor of electricity. And when it builds up on a metal surface, such as the inside -- such as inside the cast iron casing of a pump, it acts as an anode, and it allows corrosion to take place. So Josie's slide 8, third bullet said that NIOSH's conclusion on scale only being associated with cast iron pipes is not corroborated, and she discussed the 1 million dpm per 100 square centimeter data point as, you know, arguing against NIOSH's definition -- NIOSH's assertion the scale really only applies in the cast iron or, you know, metal pipes, but it doesn't do that.

Here is what Weston said about that 1 million dpm per 100 square

centimeter data point, and this is a quote: During contaminated concrete removal at the north side of the screen print room, area seven, the initiation point of a four-inch vitreous clay main line was encountered. The line exhibited surface contamination levels on the pipe interior as high as 1 million dpm per 100 square centimeters, although it did not contain a visible accumulation of residue. Do you notice what's missing from that? The word scale. They never called it scale. So, this does not argue against NIOSH's definition of scale. It says nothing about it. We do agree that it was found in a vitreous clay pipe. And you know, so why does this matter? Is this just another argument over the definition of a word? Well, we think it is. When you do a pipe-cut scenario, whether you encounter scale or contamination adhered to the interior of a pipe, or the sediment and goop inside of the pipe, all of that has to be considered because the worker could be exposed to that material. So, focusing only on the data points that explicitly use the word scale gives you a misleading picture of the available data. It makes it seem like we have much less data than we do.

Now, given the work groups' recent concern about this scenario, and I'm -- please don't misinterpret when I say recent -- I would say maybe over the past year, we had been focusing on the soil outside the pipe and more recently the working group and SC&A became concerned about the pipe cut scenario. Given that concern, we just did a back-of-the-envelope calculation, a very crude calculation, very quick, only takes a few minutes, and we made extremely conservative assumptions. And I'm using those words deliberately again. And that's appropriate for a bounding scenario.

So, in addition to the extremely conservative assumptions we made with the soil scenario, we made the following additional ones: We assumed that the cut is exactly at that 1 million dpm per 100 square centimeter point. That's the 100th percentile. This -- even though we know that that pipe was actually removed by Weston not by the M&C workers. The cut -- we assumed that the cut was made using a power saw even though the workers told us that the clay pipes were frequently just busted up with a hammer and the -- and the pieces were taken away, or they use snap cutters or, you know, on -- on some of the cast iron pipes they might have used a power saw.

Now, I did not intend to talk about torch cutting, but it became a bigger issue in Josie's presentation, so I do have to talk about that. We are not saying that torch cutting did not occur at Metals and Controls; it did. What we're saying is torch cutting did not occur on these drain lines. The drain lines were vitreous clay and cast iron. And the workers said that they used hammers on the clay pipes or maybe a snap cutter, and that's what they used on the cast iron pipes as well, or they might have used the power saw. They never said that they use torches on these drain line pipes, and we've -- you know, we've already pointed this out. We already discussed this in previous work group meetings, but this issue came back. So, and the reason that's important is because torch cutting generates fumes, and we think it's not a relevant issue for this scenario.

So, you put all of these together, all of these assumptions, these extremely conservative assumptions, and you come up with an estimate of

about 32 millirem as a committed effective dose. So, that's not the bounding scenario. That's less than half of what we estimated from the soil scenario, and that's why we didn't call it the bounding scenario. And again, the soil was, you know, dominated by the area around that fuel pin.

So, I think that this is also a good time, before I move on, just to provide a little perspective on the doses that the -- you know, the working group is recommending an SEC here, and these are for doses that 71 millirem is less than even the mandatory threshold for -- for radiological control, which is 100 milligram a year. And it's also nine times lower than the average background that a person in the United States might receive. Now, I am not saying that there's any kind of a threshold for you all to do with sufficient accuracy consideration or an SEC. I'm not saying that at all. But SECs are supposed to be four doses that cannot be bound -- we have bound it -- and four doses that are high enough to endanger worker health. And I just asked you to consider whether a dose that is nine times lower than background really meets those criteria.

Okay. Extreme conservatism. This is the last of the issues that I'm going to talk about. What -- extreme conservatism is a phrase that NIOSH used, and why did we say it? Well, it was a response to a comment from 2022 from SC&A. Here's all the words. You can read it. The part I want to focus on is the sediment readings taken in '95 from a priority one pipe, obviously, had a high uranium concentration, but is it the bounding case. So, in other words, is our dose high enough to be bounding? It might be too low.

Now, in Josie's December 7th presentation, here's what she said: NIOSH's use of extreme conservatism -- a few words here -- resulted in high-bounding values, but we questioned whether it was plausible. So, I interpret this as well, now our dose is too high to be plausible, and I think a light bulb went on -- on my head when Josie was giving her presentation. That kind of explains the big disconnect here. I know Josie objects to us framing this as our bounding dose being too high and too low at the same time. And I think this explains why we are at loggerheads on this issue. NIOSH is using what we interpret as the Board's precedent since the Linde discussion, what 13 years ago now, that there is less concern from a sufficient accuracy and plausibility standpoint when the bounding dose is low. If you do all these bounding doses and you get a very high dose, that's a -- that's a problem. It's not sufficiently accurate. But if the dose is as low as we have here, it's much less of a concern. And it appears to me -- this is just my interpretation, and I'm sure that the working group will correct me if I'm misstating this -- it appears to me that the working group is not viewing things through that lens. They are saying the plausibility is an issue regardless of how low the dose is. And I think that might be the explanation for our disconnect on this issue. And that's something that you all on the Board are going to have to work out amongst yourselves. I've told you how we interpreted it. You can work that out for yourselves.

We used extreme conservatism in the context of the entire EEOICPA program from the beginning. We are directed by law to be extremely conservative, claimant favorable. And we have detailed the measures that

we've taken to be claimant favorable in this 2008 publication, peer-reviewed publication. Table 6 from there was 33 extremely conservative aspects of -- of the EEOICPA program, and that's what we meant when we said this phrase. I think since we said phrase, it's kind of up to us to clarify exactly what we meant by it. We are not backing away from our response to SC&A's comment. We are, essentially, doubling down or embracing it.

Now, specifically, with respect to Metals and Controls, we're near the end, so hold tight just a couple more slides. The conservative assumptions that we made include: We assumed that the same person did all of the work in the contaminated soils. We know that that's not true. We assumed that the sediment is dry and generated dust when it was really wet. We used the highest air concentrations for the entire task even though that came from that one 95th percentile data point. We assumed that all of the airborne dust is respirable even though that we know that only a fraction of the dust is really respirable. We use the most claimant favorable mix of uranium and thorium because those are the contaminants found at Metals and Controls. We use the most claimant favorable solubility type. We used the entire soil inventory even though 80 percent of it is not covered. So, we did not just -- I think SC&A or the working group characterized this as extreme statistical margins. We didn't just slap the 95th percentile value on it and call it a day, although we did use the 95th percentile. We made all of these other conservative assumptions based on the conditions specifically at Metals and Controls, and that's what we mean by extreme conservatism. And it baffles me why 24 years into this program, this has suddenly become controversial.

So, in conclusion -- my throat is getting really dry -- this won't surprise you. We conclude that we can plausibly bound -- bound the doses with sufficient accuracy. We did have concurrence with SC&A up until 2022, but the working group never concurred with that, and today we don't have that concurrence. There is no evidence to support this list of issues here; there's only speculation. And our bounding estimate cannot be simultaneously too high and too low to be plausible. That doesn't make any logical sense, but again, you all are going to have to decide about the plausibility argument in relation to whether the dose is high or low. And furthermore, -- and finally, an SEC designation here would contradict established precedent and what we -- the way that we have handled previous SEC sites. It would create disparities, and that raises a fairness question.

So, that is it for me, and I would be happy to entertain questions.

MEMBER BEACH: Thanks. Hey, Brant, this is Josie. If you don't mind, I think Joe had a quick comment that he wanted to make, and then work group members, board members, I'd like to be able to get to the petitioner and then have the discussion afterwards, if that would be okay.

DR. ULSH: Josie, do you want me to go back to a particular slide, or?

MEMBER BEACH: Not for me just this second.

MR. FITZGERALD: Well, I also want to certainly let the Board have precedence over any questions or comments I might have. I know Paul wanted to -- he was saving a question, so I'll defer to the Board members who have questions, and I will certainly jump in afterwards, if that's all right,

Josie?

MEMBER BEACH: Okay. Board members?

MEMBER KOTELCHUCK: Okay. So, we're going to ask questions about -- on --

MEMBER BEACH: Questions, comments? I mean, looking at Brant's slides, I had comments on almost every single one of them, so --

MEMBER KOTELCHUCK: Me, too.

MEMBER BEACH: -- some of the information is different, but I'm going to -- I'm going to let other Board members that maybe haven't spoke or want to ask questions or comment to please do so.

MEMBER KOTELCHUCK: Well, I would -- I was going to go back to a couple of slides, but I certainly wanted to go back to slide 13 on the data applicability. Right. Now, this is -- the comment there is that -- that this was not D&D survey data, this was -- this was at the end of the residual period. Fine. But we -- the issue is can we extrapolate data collected in 1995 back to 1968? So, the -- this is supposed to address the time period. And all you say is that this 1995 data wasn't D&D, it was pre D&D. I'm perfectly happy to agree with that. It's -- it was the end of the residual period. Nevertheless, it does not talk about what was going on in the previous years. And we have raised issues that -- that say that there are issues that haven't been addressed and that could have -- could have given greater exposure to the people. So, I'm not comfortable -- I never had been with saying '99 -- all -- everything from 1995, this was it.

For example, we -- the coagulant issue. The coagulants stopped when

the wire -- when the wire drawing closed in 1981. So, the question is if the coagulants concentrated exposure at -- radiation exposure from those pipes, it did so from '68 to '81. Now, we're talking about 1995. And I just look at it I think well, what does 1995 tell me about what people who worked in the '68 through '81 period were exposed to, and it seems to me that's a relevant concern. So, --

MEMBER BEACH: Yeah, thanks. Thanks, Dave, for that comment. If you could move your slide to 14. I don't know that we need you to answer these right now, Brant, because we've been through all of this in our work group meetings. I don't know how anybody else feels about that, but if you have a specific question you want answered, please do say so. I'm just looking at the clock also. I mean, if --

CHAIR ANDERSON: Okay.

DR. ROBERTS: Excuse me. Just make -- we need to make sure that people do have an opportunity to ask questions and make --

MEMBER BEACH: Agree. Agree. I didn't feel like Dave's was a question, more of a comment; is that correct, Dave?

MEMBER KOTELCHUCK: That is correct. Sure.

MEMBER BEACH: And I --

MEMBER CLAWSON: Josie?

MEMBER BEACH: Yes?

MEMBER CLAWSON: This is Brad. I -- I've got -- I've got a ton of questions here that I want to be able to understand. But since you're on slide 14, when you're looking at Chapman Valve there, I'm glad you brought

that up, Brant, because you brought back a very, very bitter memory for me. If you guys also remember, in Chapman Valve, you guys found an enriched sample of uranium, and you discarded that because supposedly they didn't work at it. They didn't have any enriched uranium. That one's always bugged me, so don't -- don't -- when you start putting up all of these like this, every one of these is different.

One of the comments that you made that I really liked was the workers didn't know that they were working in a radiological area. That is part of the problem. They did not know what they were working with. And I can guarantee you if you're working in a radiation area or contaminated area, you're going to do things a little bit different. But they did not do that.

You said earlier, and I need to get clarification on this, Texas Instrument D&D'd the facility?

DR. ULSH: Yeah. They were the operators during the early period.

MEMBER CLAWSON: So, --

DR. ULSH: Yeah.

MEMBER CLAWSON: So, where's -- where's their surveys?

DR. ULSH: They conducted surveys at the end of the AWE period. They presented those to the NRC, and then when the NRC came back in the middle '80s to terminate the license for the HFIR work, they qualitatively commented that the contamination levels had not changed, but they were not able to relocate those early survey data. So, they went back and --

MEMBER CLAWSON: Okay. So, you --

DR. ULSH: -- re-surveyed it.

MEMBER CLAWSON: -- don't -- you don't have data. You don't --

DR. ULSH: They went back and re-surveyed it. Now, --

MEMBER CLAWSON: Yeah, so that's why they came back. This -- this is one of the issues, and something that has always gotten to me is when you guys start talking about this low dose. This is all low dose. This is all this. You need to go to your Health Physics Society and read the article in there and I believe it's the latest one, factors influence and effects of low rate, low dose radiation exposure. It might be very enlightening to you guys.

DR. ULSH: Well, it's not going to --

MEMBER CLAWSON: (Indiscernible).

DR. ULSH: -- be really enlightening to me, because I'm the editor in chief of that Journal, and so I happen to know what you're talking about, and I can point you to --

MEMBER CLAWSON: Well, good.

DR. ULSH: -- a dozen other articles that also have something to say about that. And there --

MEMBER CLAWSON: And I can --

DR. ULSH: -- we republish a range of articles that present a range of opinions. Now, with regard to --

MEMBER CLAWSON: Right.

DR. ULSH: -- with regard to the workers working in an area and not knowing, I have to be fair, that is a concern -- concern that was expressed by the petitioner, not -- not originally by me, but we agree with that. And

that's why our source term does not take credit for all of those things that you mentioned. You do things differently when you know you're working in a radiation environment, like you have RWPs, you use PPE. We didn't take credit for any of that, and our source term reflect -- model reflects that fact.

MEMBER CLAWSON: Well, Brant, you also made another comment about coagulant, and then you started talking scale and everything else like that. And really, that is word symantecs and everything else. I do want you to know from my experiences dealing with it that anytime you have any kind of a residual oil or anything else like that, it is going to collect. Anytime we went into decon something that had any kind -- one of the things we first looked for was any kind of residual oil because we knew it was going to be far higher, but that's just in my world. I want you to understand why that can be also a problem there.

But there is -- there -- there -- you know, it all comes back down to opinions and this and that, and we can go on there. We can also -- we guess at a lot of stuff. The problem that I already have is there is not that much information. There is not that much monitoring. You can back extrapolate everything else you can. Every one of these sites is going to be different. I've got a lot -- but there's a lot of other people who probably want be able to have something to say, so I'll turn it over to them.

MEMBER BEACH: Thank -- thanks, Brad. Other board members?

MEMBER POMPA: Yes, ma'am. This is Pompa. I've got a --

MEMBER BEACH: Right, David. Go ahead.

MEMBER POMPA: -- question. Hot spots -- how -- you mentioned hot

spots. How many, how big, and where were they located?

DR. ULSH: Okay. Let me think here. They were located inside the drain pipe, the priority one drain pipes. I think I might be confusing -- Pat, can you weigh in on the number of hot spots? I don't have that number at the tip of my fingers. I know that when we did the pipe scale, --

MR. MCCLOSKEY: Sure.

DR. ULSH: -- calculation, there were 40-ish data points that we used, but that included things that were categorized as scale but also things that were categorized as sediment and other things, but Pat, can you provide --

MR. MCCLOSKEY: Yes. This is Pat McCroskey. I Just want to mentioned I'm not conflicted on this site. But anyways, you used the term hot spots, Brant, in a way to show how the surveys for the soils and the sediments were targeted. So -- so, that's how that term is used here. There was a systematic method of doing rad surveys at the surface to identify high radiation levels. And when M&C identified the higher radiation levels, that's where they chose to do their sampling of the soils. So, that's how the term is used. And in the number you threw out there a moment Brant is correct for how many -- of actual samples they took.

DR. ULSH: Yeah, it's somewhere buried in my notes. I know it's in the 40s.

MR. MCCLOSKEY: If that helps.

MEMBER BEACH: Okay. Thank you. Rashaun, can you give us a time check on where we're at? I don't want to run the discussion short, but I don't want to run out of time either.

DR. ROBERTS: Yeah, I think we're -- we're fine. We have a break that's scheduled, and if need be we can go into the Board --

MEMBER BEACH: And I --

DR. ROBERTS: -- work session.

MEMBER BEACH: And I also want the petitioner to have a chance.

DR. ROBERTS: Sure.

MEMBER BEACH: but I don't want to cut anybody off, so I just --

DR. ROBERTS: Right.

MEMBER BEACH: Thanks, Rashaun, and thanks, David. Any other questions from other board members, comments?

CHAIR ANDERSON: I just have a real quick -- quick question to --

MEMBER BEACH: Okay.

CHAIR ANDERSON: -- Brant. What -- what was the basis for the '52 to '67 SEC determination?

DR. ULSH: You know, I --

MEMBER BEACH: It was lack of thorium.

DR. ULSH: Right.

MEMBER BEACH: Thorium. It was a thorium --

CHAIR ANDERSON: (Indiscernible) --

MEMBER BEACH: -- they couldn't.

CHAIR ANDERSON: Okay.

MEMBER BEACH: Yeah, it was thorium.

CHAIR ANDERSON: Okay.

DR. ULSH: Can I -- can I stop sharing my screen?

MEMBER BEACH: Yes. Any -- any other --

MEMBER ZIEMER: Yeah, Josie I have a comment.

MEMBER ZIEMER: Okay. Go ahead, Paul.

MEMBER ZIEMER: Yeah. So, well, I'll do it in two parts. So, number one, I thank the work group for all the work they did on this. It's a very difficult one. I'd like to say that I found the presentation that Brant gave from NIOSH to be very convincing, and I believe that support the ability you characterize and bound doses easily for this level of activity.

MEMBER BEACH: Okay. I just wanted to remind the Board that the work group -- and I didn't say at this time around, but the -- the work group's recommendation out of our eight years of work was unanimous with one abstention to approve an SEC for Metals and Control, but I appreciate your comments on that, too, Paul. I just thought I would throw that out as well.

MEMBER ZIEMER: And --

MEMBER BEACH: And your second part?

MEMBER ZIEMER: Well, no, that was -- that was it. It was two parts. I did want to ask, too, one of your members, I believe, read a comment or is she a member of the --

MEMBER BEACH: She -- she is a member of our work group, correct, and she had a class she had to teach, so she wasn't --

MEMBER ZIEMER: Did she vote on -- did she vote on the work group?

MEMBER BEACH: No, that's -- that -- that would be collect -- oh, she did. She abstained.

MEMBER KOTELCHUCK: No, she abstained.

MEMBER BEACH: She abstained.

MEMBER ZIEMER: I gotcha.

MEMBER KOTELCHUCK: She abstained. 401.

MEMBER ZIEMER: Okay. Got it.

MEMBER BEACH: Yeah. Thank you. All right. Any other comments?

MEMBER VALERIO: Josie, this is Loretta. I have a --

MEMBER BEACH: Hi.

MEMBER VALERIO: -- comment. It's --

MEMBER BEACH: Hi, Loretta. Please, go ahead.

MEMBER VALERIO: So, did Brant indicate at some point all of the drain pipes have been surveyed and the sediment and the soil around the pipes had been surveyed? Did I understand that correctly?

DR. ULSH: I --

MEMBER BEACH: He -- go ahead, Brant. I don't think you did.

DR. ULSH: Well, the part that I focused on, I think, was the priority one drain pipes and the hot spots that they identified around those pipes. So, they did that -- that carrot -- that targeted survey to identify the hot spots and wherever they found an elevated reading, that's where they took a sample. I'm not -- does that answer your question?

MEMBER VALERIO: It does. So, that raises my next question. When I read the transcript, and I believe that was from April of 2020, there was a comment in there that -- and it was on page 19, and I may have misread it, but it does state, and I think it was by -- by John Mauro that said, you know,

and to quote him, it said: Now, we'll get into this a little bit more detail, but we found that though the pipes were snaked and likely a considerable amount of radioactivity might have been removed inadvertently by the M&C workers performing subsurface activities, that we also found that there were a number of pipelines, which were clearly never snaked and never cleaned up and never removed. So, in my mind, that raises a question. Was there just one priority one pipeline?

DR. ULSH: No. No.

MEMBER VALERIO: And --

DR. ULSH: There were multiple priority one pipelines, and what they found in '95 was that those pipes were 50 to 90 percent clogged when they uncovered them and took them out. What -- that part that you just read from -- from John, that is where he discussed that, yes, they acknowledge that when the workers went in and removed the clogs in these pipes, they might have removed some radioactive material, but it's not plausible to assume that they selectively removed the very highest exposure. And they were comfortable, because we had applied the 95th percentile value, that that accounted for -- for that factor.

MEMBER BEACH: Does that answer your question, Loretta?

MEMBER VALERIO: It -- it does. It -- it does.

MEMBER BEACH: Okay. Thank you. One of the things you said, Brant, was that we were -- the work group was asking you to prove a negative, and -- and I just wanted to emphasize that the SEC regulations do not require that NIOSH prove the negative, and we have never asked you to

prove a negative. The regulation requires that you establish that you have access to sufficient information and to estimate maximum doses for every type of cancer for -- for which radiation doses can be constructed. I mentioned that in my slides. That would have been incurred in a plausible circumstance. The question is whether the necessary information is available for the bounding analysis while contaminated scale has been identified by NIOSH as a plausible exposure pathway. There is insufficient sampling data available where a maximum dose can be derived. So, I -- I just wanted to be clear. We've never wanted you to prove a negative, just prove that you had adequate samples.

DR. ULSH: Well, when I put that slide up with the quote, and I said this is a classic case of a prove the negative, the quote that was on the slide -- excuse me -- was that something like NIOSH has not proven that the -- I think it was the million dpm sample, there weren't higher concentrations elsewhere in the -- in the drain lines. And so no, you never said the words prove the negative, but when you say prove that there wasn't something there, that is a classic case of proving the negative.

MEMBER BEACH: Okay. Any other comment? Board members? We are waiting -- we do have --

CHAIR ANDERSON: Well, yeah, I would just ask do we have any information on -- over that 27 years prior to '95, how much pipe would have been removed or anything like that?

MEMBER BEACH: Our -- our next petitioner who has comments might have some answers on that?

DR. ROBERTS: If -- if you want him -- so, Andy, you directed the question to Brant, or?

DR. ULSH: Yeah. Or who -- if somebody can give us. I mean, part of this is if there was a lot of intrusive activities went on prior to when the '95 data was gathered, we really don't know much about that. It could have been just snaking it out, and the rest of it washed on down and then it got stuck again, or -- or whatever. So, it's how much of this actually went on. We do know there were several big projects where they moved equipment. And the other -- kind of the other question I have for Brant is how can -- can you distinguish the HFIR radiation contamination from the AWE contamination? I mean, your graph there showed 80 percent of it is from HFIR. How do we know that?

DR. TAULBEE: That's basic --

CHAIR ANDERSON: Before we --

DR. TAULBEE: -- answer that question? Can I answer is first one there, Brant?

DR. ULSH: Sure, go ahead.

DR. TAULBEE: Okay. With regards to the removal of other pipes and how much of it has been removed, I'd like to kind of draw the Board's attention back to that survey of going through and trying to find some of those hot spots. And the highest one is where there was a fuel pin, and so that contributed to the 95th percentile that we used to estimate these doses. So, that fuel pin got in there at some point in time and it stayed there, okay, over the entire time period. And so, that's why when we're using that as a

95th percentile of our -- of our distribution from that -- and we're assuming that that happens every year. This is why we have confidence that this is a bounding scenario. I mean, they actually, found material, the -- some of the finished product there in that drain line that got washed down there. So, you could have removed a whole bunch of the rest of the drain lines, say you removed half of them, that 95th percentile is still going to be bounded there with that high fuel pin in that particular area. And that's what we assumed they ran into every year, all 27 years, if they worked there that whole time, every single year they ran into that concentration, and we still end up with a -- a relatively low dose of 71 millirem per year. And so now, Brant, I'll let you answer the second part of Dr. Anderson's question.

DR. ULSH: Okay. So, just to remind everyone, I think Dr. Anderson asked how we distinguish between HFIR and AWE contamination, and the answer is we can't. And that's why we based our bounding scenario on the total in the soil. With regard to the 80/20 split, I think that came from the Weston report, and I think it was based on the inventory of material that went through those programs. But Pat, I'm going to put you on the spot. Am I misspeaking here?

MR. MCCLOSKEY: No, Brant, you're right. There was a document written by Texas Instruments where they were trying to make the case for why the Navy had to help them out with the remediation, and they justified that 80 percent of the throughput was from Naval sources and commercial sources. And so, that's where we came up with the 80 percent value. I could -- we could dig up the SRDB, and board could read it for themselves,

but --

CHAIR ANDERSON: But it is (indiscernible) on the measurements?

MR. MCCLOSKEY: No.

CHAIR ANDERSON: No.

MR. MCCLOSKEY: It's not.

DR. ULSH: And that's why we based it on the total inventory. Whatever the split is, we use the total.

MEMBER BEACH: All right.

CHAIR ANDERSON: We need to move on.

MEMBER BEACH: Okay. All right. Andy, I would like to go ahead and give Joe the 10 -- Joe 10 minutes, and then give the petitioner 10 minutes, and then move back to the deliberations, if -- if we can do that. I don't want to run out of time and it -- we're getting close.

DR. ROBERTS: So, Josie, I just want to do one more check and just see do Board members have any remaining comments or concerns?

MEMBER POMPA: Well, Josie, this is David Pompa. There's a question in my mind. I heard the diameter of the fuel rod was five and a half, but do we know how long it was? And was it flaky? Was it corroded?

DR. ULSH: I think --

MEMBER BEACH: No, it was -- it was not corroded. It was a shiny fuel rod.

DR. ULSH: And it --

MEMBER BEACH: We discussed that many times in our work group meetings.

DR. ULSH: And I think it was five inches long, not five inches --

MEMBER BEACH: That's correct.

DR. ULSH: -- in diameter.

MEMBER BEACH: Yeah, five inches long.

DR. ULSH: Yeah, I don't recall exactly what the diameter was.

MEMBER LOCKEY: I'd like to ask one question to Brant if I can. In your presentation, you mentioned that there was targeting sampling done to drain lines as a probe. Did I read correctly on that?

DR. ULSH: You did.

MEMBER LOCKEY: And that was done when? '95?

DR. ULSH: Yes. They pushed the peanut probe through the -- through the pipes. It was, at least, the early '90s. I think it was '95.

MEMBER KOTELCHUCK: It was ninety -- oh, sorry.

MEMBER LOCKEY: And the purpose of that was to?

DR. ULSH: Was to identify hot spots. Anywhere they found elevated readings, then they went and took a sample.

MEMBER LOCKEY: And that's where they did 13; is that right? Is that the -- where the 13 number came from?

DR. ULSH: Pat, help me.

MR. MCCLOSKEY: So, there's more than 13 sediment samples that we have. It's for the -- for the soil bounding scenario, we have 20 samples. So, they start out by fishing the sodium iodide and beta assimilation detectors into the feed lines until they hit resistance and high rad levels, and then they go in and they take soil samples. If you're talking about the soil samples,

there were approximately 20.

MEMBER LOCKEY: Oh, I see. So, they used these probes to measure radioactivity, perhaps within this -- within the block -- blockage or the soil samples around the blockage, around the pipe?

MR. MCCLOSKEY: Right. They -- first they gridded off the floor --

MEMBER BEACH: I'm -- Sorry, Pat.

MR. MCCLOSKEY: That's okay.

MEMBER BEACH: I'm -- I'm getting a little concerned that we haven't given the petitioner the time to speak, and I know a lot of this information was in the documents that we sent out a couple of months ago, so I'm not trying to be rude. I want to have time to come back and have some questions or -- or, at least, opinions on what you think where you're at. So, if you don't mind, I would like to, at least, get to -- Joe's been very patient and so has the petitioner, and I know he had to take the day off to do this.

DR. ROBERTS: Okay. Josie, how about if the -- the response to that question is wrapped up, and then we can have the petitioner present.

MEMBER BEACH: Okay. That would be great, thank you.

MR. MCCLOSKEY: And so -- did you want me to finish?

DR. ULSH: I do.

MR. MCCLOSKEY: Okay. So, first they did a radiation surveys, they grided off the floor of building 10. They narrowed, like Brant showed his picture, the building down to an isolated northwest corner of the -- of the building. It's a large building, but they isolated it down to 1/3, showed us where all the rad levels, and they identified it with drawings and also

interviews of those workers in there, and they knew where all the material was being moved. So, they did that with conjunction of the rad surveys to identify where to sample. Dr. Lockey, I hope that answers your question.

MEMBER LOCKEY: It does, thank you.

MEMBER BEACH: Thank you, and sorry for interrupting, Pat.

MR. MCCLOSKEY: You're fine.

DR. ROBERTS: Okay. Now, I'd like to go ahead and invite the petitioner to present, if -- if they would like.

MR. MIKE ELLIOTT: Yes. Thank you, Dr. Roberts. Pull up my -- good afternoon. My name is Michael Elliott, and I am a copetitioner for SEC petition 236 to recognize M&C construction and maintenance workers during the residual period as a designated class under the SEC provision, and I want to thank you. for this opportunity to speak with you.

Although, I addressed the Board back in August. I'll take just a moment to introduce myself. I'm a former employee at TI M&C division. I worked in the Attleboro facility during the AWE residual period, and as an environmental manager I served as the project manager for what we referred to as the nuclear decommissioning project, which spanned from 1992 to 1997, which was the final D&D activities to achieve termination of special nuclear materials license number 23 and release of the entire M&C Attleboro site for unrestricted use.

In the following account, I will describe how the M&C Attleboro site is unique as compared to most other AWE sites and why it is not possible to estimate a bounding dose with sufficient accuracy for the M&C construction

and maintenance workers during the AWE residual period covered under this petition. And I'd like to just take a moment to explain why I'm here. While I -- I am a former M&C employee, I'm not a member of the class of workers as defined under the petition as I wrote it, although I think looking at Josie's -- at Ms. Beach's definition today, I probably would qualify. I am not receiving any financial or other compensation of any kind for my time advocating on behalf of these workers, but I am a coworker and a friend of many of the workers in this class, some of whom have now developed one or another of the covered cancers. I am doing this out of a sense of commitment to the well-being of my coworkers and their families who were placed in harm's way without any training, protection, or even awareness of the hazards to which they were exposed.

As the project manager of the nuclear decommissioning project, I am uniquely positioned to bear witness to their situation so they can hopefully receive fair compensation to provide some consolation of the life-changing impacts their illnesses have caused. So, unlike many other AWE sites, M&C was a privately-owned government contractor. It was not a government-owned facility. And since it was privately owned, as soon as the AWE operations ceased at the end of 1967, the buildings where the nuclear program operations had been conducted were immediately repurposed for nonnuclear production activities. In the case of building 10, a 100,000 square foot building, which housed the majority of aw e operations, about 90 percent of the building footprint was repurposed for various nonnuclear production operations, like the wire department you heard about earlier and

support operations, including facilities construction and maintenance workshops.

After the end of the AWE operational period, there was only one remaining nuclear operation for the production of high flux isotope reactor fuel elements, or HFIR, and it was consolidated into a small floor space in the northwest corner of the building. When I started at M&C in 1983, two years after the HFIR operation ended, the temporary walls of the HFIR operation were still standing, and the full extent of that operation actually covered a much smaller footprint than what is suggested by the sketch of the building layout shown in NIOSH slide number 16. I know. I saw it. The actual footprint of the consolidated HFIR operation was defined by the boundaries of decontamination areas number seven and number eight, also shown on a sketch of the building layout in NIOSH slide number 16. In its haste to repurpose the facility for nonnuclear production operations, M&C quickly installed nonnuclear production line equipment in areas where AWE operations had previously been located without adequate decontamination.

In some cases, for example, the building four Lewis mill, a rolling machine that had been in use during the AWE operational period to produce nuclear program products was put back in use for nonnuclear production. And we did find contamination in that -- in that piece of equipment. In building 10, the M&C construction and maintenance workers also worked around other leftover AWE-era equipment like utility trenches, sumps, and subsurface drains as well as manufacturing equipment services and conduits. To be clear, the trenches and the sumps definitely met the definition of

confined spaces and were as much as six feet deep and about 18 inches wide.

During the 1994 and 1995 systematic building material characterization surveys, these features were found to be contaminated with residues and debris left over from the AWE operational period. There's no proof that it was -- it was -- they were contaminated by. HFIR. None whatsoever. And as Dr. Ulsh just -- in answering to Dr. Anderson pointed out, you can't distinguish the source term between the different programs. So, it was -- these features were contaminated, and they were documented in attachment four, which is entitled building four intense special features that is attached to the final termination survey report entitled remediation of building interiors prepared by Weston in October of 1996.

During the entirety of the AWE residual period, so from '68 to 1997, M&C maintenance workers routinely worked in these contaminated areas in direct and intimate contact with the radioactive contamination that had been released in an uncontrolled manner during the AWE operational period into subsurface soils, drains, sumps, trenches, conduits, and equipment that remained in service after the operational period ended. It's important to note that they did all of this work without any awareness of the hazards nor any radiological training, monitoring, or controls. I'd like to quote John Elliott, a facilities construction and maintenance worker, for his description of the work on the subsurface drains as described in his 2016 affidavit submitted with our SEC -- SEC petition application, and this is what John said, and I quote, It was a very dirty, dusty job. Often, the dirt and dust

flew right up into my face. I wore no respirator or any other special personal protective equipment. I simply wore regular work clothes. And I -- by the way John is on the call today. He's -- he's -- he's on the phone. And he texted me earlier that -- he said he's six feet tall. Trust me, I couldn't stand in a trench and fix anything. I had to get down there on my hands and knees and fix things down in the breathing zone of this trench. So, during the 1995 building 10 interiors (indiscernible) remediation, which, you know, start -- started, basically, in June of 1995, we became much more aware of the risk to these untrained workers when the remediation contractor discovered contaminated floor and roof drains hidden under the concrete floor slab.

I say hidden because this subsurface contamination eluded detection. It was never detected by any of the surface measurements that had previously been performed after the 1967 and the 1982-'83 D&D activities. This discovery led to a quickly planned and executed drainage system characterization survey to determine the distribution, concentration, and inventory of uranium in the drainage system. The reason the drainage survey was conducted with such an aggressive schedule was to address two underlying concerns: one, as Dr. Ulsh said, to evaluate the health and safety risks for nonradiologically trained worker exposures who might inadvertently come in direct contact with contaminated drains. And please recall that, you know, all that work has historically been done by the M&C maintenance workers. And two, to evaluate the potential for an inadvertent criticality event from relocation and/or disturbance of highly enriched and

concentrated uranium.

The drainage characterization survey primarily evaluated two types of data: direct measurements using field instruments and isotopic uranium analysis of sediment and debris collected from select locations in the drainage system. And I just have to pause and read from Weston's drainage survey report from January 1996 where they describe how they picked the locations for the samples. It says the radioactive material inventory was developed through sampling 13 subsurface locations of cast iron and vitreous clay lines.

After available TI as-built diagrams reviewed, which I shared, there was only one drawing, okay. These locations were selected based on historical information and/or suspected transfer of contaminated materials for these lines. Radiological survey data from previous investigations and removal actions undertaken in the pilot program, which, like I said, started in June, were used to identify potential routes of transfer through the facility. In general, -- okay. So, if select locations were blocked by stationary equipment or stock, alternate representative locations were identified. It doesn't say anything there about using the -- the peanut probe to identify, you know, hot spots where they took the samples. Basically, they just used as-built drawings and what limited information they had collected during the pilot remediation project to select, you know, the -- these -- the suspected hot spots. So, they may have missed it, you know. They -- they sampled 13 locations where they thought they would find high concentrations.

The collected samples focus primarily on sediment and debris because we were concerned about loose material contaminated with highly enriched uranium that could be disturbed by remediation activities and potentially accumulate enough mass in one place in the right geometry to trigger a criticality event. At sample locations where there was insufficient sediment or debris available for sampling, our fallback option was to collect a scale sample of the interior pipe walls. In most cases, contaminated sediment debris was readily available and collected. Consequently, there were very few scale samples analyzed. And I think, you know, Ms. Beach pointed out there were only six. Of course, we now understand the lack of scale sample data to be a significant data gap in estimating an important plausible exposure pathway to the maintenance workers who historically worked on the subsurface drains.

After analyzing the data the criticality -- criticality concern was found to be a low risk, but the health and safety risks to radiologically untrained maintenance workers was determined to be a legitimate concern. In the end, the drain survey report divided up contaminated drains into three categories based on their concentration of uranium and the risk -- risk posed to untrained workers. Priority one and priority two lines were deemed to pose a potential hazard to untrained workers performing routine maintenance and warranted the removal of the contaminated material by remediation contractors operating under the radiological protocols of the decommissioning plan. In other words, the D&D contractor. Let me be clear, the drainage system survey study represented a single snapshot in

time, namely September 1995. Before then, there had never been a single subsurface radiological measurement of the building interiors by anyone during the entirety of the AWE residual period. To justify his estimate of source term in the building interiors during the residual period, NIOSH has repeatedly cited historical D&D data. Just refer back to their slide number 15 today. But with the exception of the one-time drainage system survey by M&C's remediation contractor in 1995 that I just described, none of the other historical interior building surveys that NIOSH referenced collected any subsurface measurements of the building interiors.

In fact, we now know that the earlier building interior final termination surveys in 1967 and 1982 and '83 were flawed. Otherwise, we would not have found such widespread surface contamination in the building interiors on the order of 50,000 square feet identified during the 1994 and '95 affected area characterization surveys in the very same building interior areas that had previous -- that had previously been released for unrestricted use in 1983. In the end, here's the only information about this class of workers covered under the SEC petition that we can state with absolute certainty: One, there are no measurement or monitoring data for any member of the class of workers under consideration during the AWE residual period; two, work was performed with no radiological controls, no radiological training, and no awareness of any radiological hazards, none; three, workers unknowingly came in direct and intimate contact with elevated levels of residual radioactive contamination that had been released in an uncontrolled manner during the AWE operational period; and four,

there are no known contemporaneous written records of the nature, extent, and duration of construction and maintenance activities M&C work is performed in contaminated areas during any part of the AWE residual period. NIOSH's exposure scenarios were drawn from interviews of a small set of M&C workers, not all of whom were maintenance workers, more than two decades after the last exposure.

In light of the lack of sufficient information to estimate a bounding dose to the class of workers covered under this SEC petition in all plausible working conditions, I respectfully asked the members of the Advisory Board to grant SEC status to the class of workers covered by this petition as recommended by its own internal M&C working group. And I'll end my comments there. Thank you.

MEMBER BEACH: Thank you very much, Mike, and thanks for your patience. Having this at the end of the day is a little challenging.

CHAIR ANDERSON: Yes, there --

DR. ROBERTS: I would just like to note a couple of things before we get into questions and discussion. Nicole Martinez rejoined us and Gen Roessler had to leave, so she's -- she's no longer on the call. But there are there any questions or comments from the Board?

MEMBER LOCKEY: Hi, Jim Lockey. I thank you for your presentation, Mike. It was very informative. I want to pursue with you the -- your statement was that the workers during the richard -- residual time were not aware that they are working in a -- in a radiological -- potential radiological environment. Am I hearing you correctly?

MR. MIKE ELLIOTT: Yes, that's correct.

MEMBER LOCKEY: So, I guess, I would address this then to NIOSH. The workers that were interviewed by NIOSH, did they opine the same opinion? Were they unaware that during the time frame they were there they were working -- they were not -- they were working in a radiologically contaminated area, potentially contaminated area?

DR. ULSH: From my light -- well, first of all, Jim, I was not here in 2017, and so I didn't participate in the --

MEMBER LOCKEY: I can't hear you, I'm sorry.

MEMBER BEACH: Yeah, your sound's low.

DR. ULSH: There. I just lowered the arm on my headset, sorry. Jim, I was not here in 2017 when those worker interviews were conducted, but reading through the transcripts of those interviews, none of the workers ever said that they were aware of working in a radiation environment. Sometimes that didn't come up and -- during the interview, but no one ever contradicted what Michael said that -- that anyone knew they were in a radiation environment.

MEMBER LOCKEY: I agree with Michael in -- in all -- that's -- that's inexcusable.

MEMBER KOTELCHUCK: And I would say we in the work group heard many different workers say that over the years, and I think -- I think it's fair to say, at least dozens of folks testified personally in front of us. So, that was an issue all the way through.

MEMBER BEACH: Yeah, I think that's what struck us, Jim, and I

remember you commenting years a -- when this was first brought before the Board that the workers didn't know what they were working with, period, so good point.

MEMBER LOCKEY: I find that inexcusable. I really don't find any -- any type -- any way that can be justifiable.

MEMBER BEACH: I agree. Paul, did you have your question?

MEMBER ZIEMER: Yeah, I have a question. And Mike, I don't know -- thank you for your presentation. I -- I think you mentioned something about U-338 or 235, rather. Did I miss -- was there U-235 present on this site? Did I miss that earlier?

MR. MIKE ELLIOTT: Yes, that's my understanding. Certainly the Weston drainage survey characterization report from January 1996 does document that, I believe, the average enrichment that they were encountering was like 30 -- 34 percent. My understanding is that TI had some uranium sources, you know, that were weapons grade, which I was told was perhaps 90 percent, but, you know, I don't know enough about uranium to say what the percent -- but the -- the report that we have from Weston, the drainage survey report, definitely indicates that it was, you know, on average 30 -- they were finding 34 percent enriched uranium, and they -- and, you know, what Dr. Ulsh left out of his reason -- the explicit reason for this, you know, rushed effort to do the study was not just because we were worried about the workers, you know, who were still maintaining these -- these drains, but also we were worried about if we disturbed, you know, if we flushed the -- the sediments and the debris into a

-- you know, into a small area accumulated in a certain geometry, they were worried whether or not we might inadvertently cause a criticality event.

MEMBER ZIEMER: Brant, do you know or have any information about the U-335.

DR. ULSH: No. Pat, I'm going to put you on the spot again.

MR. MCCLOSKEY: Yes, Dr. Ziemer. We do have information. It's largely in the characterization document that Michael was just -- Mr. Elliott was just reading from. It was a site that manufactured fuel for the Navy for a lot of years, and also for HFIR. So, what -- what Michael might have been struggling with there was that the enrichments were different for HFIR and for -- and for the Navy, but there certainly was U-235, and there was depleted uranium. Those are the primary nuclides. Does that answer your question?

MEMBER ZIEMER: Yes, thank you.

DR. ROBERTS: Any other questions or comments from the Board? Okay. Hearing none, Josie, I'm not sure if you want to go ahead and make a motion at this point?

MEMBER BEACH: Yes, I would love to make a motion to grant -- well, now, let me go back to my slide just so I make it clearly. I went back to the recommendation of the work group that the SEC status be accorded to all atomic weapons employees who worked at Metals and Control Corp in Attleboro, Massachusetts during the period of January 1, 1968 through September 21, 1995. That would be my motion.

DR. ROBERTS: Okay. It doesn't have to be seconded. So, at this

point, just opening up to any final discussion.

MEMBER LOCKEY: Hey, Josie, can you hear me?

MEMBER BEACH: Yes.

MEMBER LOCKEY: And so, you know, I spent days reviewing all the extensive data your work group has done on this, and -- and, I guess, initially I -- as a (indiscernible) opinion, I think that NIOSH did have some basic data to do dose reconstruction --

MEMBER BEACH: Can you speak up? You're really faded.

MEMBER LOCKEY: I spent, as many people have, many hours --

MEMBER BEACH: Yeah.

MEMBER LOCKEY: -- reviewing the documents. And my initial opinion and my -- and still my opinion is, I think NIOSH does have enough information to do -- to do a claimant-friendly dose reconstruction. I always couch that in --in -- in the in the circumstances where workers are aware of what they're working with. And when that doesn't exist, then that really raises significant doubts regarding potential situations where there is an unrecognized exposure. If the workers not aware that there's a potential hazard, then he's not going to report that because he's not aware of it. And so, --

MEMBER BEACH: Or he's not going to be careful.

MEMBER LOCKEY: That's right. And so that -- that to me is something I can't get past. If the workers were aware that they were in -- working with potential hazard environment, then I think NIOSH's data justifies a dose --that they can do dose reconstruction, but I can see -- I've

been enough workplaces throughout the country that I know that workers better than anybody else knows when they're entering a potentially hazardous situation. And if they don't think it's hazardous, they're not going to report it. And so --

DR. ROBERTS: I'm sorry. I'm sorry, to interrupt, Jim. I just became aware that there's another petitioner who would like to comment. Daryl Hanlin. So, why don't you go ahead with your comment?

MR. HANLIN: Hi, can you hear me?

DR. ROBERTS: Yes.

MR. HANLIN: Okay. For some reason, I'm not able to do video. My name is Daryl Hanlin. I worked at Texas Instruments from 1977 to about 2002. I worked in facilities as an electrician and later, I worked as a construction services safety training facilitator. I also wrote standard operating procedures, and I covered a lot or pretty much most of the safety requirements from OSHA and others. We had a higher stress level, so to speak. We had to make sure, because of the environments the workers were exposed to, we had an intense training that we provided, and that was through John Elliott whom I worked directly for.

I want to address first, you were mentioning the coagulant. That was a couple of machines -- one was called -- I'll speak of the FX13, but there was another one called the Beckert. The coagulant was actually -- came in 55-gallon drums, and it was animal fat emulsion. And it had the -- the look of a can of lanolin for color, but it has a thicker consistency than pudding. It was very heavy. The FX13 used to draw wire through dies and reduce the

diameter. When it did that, it hardened the wire. So, there was an electrical kneeler on the --

MEMBER BEACH: Excuse me, Daryl, I don't mean to be rude and cut in. Are you a petitioner on the Metals and Control SEC? I'm an employee. I'm not --

MEMBER BEACH: Okay. Do -- do you mind, we're limiting your comments. I don't know how long you're planning on talking -- and I'm not trying to be rude. We're just getting towards the end of our day here.

MR. HANLIN: I got it. I'll be brief on that. But anyways, the animal --

MEMBER BEACH: Thank you. Okay.

MR. HANLIN: Okay, sorry. The material was fat that was used as a lubricant. They had an a kneeler on the wire and soften it. So, that heat that was created melted the animal fat, and then later after it cooled, it would thicken again. So, that would be some of the clog that you would get in the pipes.

I do want to say that we were never ever aware of any of the nuclear waste products that were -- we were exposed to. There was no warning signs on any wall or any floors or -- telling us of any penetration, that there was anything there whatsoever. I was tasked through John with training us and working with the -- the site safety department. We did trainings for everything, but we were never told that we had radioactive exposures that we had to train for or have any PPE available for.

I would ask if you have any questions of me now, it'd probably make it easier. But we were never -- I myself -- I think was in June of 2016. I was

with Mike Elliott at the -- when the event took place in, I think, the Holiday Inn in Providence Rhode Island, and I testified then that I -- I dug a trench from building 12 out toward, at that time, I turned to Mike Elliott. But I guess, I was digging in the actual main dump site of all the nuclear material. I was ever warned. There was no signs, and I was -- I dug up the old pipes and wire ways. They had lights shining on the United States flag, and I replaced them. So, I hand shoveled and digged and picked. I was never aware that I was exposed to anything. So, I mean, what kind of dose did I experienced, and there's others that dug in the -- in the same field for trenches --

MEMBER BEACH: Okay. Daryl, I'm -- and I know Rashaun's going to get me for -- for this, but if anybody has any questions of Daryl, can -- can we ask those questions now? And then continue with deliberations? It's unusual that we let another petitioner or another worker make comments at this time. And we do have a worker comment period, is that correct, Rashaun, that he could sign up for?

DR. ROBERTS: Yeah.

MEMBER BEACH: And we are in the middle of a motion, so --

MEMBER KOTELCHUCK: Yeah.

MEMBER BEACH: -- apologize for that, Daryl, but if you could hang on. At five o'clock we're going to have a worker comment, and we'd love to hear more of your -- your comments.

MR. HANLIN: Okay. Will do.

MEMBER ZIEMER: Josie, I have one more question.

MEMBER BEACH: Okay.

MEMBER ZIEMER: I can address this, I guess, either to Brant or to -- to you. When the -- when the residual period started, was the site declared a nonradiological area? I mean, for example, we know that postings are not required, in fact, you shouldn't put them up as radiation areas if you're below 5 millirem per hour. So, there wouldn't have been area posting signs, I wouldn't be think. Likewise, if there's not removable contamination, it would not ordinarily be posted. What -- what was the official status of the site at the beginning of the residual period?

MEMBER KOTELCHUCK: Can I answer to say that first -- I -- I -- the NRC made a ruling in 1983 that said that no -- no special conditions were needed to be taken care of, that -- that the place had been -- it was sufficiently clean, that they could function. And that was in '83. I don't know about '67 to '83 or I -- I'm not absolutely sure. I'm -- so, but I know in '83, as soon as they said that, that said you didn't have to worry about signs. You didn't have to worry about radiation. You could function like it was a regular non -- yeah -- nonradioactive site.

DR. ULSH: Yes, I think that's right. It was -- it was cleaned down to the level where control as a radiological material -- radiological area was not required. The measured external dose rates and the remaining contamination was lower than what would be required for a monitoring threshold to institute those kinds of radiological area controls.

MEMBER KOTELCHUCK: And there was not a radio -- there was no radiological health and safety person functioning from -- during the '83 to

'95 period.

DR. ULSH: I think --

MEMBER KOTELCHUCK: Earlier. There was good safety programs during the operational period -- health and safety. But --

DR. ULSH: Well, I think that's probably true --

MEMBER ZIEMER: Well, yeah, and --

DR. ULSH: -- because HFIR closed down, but, I don't know, Michael could probably speak to that.

MEMBER KOTELCHUCK: He could.

MEMBER ZIEMER: I -- I know that when we decommission labs at our facility and they're declared nonradiological areas and are available for general use, --

MEMBER KOTELCHUCK: Right.

MEMBER ZIEMER: -- they are not -- I mean, they're not radiation areas anymore, and that would be true if someone -- even if someone could later tear up something and find something underneath that was still radioactive, as long as it wasn't readily accessible. So, you have that -- that kind of an issue, I think, on this being the people -- it wasn't a radiological area, and that's why they -- they weren't told that it was a radiological area, or I assume that's the case. That's why I'm asking him about the earlier residual period.

DR. ULSH: Yes, that's my understanding as well. Yeah.

MEMBER LOCKEY: Well, I didn't -- I don't understand from '65 to '83, what about then?

MEMBER ZIEMER: That's what I was asking about.

DR. ULSH: from '65 to '83, the HFIR project was -- was ongoing, and I'm pretty certain that that area was controlled as -- you know, with -- with controlled access and whatnot, but the rest of the area was not.

MEMBER LOCKEY: And the rest of the --

MEMBER ZIEMER: But the point in which it was made a nonradiological area was after the NRC specified that it was not; is that correct?

DR. ULSH: I believe so.

MEMBER ZIEMER: Okay. Thank you.

MEMBER BEACH: Yeah.

MEMBER LOCKEY: So -- so, the non -- so, it wasn't -- the area from '65 to '83 was not classified as such; is that what I'm hearing?

DR. ULSH: Outside of the HFIR area, yes.

MEMBER LOCKEY: Okay.

MEMBER BEACH: Correct.

MEMBER ZIEMER: Now, I assume that OSHA regs would have still been in effect, and I'm surprised I heard one of the workers testimony -- I didn't hear it, I read it -- saying that they were in a trench and it was all -- they didn't have any respiratory protection. That should have been provided by OSHA in any event, but that's a separate issue.

DR. ULSH: Yeah.

MEMBER ZIEMER: Thank you.

DR. ROBERTS: Any other members of the Board want to ask

questions or way into the discussion?

DR. ROBERTS: Okay.

MEMBER CLAWSON: I'd like to call for a vote though.

DR. ROBERTS: Brad, okay. So, assuming, including people who haven't spoken much during the discussion, this is a last opportunity to weigh in. I don't think I see any hands raised. Is -- is someone trying to speak?

MEMBER BEACH: Loretta was having trouble speaking. I don't know that she had a comment, but she was just checking to see if we could hear her.

DR. ROBERTS: Okay. No, I -- I haven't heard her.

MEMBER BEACH: Okay.

DR. ROBERTS: Well, not hearing any comments, I think we can move forward, if it's agreeable -- oh, my hear -- I see a phone lighting up.

MEMBER VALERIO: Can you --

MEMBER BEACH: Oh, that's Loretta.

MEMBER VALERIO: -- me? It's Loretta.

MEMBER BEACH: Yes.

MEMBER KOTELCHUCK: Good.

MEMBER BEACH: Did you --

MEMBER VALERIO: Sorry, I had to jump into my car. I just wanted to -- I was actually going to make a motion to put this to a vote.

DR. ROBERTS: Okay.

MEMBER BEACH: Good. We're -- we are in a motion to vote, and

it's --

DR. ROBERTS: Yeah. It's already in a --

MEMBER BEACH: So, we're --

DR. ROBERTS: -- motion.

MEMBER BEACH: -- ready to vote.

DR. ROBERTS: Okay. All right. Well, if that's the case, I'm going to go ahead and do a voice --

MEMBER ZIEMER: Just a point of information, before we vote, I -- I know that one of the individuals had some additional comments that would come up in the public comment period. Would it be of value for us to hear those before we voted, or rather you rather --

MEMBER BEACH: I would say -- so, I would say no, in this case. Yeah.

MEMBER ZIEMER: Okay. It's your call.

DR. ROBERTS: Okay. Well, then I will go ahead, and I'll be doing an alphabetical order, except the chair will come last in the vote.

MEMBER BEACH: And the yes vote -- Rashaun, a yes vote is for an SEC, a no vote is against the SEC, correct?

DR. ROBERTS: Correct.

MEMBER KOTELCHUCK: Yeah.

DR. ROBERTS: So, starting with you, Josie?

MEMBER BEACH: Yes.

DR. ROBERTS: Clawson?

MEMBER CLAWSON: Yes.

DR. ROBERTS: Okay. Frank is out. Kotelchuck?

MEMBER KOTELCHUCK: Yes.

DR. ROBERTS: Lockey?

MEMBER LOCKEY: Yes.

DR. ROBERTS: Martinez?

MEMBER MARTINEZ: No.

DR. ROBERTS: Pompa?

MEMBER POMPA: Yes.

DR. ROBERTS: And Gen is -- is no longer on the line. Valerio?

MEMBER VALERIO: Yes.

DR. ROBERTS: And Ziemer?

MEMBER ZIEMER: No.

DR. ROBERTS: Okay.

MEMBER BEACH: I don't think you asked Andy?

DR. ROBERTS: Oh, and Andy, yes.

CHAIR ANDERSON: Yes. Yes.

DR. ROBERTS: Okay. Yes. Okay. So, I have a total of 1, 2, 3, 4, 5, 6, 7 yeses and two no. And I will need to follow up with Frank and with Gen for their votes online, so that is the result of the vote. But it appears at this juncture, that it's a vote yes majority.

MEMBER BEACH: Terrific, thank you everyone.

DR. ROBERTS: Yes. Thank you so much for the engagement and for the robust discussion. As I mentioned earlier, I will follow up with the two members who were absent, you know, for their votes. And I will also be in

touch shortly with drafts of the letter from the Board for everybody to weigh -- to weigh into and make recommendations. The final letter will be read into the public record in June, at the June teleconference.

MEMBER BEACH: Sounds --

DR. ROBERTS: -- good?

MEMBER BEACH: -- great.

DR. ROBERTS: Okay. We do have five minutes before the public comment session if people want to take a quick break and, like, maybe four minutes or so. I will need to do roll call one last time before the five o'clock session. CHAIR ANDERSON: And we'll postpone the Board action -- our work time until after the public meeting?

DR. ROBERTS: Correct. Yes, after the public comments, we'll go into the Board work session.

DR. ROBERTS: All right.

MEMBER LOCKEY: Rashaun?

DR. ROBERTS: Yes. Jim Lockey. I -- in all the data reviewed, I also reviewed Brady's letter that he sent the Board. And I spent a lot of time thinking about that letter, and I have some comments to make about that, but I don't know now's the appropriate time or when that is.

DR. ROBERTS: How about if we -- if we, you know, don't do that now, and just let people have a quick break, and then we'll come back at about a minute until. I just don't want the discussion to -- to bleed into the public comment session.

MEMBER LOCKEY: That's -- that's fine. Thank you.

DR. ROBERTS: Thank you.

MEMBER CLAWSON: Jim, we need to take a quick break.

MEMBER LOCKEY: Why? Why, Brad?

CHAIR ANDERSON: All right.

(Whereupon, a break was taken from 4:57 p.m. EDT until 5:00 p.m. EDT.)

DR. ROBERTS: Okay. I have 5:00 p.m. Eastern, so I'm going to go ahead and do a quick and final roll call. Anderson?

CHAIR ANDERSON: Present.

DR. ROBERTS: Beach? Josie, are you back?

DR. ROBERTS: Clawson?

MEMBER CLAWSON: Here.

DR. ROBERTS: Kotelchuck? Lockey?

MEMBER LOCKEY: Here.

DR. ROBERTS: Martinez?

MEMBER MARTINEZ: Here.

DR. ROBERTS: Pompa?

MEMBER POMPA: Here.

DR. ROBERTS: Okay. And Roessler's still out. Valerio? Ziemer?

MEMBER ZIEMER: Here.

DR. ROBERTS: Beach, have you rejoined? Okay. Give them a minute or so.

CHAIR ANDERSON: Rashaun, do you know how many public speakers we have?

DR. ROBERTS: I have some idea. I would like -- I think that Mr. Hanlin needs to be given an opportunity to finish his statement because he was cut off, and Dr. DeGarmo has asked for some time.

CHAIR ANDERSON: Yes.

DR. ROBERTS: Okay. Beach, are you back?

DR. DEGARMO: Dr. Roberts, I hate to interrupt, but I would be willing to let Mr. Hanlin go first. I don't know where I am on the schedule, but he certainly could take my time if I am first or go before me in whatever capacity.

DR. ROBERTS: Okay. Very generous, thank you.

MS. HAND: This is Donna Hand. I'd also like to speak publicly.

DR. ROBERTS: Okay. Okay. So, checking back, Josie, have you rejoined?

MEMBER BEACH: I have, sorry about that.

DR. ROBERTS: Okay. Kotelchuck?

CHAIR ANDERSON: You're on mute.

MEMBER KOTELCHUCK: Here. I said here before. I must have --

DR. ROBERTS: Oh, I didn't -- I didn't hear you. Sorry.

MEMBER KOTELCHUCK: Oh, I had it on mute. Sorry.

DR. ROBERTS: Okay. And Valerio, are you back?

DR. ROBERTS: Okay. I think we -- we have a quorum, so we can go ahead and get started. Andy, over to you.

PUBLIC COMMENTS

CHAIR ANDERSON: Okay. Let's open the public comment session. And who did you say was first?

DR. ROBERTS: Mr. Hanlin.

CHAIR ANDERSON: Mr. Hanlin, are you still there?

MEMBER VALERIO: I'm sorry, Rashaun, this is Loretta. I'm back, yes.

CHAIR ANDERSON: Okay. Mr. Hanlin? Well, should we have Dr. DeGarmo speak and call for him again?

DR. ROBERTS: Sure.

CHAIR ANDERSON: Okay. Dr. DeGarmo, you're on.

DR. DEGARMO: I'm not sure if you can see me, but hopefully you'll be able to -- to hear me. First,

CHAIR ANDERSON: (Indiscernible) --

DR. DEGARMO: Pardon me?

CHAIR ANDERSON: We see your as well.

DR. DEGARMO: Okay. I first want to -- to extend my gratitude to the work group, to the Board, and to Mr. Elliott for all of their hard work on this SEC. We definitely appreciate that you all made the right decision.

But now, on to SEC-256 Pinellas Plant. I want you to know that I've been involved with EEOICPA and the SEC process since 2006. I had the honor of conducting research on the Dow Madison, Illinois SEC for former Senator Barack Obama in Congress --

MR. HANLIN: I'm trying to speak again, but un --

DR. DEGARMO: Excuse me?

DR. ROBERTS: I'm sorry, Mr. Hanlin, we've gone ahead and let Dr. DeGarmo go, so -- so you can come after, if you don't mind.

MR. HANLIN: All right. Thank you.

DR. ROBERTS: Thank you.

DR. DEGARMO: I had the honor of conducting research on the Dow Madison, Illinois SEC for former Senator Barack Obama, and Congress person John Shimkus a very, very long time ago. And, in fact, I met very many of you and -- during that time period. It was while I was conducting this research I had my first introduction to NIOSH. And after many discussions, Larry Elliott invited me and my two research assistants to Cincinnati. Over the course of a couple of days, we learned about latency models, SECs, and most importantly, we were personally instructed on the art of dose reconstruction by Jim Neaten (ph). I remember that despite our differing views regarding the Dow SEC, the atmosphere was cordial, respectful, transparent during all our long discussions about the new evidence that we had submitted to NIOSH regarding Dow.

These are the recollections I shared with those former employees when I decided to write petition 00256. We are disappointed to find that this is no longer an appropriate characterization of NIOSH, and it was certainly on display today. DCAS and NIOSH employees associated with the Pinellas Plant petition have found refuge in their offices in Cincinnati and have refused to engage with new evidence, refused to engage with, what I consider, my family of Pinellas Plant workers. You made your way to Pinellas (indiscernible), but given this petition is approaching its five-year

anniversary from its first submission, this is unacceptable. But let us not forget, seven petitions were filed before.

I asked NIOSH -- well, I asked all of you, to hold the upcoming work group meeting for Pinellas in Pinellas. I asked NIOSH and DCAS to hold face-to-face interviews in Pinellas. They said this was not necessary because they had enough information. How can you honestly say that when in December 2020, you only interviewed five workers out of the numerous names provided to you. Even worse, you told these five workers to exercise judgment in your answers. This is a quote. This project is based on working with unclassified information. What? No security clearances were reactivated? This is so problematic I can't even get into it at this moment. May I remind you that this program is for the former nuclear weapons workers. NIOSH you missed a critical opportunity to gather more information, especially in regard to RTGs, the handling of plutonium, and so much other information regarding classified research and development projects at Pinellas.

As you are aware I just submitted a very long document to illustrate all of the crucial contributions Pinellas made to the nuclear weapons complex. Workers felt that you disrespected them. You disrespected their experiences and their willingness to give input to all things Pinellas. I think you need to take a vacation from your glass houses in Cincinnati and come to Florida. The Pinellas workers deserve more from you. You need to meet them face to face and show them they are more important than a probability statistic. You owe them this. By avoiding face-to-face interactions with

Pinellas Workers, you delegitimize them. In closing, I promised that I would ask you, NIOSH, ORAUT, and DCAS, on behalf of several of the workers the following question, quote: Since we have lost so many nuclear heroes, especially since January of 2024, and you refuse to engage and acknowledge us, what is your purpose? Are you waiting until we all die, so we die without vindication of the sacrifices we have made to keep this country safe? On behalf of myself and those who would be covered by this petition, I thank you for the opportunity to express our concerns and our thoughts.

CHAIR ANDERSON: I want to thank you very much, Dr. DeGarmo, for your words this afternoon and for staying in there for the whole day with us and listening through the other sites. But we appreciate it, and we will be working on subsequent sites, and we're going to talk a little later about where we will be meeting next. There's issues with getting locations in there.

So, let's go back to Dr. Hanlin. I see you there. So, --

DR. ROBERTS: Andy, he was experiencing a delay. He -- he --

CHAIR ANDERSON: Oh, there he is. I see you.

DR. ROBERTS: Okay. (Indiscernible) --

MEMBER KOTELCHUCK: All right. Okay. Good.

CHAIR ANDERSON: Thank you.

MR. HANLIN: I apologize. Now I'm not -- I'm not hearing very well.

CHAIR ANDERSON: Can you hear us?

MR. HANLIN: Okay. So, can everyone hear me?

CHAIR ANDERSON: Yes.

MEMBER KOTELCHUCK: Yes.

MR. HANLIN: Okay. Thank you.

MEMBER BEACH: Yes.

MR. HANLIN: So, I wanted to touch on the fact that -- not to go over everything again, but in -- and during my testimony in 2016 in June, I explained that I was a construction safety training facilitator, and I left my contact information with -- behind at the desk for it to be available to be interviewed, and I have requested several times to be interviewed because I'm very familiar with the site and many of the manufacturing operations to which we were all exposed. We -- for instance, there was a -- when we built the Texas Instruments Credit Union on the far end of the site on Pleasant Street, we pulled cables from building one, which went underground in building 10, and then we traveled underground to manholes. And we were -- we hit groundwater that we had to pump out. We were always working wet. So, the water was contaminated. It was soil, it was, you know, black. It was just -- just contaminated groundwater.

But I'm just saying, if anyone wants to interview me, I can get together a group of the former employees, which I'm in contact with so you have a better understanding of the kind of work that went on. That's all I had to say.

MEMBER KOTELCHUCK: Okay.

CHAIR ANDERSON: Thank you very much. And then we had one other individual?

DR. ROBERTS: Yes. It was Ms. Donna Hand.

CHAIR ANDERSON: Oh, Donna. Okay.

MS. HAND: Thank you very much. This is Donna Hand speaking. I just want to bring in some -- some notices and comments, as well as for the Board to look into, is that we are going into the weeds and forgetting about the trees. Because the 42 USC 73.84 (a)(6) states -- this is a congressional finding in this Act, furthermore, studies indicated that 98 percent of radiation induced cancers within the nuclear weapons complex have occurred at dose levels below existing maximum state thresholds. So, using a regulation to determine if we're going to give a dose or not because it was lower and so that -- that's not a congressional finding. You know, so that is against what congressional intent is. And even in the preamble of the HHS on the 42 CFRs, they have stated this is not to do with new regulation. This is to capture the radio -- the occupational radio environment for the worker.

In public law 107-107, which was in 12-28-2001, the 42 USC 7384 was noted that the study of residual contamination of facilities that NIOSH shall carry out a study of the following matters: whether or not significant contamination remains in any atomic weapons employer facility. And if so, whether or not such contamination could have caused, substantially contributed to the cancer of a covered employees with cancer. So, again, if you can't determine what was the requisite -- residual or not and everything, you're to go ahead and put that in there into the -- you know, you have to go ahead and do that dose reconstruction.

And in the -- let's see. In March 13, 1997, the NRC did a site decommissioning management plan for the Metals and Controls, which is

Texas Instruments. And from 1965 through 1981, Texas Instruments fabricated fuel for the high flux isotope reactor at Oak Ridge National Laboratory and other government-owned resort -- research reactors. Depleted uranium and processed natural uranium were also used. Then in building four, limited operations in building three, building 10, waste handling, materials recovery areas stockade, the waste evaporator and incinerators in building five, scrap and waste generated in the manufacturing process were returned to the US government, and then the low levels of radioactivity was disposed on site on the barrel adjacent to building 11.

So, it all continued up into 1981. In 1990, NRC listed the Texas Instruments facility on the Nuclear Regulatory Commission's site decommission management plan because of the presence of residual contamination in the burial area. So, again, to -- to eliminate a certain years or not to recognize, you know, documented information, that's -- you know, you're forgetting the trees. You know, this contradicts what -- everything that NIOSH just said but confirms what the work group was saying. And again, this hasn't happened just for this site. This is happening in all the sites.

In Pinellas Plant, okay, there was Q clearance given back to several of the claimants, and they did have a conference, and it's -- and an interview. And I think that was done in January of 2016. It was never -- it was already redacted by DOE, but it was never given to the public or produced on any of the websites or even in any information to the stakeholders. You also have the Pinellas Plants where they have five different metals tritides. One of

them is classified; however, when I keep on asking the Board, can you -- is the scientific validation of the metal tritide dose correct for the Pinellas Plant workers, I keep on getting an answer from Grady Calhoun. He does not have that authority underneath the Act. The Act says that it is the Board's authority to determine if it's scientifically valid.

So again, you know, look back into the law and the regulations, which is 42 USC 7384. Then you've got 42 CFR 81, 42 CFR 82, and then 42 CFR 83. And those plain language of those laws trumps the policy and procedures of your technical information bulletins. Thank you.

BOARD WORK SESSION

CHAIR ANDERSON: Thank you. Are there any other public commenters? I guess, not so we'll go to our delayed board work session. And I want to begin -- and Jim, I will let you speak second here. I want to introduce everybody to Ms. Holsberger who is our new legal assistant in all of this, and new member of our general team here. And she's been sitting in all day today. And you've already gotten -- I hope you've had a chance to read her little, short bio. But I thought we'd give her a little chance to say a few words to us as well. So, Maliah (ph)? There she is.

MS. HOLSBERGER: Hi, everyone. My name is Maliah (ph) Holsberger. I'm the new attorney (indiscernible). And I will primarily be providing advice on (audio break), and I'm very excited that I get the chance to (audio break) you all with the (audio break) work that you do, and I want to thank everyone for their kindness and their (audio break) in bring me up to speed

in my role (audio break) position. That's all for me. Thank you.

CHAIR ANDERSON: All as you saw from her review, she comes with a great background. And for those of us in occupational medicine, she's one of those that has handled a number of the federal lawsuits regarding to occupational safety and health, so she's got quite a bit of experience. And we really look forward to interacting with her and getting her advice and having her keep us on the straight and narrow.

So, Jim you want to comment?

MEMBER LOCKEY: Well, it's not so much your comment, Andy, and I don't know if this appropriate this time or not. But going through all this data was informative. There's no question about it. And I include that, the letter written by Grady Calhoun to the Board. And so, when I went through that letter, it -- the -- the transparency issue came up for me. And so, I -- I took some time and sat down and wrote a little presentation here. It shouldn't take more than five minutes that -- that I like to put it in the records and maybe the Board can discuss -- discuss where I was going with this.

MEMBER KOTELCHUCK: Can we -- can we just welcome Maliah, some of us just from the Board? Just welcome, welcome. I look forward to working.

CHAIR ANDERSON: Go ahead, Jim. I think --

MEMBER LOCKEY: Okay. So, let me make sure everybody can hear me. For those who maybe not know my background, but by the way of my background, I was reminded through my recent recruitment to review chest

films of nuclear production workers for pneumoconiosis, which I think Andy can relate to. My history with these various covered facilities, in particular, Y-12 and K-25 resurrected itself from my -- for me. From 1996 to 2000, myself and [identifying information redacted] very comprehensively evaluated 6 -- 60 workers over a four-year period of time from the K-25 and Y-12 facilities. And we did determined at that time -- and this was a government contract -- we -- we determined at that time that we could not reliably either from a qualitative or quantitative perspective reconstruct occupational exposures in the workers we evaluated. And I think results of this study and the outcomes of the Fernald lawsuit that was, in part, supported by Dr. Melius, helped inform the 20,000 energy employee (indiscernible) compensation program that was administered during the end of the Clinton administration.

It's stipulated in our charter that we received prior to this -- this meeting and this descriptions of duties and my tenure on this committee, I wanted to comment on my perspective. And I think looking at a duty of addressing scientific validity and quality of dose reconstruction, I think the Board and NIOSH and SC&A, in my opinion, have done an outstanding job in regard to meeting this duty. I think -- I think everybody who has been involved in that would -- would concur with me.

In regard to SEC evaluations as -- as applies to the more historical time frames and locations that we've dealt with in the past years, it again is my opinion that the Board and NIOSH and SC&A have strived to reach consensus opinions where there was inadequate information to scientifically

validate dose reconstruction. So now, you know, I'm getting older. Andy, you're getting older. A lot of Board members are getting older. And as we enter this more contemporary period for nuclear -- nuclear production facilities, it becomes important in my view point to take under advisement one of the things outlined in our charter, and that is, quote, Is there a reasonable likelihood that such radiation dose may be -- may have endanger the health of the members of the class, end quote. I think this becomes more pertinent during these more contemporary time periods when exposure levels may be low or very low or well below the occupational exposure thresholds that -- that are federally mandated.

The Board, NIOSH, and SC&A's transparency has to be maintained. I think it's critical that that happens. When I reviewed Grady Calhoun's recent letter to the Board, it is not clear that this transparency has been maintained based on the change in the SC&A position over the -- from the 2021 to the 2022 or '23 time period. And the lack of corresponding board transcripts that resulted in SC&A's readdressing their position. That -- that is hard to explain. The Board, NIOSH, and SC&A have to maintain transparency to maintain the historic integrity of pass -- of past Board functions. This becomes more critical when evaluating the more contemporary production time periods where there is corresponding generally and general lower and better controlled monitored exposure data. For me, it would be helpful to -- for me to revisit this transparency guidelines in regard to Board activities and in regard to personal communications regarding specific Board issues with other Board members or staff or NIOSH or staff at SC&A or outside

interested groups. The guidelines regarding transparency, for me, are blurred. And perhaps resetting the stage as to what that means to Board members would provide -- would really provide clarity.

I understand perfectly well the conflict of interest issue. The transparency issue and what is permissible and what's not permissible from a transparency perspective, I think, needs to be clarified. That's all I have, Andy.

CHAIR ANDERSON: Okay. Thanks. Thanks a lot. Okay. We now go into -- we got a few other things we're going to pass over asking all of the committee's to -- work groups to speak. We got as part of our distribution of documents a very nice review of all the various sites that we've dealt with and the time frames and what's going on. So, if you're interested in some of the other sites, we'll postpone further until June for some discussion of those, but we do need a look at our next meeting. And I'll turn it over to Rashaun to talk about August and our other -- we have the teleconference coming up June 26th, which we will have a chance to enter the letters or the letter for M&C site at that time, so please -- June doesn't seem that far away, so be sure when we circulate that letter, you take a look at it. If you don't see any things you want to edit, please pass them along so we can finalize it and read it into the record in June. We then have the meeting in August coming up. It's -- and then a teleconference in October and another in December. And I seem to recall in our last meeting talking about where we might go for a face to face. We have gotten some correspondence from individuals, especially in the public and the workers. They really would like

to see us in person, have an opportunity at various sites, so we really need to begin to look at locking down a new site. There's some difficulties with the travel expenses and things, but I think we really need to get back together face to face and maybe look at August as a time to do that.

Rashaun?

DR. ROBERTS: Yes, Andy. So, the August meeting right now, we've -- we've got August 7th and 8th on hold for a possible in-person meeting. And so, I just want to throw it out to the Board to see if there are locations where -- where you would like to have that meeting, assuming that that most people will be able to travel and attend -- attend. So, are there any candidates for location that you would like to offer?

MEMBER BEACH: Rashaun, can I throw Pinellas out as a possible site? I think that's in Florida. Or is that too soon?

DR. ROBERTS: I think it would be -- it's unusual to have, you know, another meeting in such close proximity, but, you know, it's -- it's up to the Board to decide. Are there any other candidates?

MEMBER BEACH: What about INL? Where are we at with them? I know we've been there a few times.

DR. ROBERTS: So, that's Idaho Falls?

MEMBER BEACH: Yes.

DR. ROBERTS: Okay.

MEMBER CLAWSON: There won't be any snow by then?

MEMBER KOTELCHUCK: Yeah.

CHAIR ANDERSON: Or we could go to Tennessee.

(Whereupon, Member Beach and Dr. Roberts spoke simultaneously.)

DR. ROBERTS: I'm sorry.

MEMBER BEACH: When's the last -- oh, I'm sorry, I keep --

DR. ROBERTS: Would that be Knoxville, Tennessee?

CHAIR ANDERSON: Yeah.

DR. ROBERTS: Okay.

MEMBER BEACH: Another thought would be up at LANL, up in that area.

DR. ROBERTS: Do you know where that is? I'm sorry, I don't know that off the top of my head.

MEMBER BEACH: Albuquerque area. We usually fly into there and then go up.

MEMBER POMPA: It's north of Albuquerque, if I remember correctly, Josie.

MEMBER BEACH: Yeah, it is a little north. You have to fly in, but.

MEMBER CLAWSON: It is. It's -- it's about a 40-mile drive.

DR. ROBERTS: Okay. Any other candidates?

MEMBER CLAWSON: Hanford. I'm supposed to be having some reports from some people on that. We've been waiting for over four years now.

DR. ROBERTS: Okay. What about Carborundum? That's in Niagara Falls, New York. Would that be a possibility?

MEMBER BEACH: I don't think we've been there for a long time.

CHAIR ANDERSON: No.

MEMBER KOTELCHUCK: Right, right.

DR. ROBERTS: Okay.

CHAIR ANDERSON: That's one we have active review, so.

MEMBER KOTELCHUCK: Yeah.

CHAIR ANDERSON: It's in the middle of the country.

DR. ROBERTS: Okay. So --

CHAIR ANDERSON: But you may find trouble with hotels in August.

DR. ROBERTS: Okay.

MEMBER KOTELCHUCK: Can I -- is it fair to say that so little hot in Florida in August?

CHAIR ANDERSON: Right.

MEMBER KOTELCHUCK: I know We're going to be meeting inside rooms that will be air conditioned, but.

DR. ROBERTS: Okay. So, the candidates so far are Pinellas, Florida; Idaho Falls; Knoxville; Albuquerque; and Niagara Falls. So does -- do people feel strongly about one place or another out of those?

MEMBER ZIEMER: Which of those do we have something most active that would be of interest to the local workers?

MEMBER CLAWSON: Well, Paul, let -- let me -- let me ask this, Chuck, are you still on the line?

MR. NELSON: Yes.

MEMBER CLAWSON: Are we going to have anything for Hanford? It's been several years, and I'm getting a lot of slack (sic) because of it.

MR. NELSON: I can't tell you that we will to be sure -- to be honest. I

know we're working with the site to get some data, and we've got part of it, but we don't have all of it. And it takes a while to put the coexposure all the way together.

MEMBER CLAWSON: Well, we're just -- we're going on -- well, last time we met was '21, so okay.

DR. TAULBEE: This is Tim. I do know that Megan Loubaugh (ph) and Dr. Roessler have been in communication about INL this week, and I know that Dr. Roessler is planning to reach out to you, Rashaun, about scheduling a work group. So, I do know there is active work that is currently going on there, and -- and they will be looking for a work group meeting. Now, whether that's before this Board meeting or not or shortly thereafter, I don't know. But there is work for INL, and there could be effort to be gained by meeting out there.

DR. ROBERTS: Thank you. Okay. Thoughts about Idaho Falls?

MEMBER CLAWSON: I think it's a marvelous place.

DR. ROBERTS: You're just a little biased, right?

MEMBER CLAWSON: But I'm -- I'm conflicted on it, so I can't mention that.

DR. ROBERTS: Any other thoughts about Idaho Falls?

CHAIR ANDERSON: That seems fine. You could look into what we could do for rooms.

MEMBER LOCKEY: I'll stay at Brad's house.

MEMBER CLAWSON: I got sleeping bags. Come on.

(Whereupon, several members speak simultaneously.)

DR. ROBERTS: Would there be any -- does anybody object to Idaho Falls?

MEMBER BEACH: No.

MEMBER VALERIO: No.

MEMBER MARTINEZ: I don't.

MEMBER BEACH: Or any of the listed ones.

DR. ROBERTS: Okay. Does somebody want to promote an alternative, or are we good with Idaho Falls?

MEMBER MARTINEZ: Do they have an airport? We don't have to drive 40 miles through a blizzard like in New Mexico?

(Whereupon, multiple members speak simultaneously.)

MEMBER ZIEMER: It's not that easy to get to. It's not that easy to get to.

CHAIR ANDERSON: Sure, it's open two days a week.

MEMBER CLAWSON: Hey, you guys, come on now, it's a nice place.

CHAIR ANDERSON: We could fly in, yeah.

MEMBER ZIEMER: What's the status of Argonne West? And --

CHAIR ANDERSON: Yeah.

DR. ROBERTS: I thought I saw some activity there. Tim, can -- can you speak to that?

DR. TAULBEE: Yes. What we have submitted to the work group is, I believe it's called, Report 89, and it's the first use of the BZGA sampling methodology, and it's for Argonne West. And that's what the work group will be discussing. And so, you know, we could give a presentation and

overview to you all about that particular report.

DR. ROBERTS: And this --

DR. TAULBEE: I mean, the plan is to give it to the work group first, obviously, but Megan could definitely give an update as to, kind of, the status of the Argonne West and INL SECs.

DR. ROBERTS: And so, are we talking about Argonne, Illinois?

MEMBER ZIEMER: No, no, Argonne West is in Idaho.

DR. ROBERTS: Oh, it's in Idaho, okay.

MEMBER ZIEMER: Yeah. So, you have both the Idaho INL and Argonne West both there at that location.

DR. ROBERTS: Okay. Great. So, it sounds like -- and anyone can object, if this is wrong, but it sounds like people are okay with Idaho, Idaho Falls in August?

CHAIR ANDERSON: Yep.

MEMBER KOTELCHUCK: Yeah.

DR. ROBERTS: Okay. Then we will go with that. Let's see, there are just a couple of meetings we probably need to get on the calendar to get -- to be a year out. So, why don't I go ahead and see if we can identify some dates now. We need to schedule a teleconference for February of next year. Great. I'm frozen out of my calendar. Typically we -- we've done the February meeting like in middle of February. Would that be a good time for folks?

MEMBER ZIEMER: Good for me.

MEMBER POMPA: That's fine with me.

MEMBER KOTELCHUCK: Yeah.

DR. ROBERTS: So, we're maybe the week -- the week of February 9th to the 15th, you know, either Tuesday, Wednesday, Thursday. Is there any particular preference, the 11th, 12th, or 13th?

MEMBER MARTINEZ: Wednesday's are typically better for me of those options.

DR. ROBERTS: Okay.

MEMBER BEACH: Same with me. Wednesdays are better.

DR. ROBERTS: Okay. Is everybody good with then February 12th, which is a Wednesday?

CHAIR ANDERSON: Sure.

MEMBER ZIEMER: Yes.

MR. CALHOUN: That's great for me.

MEMBER ZIEMER: That's teleconference, right?

DR. ROBERTS: Yeah, it's just a teleconference, correct.

MEMBER CLAWSON: Let's see, Grady is that because you're retired?

MR. CALHOUN: Yes, sir.

MEMBER BEACH: Good one, Grady.

DR. ROBERTS: Yeah, that's a good one. Okay. Okay. So, moving on to April of 2025, which could be a virtual meeting, but -- or it could be in person. Typically, I believe, we've done something near the end of the month, so any preferences there? Are people not available, are available? Let's call it the week of the 20th.

MEMBER CLAWSON: What month was this?

DR. ROBERTS: This will be April of next year. And it could -- it could be a face to face.

MEMBER MARTINEZ: Wednesday's are still better for me, but -- unless it's face to face, in which case, closer to the weekend is better on either end.

DR. ROBERTS: Okay.

MEMBER BEACH: I like Friday, the 25th, if that works.

MEMBER MARTINEZ: Yeah, I think people had -- I'm not sure how people feel traveling for the -- the weekend, their weekends.

CHAIR ANDERSON: Give them a day to fly back.

DR. ROBERTS: Yeah, maybe looking at that Wednesday/Thursday, the 23rd and 24th. I think we talked about letting people travel on Tuesday, then meet on Wednesday/Thursday. Could that work?

MEMBER BEACH: Sure.

DR. ROBERTS: Okay. So, April 23 and 24. And yeah, so that's all. I think we're booked out for the year. So, we're good to go there. Andy, we are scheduled until six o'clock. Did we want to try to go through the work group reports and try to do more of the Board work session bullets?

CHAIR ANDERSON: Sure.

DR. ROBERTS: Okay.

CHAIR ANDERSON: So, -- yeah.

DR. ROBERTS: I could start if you'd like. Gen left me an update, so I can do that on her behalf.

CHAIR ANDERSON: Oh, great.

DR. ROBERTS: And she wanted me to mention that in regards to

ORNL, work is still ongoing by NIOSH to capture data to address the iodine dose reconstruction approach. Also, NIOSH is evaluating SC&A's response to the exotic --

(Whereupon, there was interference from a member's background noise.)

DR. ROBERTS: -- report. And if people could, go on mute, please. And that's all I have from Gen, Andy.

CHAIR ANDERSON: Any other committees? We had a -- Brad, did you have a meeting coming up?

MEMBER CLAWSON: Yeah, I do. I've got a Pinellas meeting coming up. I also have a Savannah River meeting that is going to be coming up. I am going to want to start working on -- I want to do worker outreach at Pinellas. I think with the information that has come in, I want to be able to get down there and research some of this information that Dr. DeGarmo has given us. So, I'd like be -- start working on that with NIOSH as soon as possible. But I think -- I think also all of us are feeling -- we've kind of hit kind of a -- we don't have that much coming out. And I know with -- with Hanford, we're -- Chuck I -- he's sent me updates every -- every meeting, and we're just proceeding forward, but old -- also are Argonne East, we need to kind of get off dead center and get -- get going on some of these. We need to -- we've got to -- we've got to see what we need to be able to do to help get this going a little bit more, just gonna be brutally honest. It's -- we're -- we're behind. I know there's a lot of things that play into it, but we've got to get off dead center.

MEMBER KOTELCHUCK: Well, the dose reconstruction review subcommittee is off of dead center. We're going to meet on Tuesday, June 4, and we're finally getting to start a new set. So, I hope we're turning the corner.

CHAIR ANDERSON: Others? Paul, are we having one for 6000?

MEMBER ZIEMER: Just looking at the calendar, I think we got Superior Steel coming. I'm just looking for the schedule on that. Let's see. Maybe -- maybe -- Rashaun, -- yeah, Rashaun, can you help us on this, or do you show Superior Steel? I'm looking it up, but I'm not finding it right away. Or Megan -- Megan Loughbaugh (ph) may -- are you on the phone or on the call?

DR. TAULBEE: This is Tim. I don't think Megan is on the call. But in the -- in the email update, we are still working on the site profile for that particular site, and, you know, once we get that done, then -- then you can --

MEMBER ZIEMER: Yeah, yeah, --

DR. TAULBEE: -- call to discuss it, --

MEMBER ZIEMER: Yeah, I just --

DR. TAULBEE: -- but we're not ready yet.

MEMBER ZIEMER: I just found the email from Megan, yeah, she said wasn't ready for that yet, but that -- that'll be coming up.

MEMBER BEACH: Well, and Andy, I can say a little bit. Although, I don't have it in front of me for LANL, if you recall, we are working on three report -- reports that got combined into one. I think that is getting close to

being released from SC&A. It's -- it's in the review process, and I think we just got something from Brant, although I didn't go look at it, because I was tied up with M&C, so. But I'm hoping that we will be able to schedule a work group meeting for LANL in the near future, hopefully this summer.

CHAIR ANDERSON: Okay.

MEMBER BEACH: Unless somebody else has some more information on LANL that I'm not -- I don't know how long NIOSH is going to need to look at that report when it comes out. It's going to be 100 pages, so.

MR. BARTON: Yeah, hi. Hi, Josie. I can probably --

MEMBER BEACH: Oh, thanks, Bob.

MR. BARTON: -- a little bit. You all should have the non-PA cleared version of our review, because it passed all the classification hurdles.

MEMBER BEACH: Yes. I'm sorry, you're correct. We do have that, or I have that. So, thanks for reminding me.

MR. BARTON: We're working on getting it cleared for public release which, because of the size of the report and the number of quotes and working with OGC on any potential redactions, which I don't think there will be any, we're probably looking to get that cleared for public release problem -- probably towards the end of May, but you all have the not PA cleared version of it. So, we're just trying to clear the public version of it.

DR. ULSH: I don't -- this is Brant. That's -- LANL is another one of my sites, and Bob, it's not ringing a bell. I don't think NIOSH has it, at least, unless I've missed it.

DR. TAULBEE: Yes, we did get it. You may have not been on the

distribution, Brant. We got it last Friday.

DR. ULSH: Well, like Josie, I've been tied up on M&C, so I could've easily missed it.

MR. BARTON: Sorry, about that Brant.

DR. ULSH: No, no, no, it's no problem.

MEMBER CLAWSON: I'm going to tell you Brant, it's a big facility, real big. It kind of sits up --

DR. ULSH: Sorry, 40 miles north of Albuquerque, lots of blizzards?

MEMBER CLAWSON: Yeah.

CHAIR ANDERSON: No, it's dust storms up there. Other committees, work groups? I think those are the ones on my list, so.

MEMBER BEACH: I can say we have a procedures meeting in July, as we try to have them every four to five months. So, we do have one scheduled, and we're going to continue on the path that we have been on.

CHAIR ANDERSON: Okay. Any other issues?

DR. ROBERTS: So, Andy, if there aren't any more reports, I can quickly go over the December public comments.

CHAIR ANDERSON: Oh, yeah, right. I got those. Okay. Go ahead.

DR. ROBERTS: So, just -- just to summarize. All comments during the public common -- comment session at the December Board meeting were related to Pinellas. There were concerns about DOEs, DOLs, the Board's, SC&A's and DCAS' level of knowledge about Pinellas, and there was a request for the Pinellas work group to really work on expanding its knowledge through comprehensive review of documents submitted by the

petitioner or petitioner representative and through conducting employee interviews. NIOSH's evaluation report, SC&A's interim report, and additional information submitted to the Board by the petitioners' rep as well as recommendations to conduct employee interviews are currently under the Pinellas work groups' consideration. And that's all I have on that front.

Let's see. I feel like there's a couple of quick reminders that I wanted to cover, too. I wanted to just bring to everyone's attention -- and you should know this because I circulated it -- but the Board has a new charter. It was renewed on March 22nd, and it will be in effect until September of next year. Also, Board members and others may be due for security awareness training. That training is due in -- in June of 2024. And being up to date on the training allows you to keep your access to the CDC network. So, unless you took the training after June 2023, you will need to have -- to do that training again, and that's a mandatory course. So, I just wanted to remind people about that.

And Andy, I think that's all I have.

MEMBER VALERIO: Rashaun, this is Loretta.

CHAIR ANDERSON: Go ahead, Loretta.

MEMBER VALERIO: You said that was the security awareness training?

DR. ROBERTS: Yes.

MEMBER VALERIO: Okay. All right. Got it done, thank you.

MEMBER BEACH: Rashaun, can I ask you a question on smart cards? I heard a rumor that we were all supposed to get new smart cards coming up. Is that true or not, or just when ours expire?

DR. ROBERTS: I think it's still whenever it's -- whenever yours expires. I haven't heard that that's --

MEMBER BEACH: Okay.

MEMBER KOTELCHUCK: I -- I got mine last week, and --

MEMBER BEACH: (Indiscernible.)

MEMBER KOTELCHUCK: -- it's just as it always has been.

DR. ROBERTS: Yeah.

MEMBER KOTELCHUCK: (Indiscernible) --

MEMBER LOCKEY: Rashaun, Jim Lockey. I put in my request for appointment, but I haven't heard anything back, so I don't know what that means. You may want to circle back around, yeah, and try to reach out again.

MEMBER LOCKEY: Okay.

DR. ROBERTS: But yeah, just talk with me offline if you still have a problem.

MEMBER LOCKEY: Okay.

DR. ROBERTS: Okay. Anything else?

CHAIR ANDERSON: I can't think of anything, so time for dinner here.

MEMBER KOTELCHUCK: Yeah.

CHAIR ANDERSON: Okay. Any other comments people want to make? I want to thank everybody for participating here. We got a lot done, and we got a lot more on our plate now.

MEMBER CLAWSON: So, sounds good. Motion to adjourn?

CHAIR ANDERSON: Okay.

MEMBER KOTELCHUCK: So moved.

MEMBER ZIEMER: Second.

CHAIR ANDERSON: Second, all right. If anyone objects, speak up.

MEMBER KOTELCHUCK: Okay. Bye.

(Whereupon, the meeting was adjourned at 5:54 p.m. EDT.)