United States of America
Centers for Disease Control
National Institute for Occupational Safety and Health
Advisory Board on Radiation and Worker Health
126th Meeting
Wednesday, December 12, 2018

The meeting convened at 8:30 a.m. Pacific Time at the Crowne Plaza Redondo Beach & Marina, 300 North Harbor Drive, Redondo Beach, California, Ted Katz, Designated Federal Official, presiding.

Present:

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

Registered And/Or Public Comment Participants:

Ted Katz, Designated Federal Official
Barton, Bob, SC&A
Barrie, Terrie*
Blaze, D'Lanie
Burgos, Zaida, NIOSH
Calhoun, Grady, DCAS
Crawford, Chris, DOL*
Domina, Kirk
Fitzgerald, Joe, SC&A
Frowiss, Jr., AL
Frowiss, Sr., AL*
Hinnefeld, Stu, DCAS
Howard, John, NIOSH
Hughes, Lara, DCAS
Jacquez-Ortiz, Michele*
Jerison, Deb
Lewis, Greg, DOE
Lin Naylor, Jenny, HHS
Lobaugh, Megan, DCAS
Mcfee, Matt, DCAS
Neton, Jim, DCAS
Pearson, Tiffany
Ringen, Knut*
Rutherford, Lavon, DCAS
Stiver, John, SC&A

Welsh, Laura
Worthington, Patricia, DOE

*present via telephone

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Proceedings

(8:30 a.m.)

Welcome

Mr. Katz: So, welcome, everybody. This is the Advisory Board on Radiation and Worker Health. It's our annual December meeting. We're meeting today and tomorrow. And just some preliminaries before I get into roll call and other matters. Everyone in the room is familiar, so I probably don't need to say certain things for you folks.

For folks on the phone who are with us, there's a public comment session, most importantly the public comment session that begins at 5:00 p.m. here California time, Western time, Pacific time. And so if you plan to make public comment, as usual we will have public comment from folks in the room first, and dealing with the California sites first, that we have two California SEC petitions we'll be addressing today.

But after that, we will go on two other subjects, and so folks on the phone, please we don't know how long that will go, the California matters and the matters in the room. But whenever that ends, we'll go right into other public comments from folks on the phone. So please be on at five, even though you're probably not going to be commenting quite at five. It's important.

And also, the agenda and the materials for today's meeting, those are all -- for folks on the phone again, those are all on the NIOSH website. They're on this program's portion of the website. If you go to Schedule of Meetings, which is a button you can hit there, today's date, you pull up that calendar of today's date and it will have all of the presentations for today, as well as the background reading materials for today and tomorrow are there for you to be able to follow along.

Now for the presentations, if you want, you can also

follow along. If you pull up that agenda on the website, it will have a Skype address for the web, and you can go on the web and see the -- see the presentation slides changed as they go here.

But either way, you have the presentation posted there. You can go through it on your own as people are, or you can follow it on the web, again with that agenda address. Let me also address, as I go, before I go through roll call, let me go address conflicts of interest for today, and tomorrow I'll deal with tomorrow's conflicts of interest.

Today there's only one agenda item for which we have a conflict of interest, and that's the Y-12 SEC Plant, I mean Y-12 Plant SEC Petition, and Dr. Lockey will recuse himself for that -- for that session. So that takes care of that. Also I guess before I do roll call, let me welcome -- we don't often have him here, but we have Dr. John Howard here, who's Director of NIOSH, and it's great to see him.

He's been to a number of these meetings, and John, would you like to greet the Board and others? Sure. There or there. Both should be live.

Dr. Howard: Good morning everybody. Thank you. Yes, it's true I don't often get to, but I happened to have a presentation at UCLA this morning, so I happen to be in the neighborhood. So I wanted to stop by and say hi to all of you. Thank you for all of your service on the Board. Not only is it statutorily required but it's vital to the claimants, our process of transparency and doing good science.

It goes without saying that 2018 has been a difficult year for all of us on the Board and the program, losing Dr. Melius like we did. I wanted to especially thank Dr. Anderson for stepping up, and to Ted for his yeoman work, keeping the Board together and keeping the program on track.

Finally, I wanted to wish all of you, each of you and to all of the NIOSH staff that works so hard on this

program happy holidays, and I hope that you have a very productive meeting here in La Ciudad de la Nuestra Reina de los Angeles, which is actually the formal name of LA. So thank you very much, and I'll be running out to UCLA. But have a great meeting.

Mr. Katz: Thank you, Dr. Howard. So on to roll call, and I'll just do this alphabetically, so both phone and in the room. Dr. Anderson.

Member Anderson: I'm here.

Mr. Katz: And folks on the phone, if there are audio issues, please let us know. Beach?

Member Beach: Here, here.

Mr. Katz: Brad Clawson?

Member Clawson: Here.

Mr. Katz: Bill Field?

Member Field: Here.

Mr. Katz: David Kotelchuck?

Member Kotelchuck: Here.

Mr. Katz: Jim Lockey?

Member Lockey: Here.

Mr. Katz: David Richardson?

Member Richardson: Here.

Mr. Katz: Gen Roessler.

Member Roessler: Here, and previously you were breaking up a bit, but we'll let you know again if it happens.

Mr. Katz: Yeah. I'm breaking up, is that what you're saying?

Member Roessler: You were quite a bit at the

beginning of your talk, and then now it seems okay. But occasionally there's kind of a break.

Mr. Katz: Okay, thanks. We'll try to take care of that. Phil Schofield?

Member Schofield: Here.

Mr. Katz: Loretta Valerio, sorry?

Member Valerio: I'm here.

Mr. Katz: And Paul Ziemer?

(No response.)

Mr. Katz: Okay. No, I wasn't expecting Paul, so we'll check in about him. He may join us for portions of this meeting. Thank you everybody. And so we have a quorum, which is great news, so we'll go forward. Let me just -- one other protocol before we get onto the business.

For people who are on the line, please mute your phones except when you're addressing the group. Again, for the members of the public, there's a public comment session at 5:00 p.m. Western time, but otherwise we shouldn't be hearing from members of the public except for Petitioners, when those petitions come up.

So mute your phones. If you don't have a mute button, press *6 to mute it, and you press *6 to take it off mute. Also please nobody put the call on hold at any point. That causes all sorts of grief, and we'll have to cut your line. So hang up and dial back in if you have to go for a piece.

Okay, and with that, I think we can go forward. The first item on our agenda is NIOSH Program Update. That's Stu Hinnefeld.

NIOSH Program Update

Mr. Hinnefeld: Good morning everyone. Is my microphone on? Okay. Thanks everybody. I assume

most of you like me are happy to be --

Participant: Can you speak up?

Mr. Hinnefeld: Okay, sorry. Happy to be some place warmer than my home town. It's quite a bit warmer here than where I live. This is my normal presentation of a few news items, and then a brief look at some statistics. Some news updates. We did do a few outreach activities between the August Board meeting and now in September.

With our outreach contractor ATL International, we again hosted a two-day dose reconstruction and SEC workshop in Cincinnati. This is for people that we hope will become resources for claimants.

Largely we use our local union officials who come to these outreach meetings, and our hope is that they'll be able to provide information to the memberships about the program and working their way through the program, and answer some basic questions about the program.

In October, we hosted the Third Authorized Representative Workshop that DOL has presented. At each of these workshops, we do go and present information about our part of the program, although the workshop is about both Part B and Part E. So it's not exclusively about our program, and the Department of Labor does most of the presentation, presents most of the material there.

The hosting in our facility worked out far better than I anticipated it could. We had good cooperation from our security folks and our IT folks, so that we could get computers for all the ARs, all the attendees to participate in the hands-on session on the SEM. So that went really, really well.

And then shortly after that, the Department of Labor hosted a stakeholders meeting in Washington, where they spoke to a broader, you know, not necessarily authorized rep but what we consider advocates,

program advocates, about the program. We did attend that, although we were mainly just there to answer questions. We didn't have a presenting role there.

Let's see. At the last meeting, I spoke about sort of the national debate that's going on about the low dose/no threshold dose model that we use, LNT essentially, and the use of a dose and dose rate effect in this factor. I think I mentioned at that time that we had just received a report from Oak Ridge Center for Risk Analysis, who is our -- essentially our contractor who keeps up with radiation risk research, and they proposed maybe the DDREF factor that we use should be calculated a little differently.

We also had comments at the time from reviewers that said well, you know, this might be a little premature to do this now, because there are other studies that are being done that are relevant. Our contractors did publish a paper in *Health Physics Journal* last summer describing their work.

And so in the interim, since I last spoke to you, I think I mentioned that we'd be attending some conferences about this. One was the Conference on Radiation Health, which occurs I think every other year in conjunction with the Radiation Research Society, and we went there and heard -- this has presentations from radiation biologists, physicians and there is this Council on Radiation Health was largely an epidemiology approach.

We also attended a meeting from -- a joint meeting by the Health Physics Society and the American Nuclear Society, which was called specifically to speak about is the data sufficient, should we continue to use the linear no threshold theory or adjustments to it.

I think in my judgment, and probably in Dr. Neton's judgment as well, there is certainly no convergence of opinions. There tends to be an epidemiologist feeling that there's no particular reason to have, even

to have even a DDREF and low LNT seems to be as good a predicter as any that you will find, and radiation biologists say well, based on what we observed there has to be a dose and dose rate effect in this factor.

So there doesn't -- there's certainly not, doesn't seem to be a consensus. A related item was that in the upcoming, I guess it's available, the *Journal of Health Physics* because it's online. If you're a member you can get the journal online, and this journal edition is available.

The members of an ICRP committee who are addressing, you know, addressing the question of dose rate effectiveness factor actually wrote a paper I won't say criticizing, but suggesting that the paper that was published by our contractor early last year, that's saying it may be a little premature. There's other work going on. There are other studies that weren't considered. They questioned a little bit of the approach and the methodology.

And so certainly the debate continues. There doesn't seem to be a particular consensus on whether to use LNT, whether to use a DDREF. If you use the DDREF, what should it be?

So we felt at least justified in our go slow approach and not change anything at the moment. So we'll continue to use the risk models we have, and which does in fact incorporate a dose and dose rate effectiveness factor, essentially a distribution of values that are used for dose and dose rate effectiveness factor.

This next item, after a long fairly silent period in terms of significant media reports about the program, we did have a couple fairly recently, written by the *Santa Fe New Mexican* in conjunction with -- in cooperation with *Pro Publica*.

One related to a specific claimant case and the story of the family of the claimant, and another one related

to the SEC process, and the sort of extended process that's involved in arriving at a final decision when an SEC petition is presented.

I mention that only for general interest. I don't think the Board has anything to do with that, but in case you're interested or you see reports, we do in fact monitor the reports, and as does our press office and several other people.

So the *Pro Publica* story had fairly broad, you know, was picked up a number of places. And so it's -- I'm sure a lot of people saw it. So we may have more attention from that or not. We'll see.

And the final item is bittersweet for some people. I wanted to mention a few retirements of Board Members or the Board Members are familiar with. Pete Darnell, who's been our lead on a couple of the sites, is retiring at the end of this month. And so he'll -- we are transitioning his work to other of our staff and we intend to fill behind that, you know, rather than take the attrition. We intend to fill behind that absence.

The next one is probably the worst one for the sake of the program, and that's that Jim Neton is retiring at the end of April. So I convinced him that since he's retiring in April, he should at least come to one last Board meeting. So he will come to the April Board meeting.

So Jim is retiring in April, and in his case we are pursuing an approach of hiring an understudy in a competitive bid on the job, the way you do all federal hires, and hire an understudy for the last maybe three months who would, you know, essentially be mentored by Jim for that period.

Jim, we might -- it might be a possibility to bring Jim back as a contractor for issues when we need as well. He's amenable to that, and I think we have a vehicle for doing that. And then the final one is that I intend to retire next year, and I intend to retire in June, at

the end of June.

I'm still waffling on that date a little bit. I'm pretty firm on the end of June, but I'm waffling on that a little bit. So but I do intend to retire next year, and that is at -- because of my own tiredness and my wife's urging. So anyway, that's -- that will essentially change the face of DCAS quite a lot. There are a number of people who can do what I do; there are not very many people who can do what Jim does.

So this will be an adapting, you know, a time for adaptation and learning, and now these understudy positions are CDC-only positions. They're not advertised to the public. So I suspect that there will be some continuity, and I think the people most qualified probably to win these jobs in this bidding are probably already working in the program so -- or have at least experience in the program.

So I think they -- I'm thinking there will not be a major upset, but we'll see as we go forward. Okay. Any questions on anything I've mentioned so far?

Member Kotelchuck: Well, can you -- is my mic on? Yeah.

Mr. Katz: Yes.

Member Kotelchuck: Is there any place that Board Members can access the media reports? I know you keep track of them.

Mr. Hinnefeld: I have them. I can send them to the Board or Ted, you could send them, right?

Mr. Katz: Yeah. We'll circulate a link to the reports.

Member Kotelchuck: Right, and I think that's a good idea.

Mr. Katz: Yeah.

Member Kotelchuck: Okay.

Mr. Katz: We'll do that. Any other questions from Board Members in the room, or questions from Board Members on the line?

Mr. Hinnefeld: Okay.

Member Anderson: Congratulations --

Mr. Katz: Andy, sorry?

Member Anderson: Yeah. I was just saying congratulations to the retirees. Maybe have a little party for them before this happens.

Mr. Katz: We need a roast at the next Board meeting, I think, for the two.

Member Anderson: Absolutely, yes.

Mr. Hinnefeld: I didn't announce it for those purposes. I announced it, rather than just leave people cold.

Member Anderson: Yeah. I saw online already you've got a list of gifts.

Mr. Hinnefeld: I thought it would be say a little impolite at the end of the next meeting to say good-bye forever.

Member Anderson: Exactly.

Mr. Hinnefeld: So I didn't announce it with the expectation there would be anything.

Member Anderson: Well, we'll certainly miss you.

Mr. Katz: Yeah. I think Stu is a little bit understated in saying that anybody can do his job, because I don't think that's true. Both will be sorely missed.

Mr. Hinnefeld: Okay. Well, thank you all. Thank you, Ted, for that.

Member Richardson: Stu, you talked about the idea of somebody shadowing Jim, and is the same process

in mind for you?

Mr. Hinnefeld: Yeah, we're planning to do that, planning to do that for me as well.

Mr. Katz: Okay then. Well thank you, Stu.

Mr. Hinnefeld: And then the statistics, I'll go through these relatively quick. These numbers change by about 500 every time I'm up here it seems. So there's -- I don't know there's a lot to say, the same types of things, the number of cases that we've submitted and the number goal for a couple of different reasons.

Essentially our current active cases and the categories they fall into. Always we have a number of cases where the initial draft is in the hands of the claimant, and we're waiting for the OCAS-1 to proceed with the final dose reconstruction.

Touchy screen. The percentages stay pretty close to 27-28 percent, the percentage that are successful by dose reconstruction. That's a little lower than it was a number of years ago, and I think probably the reason is the addition of more SECs in those years has meant that some of the cancers that we tend to be successful with in dose reconstruction are now paid through the SEC, and so we don't get those, things like lung cancer and leukemia.

So I think that's why there's been this very slight reduction in the percentage over the years.

This is the DOE records request statistics. By our count, the cases outstanding, you know. We could have sent that to them last week, you know. It doesn't particularly mean anything that a claim is outstanding. They have a certain period of time which I think is 60 days that they try to respond as quickly as they can.

When they get to 60 days, we put them in another category of being somewhat late, and there are only two in that category. So this is -- this response is

really good. It's been really good in my last two reports, and that's -- there can be a number of reasons for that and it's always a site-specific thing. These were provided by sites.

So a summary of the first 20,000. Again, this doesn't change a lot because we get a lot of reworks back, and so we tend to still have claims in our possession in the first 20,000. When I get this slide and I see that there are initial cases in the first 20,000 that are not -- that we're working on now, I always look up and see what happened. Why are we having initial cases because we shouldn't from the first 20,000.

One of these was closed in 2008. It was admin closed because we didn't get an OCAS-1, and in 2018, it was reactivated. I think what happened was the claimant was diagnosed with another cancer, and so decided to go back into the process. So that's one of them.

The other one was pulled by DOL in 2008 with the comment there was no known survivor. In the meantime, it appears that they have developed a survivor and it was reactivated again in 2018. So those two, even though they are called initial because we never sent a final dose reconstruction to DOL, those are actually relatively new claims in terms of our working on them. They came in this year.

Okay. That's it. Are there any questions about this or any other part of what I've presented today?

Mr. Katz: So I see no questions from folks in the room. How about Board Members on the line?

Member Valerio: None here, Ted.

Mr. Katz: Okay, thank you, Stu. And next up we have Department of Labor.

Mr. Hinnefeld: Okay. I'll be running the slides for Chris again.

Mr. Katz: So Chris Crawford, are you on the line?

Mr. Crawford: Yes, good morning.

Mr. Katz: Good morning. We're ready to go. Thank you.

DOL Program Update

Mr. Crawford: Great. Just to comment, Stu's microphone is much lower in volume than say yours, Ted, for those of us on the line, I think.

Mr. Katz: Thank you, Chris. I appreciate that. We'll try to deal with that while you're presenting.

Mr. Crawford: Great.

Mr. Katz: Thank you.

Mr. Crawford: Thanks in advance, Stu for handling the slides again. Okay. Are we -- let me know when the first slide is available, Stu.

Mr. Hinnefeld: Yeah, they're there. They're there, Chris.

Mr. Crawford: Great. Then we'll proceed to the second slide. These are the numbers for compensation paid. We see that Part B compensation in total is $6.7 billion at this point. Part E compensation, $4.6 billion, and medical bills, $4.5 billion. Total, $15.8 billion program to date, with 204,270 cases filed.

Next slide. We see here Part B cancer cases with a final decision to accept. Here we have 10,721 accepted dose reconstruction cases, representing $1.6 billion in compensation. We have a further 26,834 SEC cases, representing $4 billion in compensation. Then cases that are accepted on -- both on SEC status and on having a dose reconstruction with a Probability of Causation above 50 percent, 1,058 such cases, representing $159 million in compensation.

The totals for all accepted SEC, dose reconstruction

cases, and combined, 38,613 cases at $5.8 billion of compensation.

Next slide. Our figures show 50,684 cases were referred to NIOSH for dose reconstruction, of which 48,912 cases were returned to DOL from NIOSH. 42,515 cases had a dose reconstruction, and 6,397 were withdrawn from NIOSH with no dose reconstruction, probably an SEC acceptance or no survivors, something like that. And then we show 1,772 cases currently at NIOSH.

Next slide, please. Here we see Part B cases with a dose reconstruction and a final decision. That's 34,013 such cases, with final approvals being 11,809, final denials, 22,204. That's 35 percent approved and 65 percent denied for cases with final decision.

Next slide, please. Here we see Part B cases filed. Categories are as usual they don't change a great deal. We see that NIOSH received 35 percent of the cases for dose reconstruction. The next biggest category is Other, but that has to do with other parts of the Part B program, beryllium sensitivity, chronic beryllium disease, chronic silicosis.

NIOSH got SEC cases referred to them for a dose reconstruction, in the amount of 12 percent of the total Part B cases. Then there were SEC cases that never went to NIOSH, and that represents 15 percent of cases. Then we have RECA cases, nine percent of total cases.

Next slide, please. Then we have all Part B cases with a final decision. That would include SECs and all other categories. That represents 100,964 cases of final decision under Part B, of which 53,183 were approved, 47,781 were denied. So that's 53 percent approval, 47 percent denial.

Next slide, please. Again, what I call our usual suspects. These are the top four sites generating cases under Part B. They include Nevada Test Site,

Savannah River Site, Hanford, and Rocky Flats.

Next slide, please. This rather complex slide refers to the SEC petition site that will be discussed to some degree at this meeting. When you look at Y-12, first listed site, we see that there were 20,819 cases filed, 4,988 were returned by NIOSH with a DR. We have 9,202 final decisions, 5,445 Part B approvals, 5,990 Part E approvals. Compensation and medical bills together amounted to $1.9 billion.

Area 4 Santa Susana Field Laboratory, we see 1,089 cases have been filed. 264 cases have had a DR returned by NIOSH. We have 534 final decisions. We have 254 Part B approvals, 243 Part E approvals and $69 million in total compensation and medical bills.

Moving on to DeSoto Avenue facility, it would be 767 cases filed, 226 cases returned by NIOSH with a DR, 363 final decisions. 208 approvals, 190 Part E approvals, and $53 million in total compensation and medical bills.

Superior Steel Company has only 52 cases filed. 35 cases were returned with a DR by NIOSH. 48 cases have gotten a final decision. 19 cases approved under Part B, there is no Part E for an AWE site, and total compensation $2.9 million plus medical bills included.

Moving on to Metals and Controls Corporation, we already have 977 cases filed, 451 DRs returned by NIOSH, 943 final decisions, including 460 Part B approvals. There are no Part E approvals again, and total compensation and medical, $73 million.

Last on this slide, Los Alamos National Laboratory. We have 10,514 claims, 1,527 returned by NIOSH with a DR, 4,568 final decisions, 2,593 Part B approvals, 2,672 Part E approvals, $881 million in total compensation and medical bills.

Next slide, please. Then we have a Site Profile review coming up today for Carborundum Company. Here

we have 5,334 cases filed. 1,529 cases were returned by NIOSH with a DR. We have 2,282 final decisions. We have 1,019 Part B approvals, 1,098 Part E approvals, and we have total compensation and medical bills of $305 million.

Next slide, please. This slide is repeated in each meeting, but basically these are DEEOIC outreach events, including town hall meetings, traveling resource centers, and so forth. There are also quarterly medical conference calls, authorized representative workshops, and informational meetings, town hall meetings in some cases.

Next slide, please. I think we're all familiar with the members of the Joint Outreach Task Group and their function. Now go to the next slide, please.

These are recent DEEOIC outreach events in reverse order, that is from newest back to oldest. There was one recently, an outreach event at Lynchburg, Virginia November 14th, of which we had 100 in attendance, and there were 11 new claims filed.

And then I believe Stu mentioned the same. There was a Cincinnati, Ohio meeting for authorized representatives October 16th-17th. We had 25 ARs in attendance. Then in September 11th and 12th, we had a teleconference for medical providers, and we have no numbers on that. Then, August 29th-30th, we had a meeting in Shiprock, New Mexico, another outreach event, 24 in attendance, no new claims, or none mentioned.

Then we had an August 22nd, 2018 meeting in Kensington, Pennsylvania, another outreach event. 125 in attendance, 18 new claims filed.

Next slide. This slide is not very informative. The TBD says it all. We are in the process of making a schedule for our coming year, and that will be posted when it's available. That concludes the slide presentation, and if there are any questions, I'd love to hear them.

Mr. Katz: Thanks, Chris. Thanks, Chris. Do we have any questions from Board Members in the room for Chris?

(No response.)

Mr. Katz: How about Board Members on the line?

Member Anderson: No, no questions.

Mr. Katz: Okay. Thanks. Thanks everyone, and thank you Chris for the presentation. I appreciate it. And we're up to DOE now, and we have first Dr. Pat Worthington. Welcome Pat. We're glad to see you.

(Pause.)

DOE Program Update

Dr. Worthington: Good morning. I hope that all of you can hear me here in the room and on the phone.

I wanted to come to the Board meeting today, it's been a few meetings I've missed, and I wanted to get out to the Board to give you my thanks and my support and commitment for the work, and also to support Greg Lewis, who is our office director who works really hard on EEOICPA and former worker program, as well as to interface directly with our partners, Department of Labor and NIOSH, as we work together on this very important effort.

I believe that Stu started off saying that this was his normal presentation, so I will keep with normal presentation, and Greg will give some specifics as we go along as needed.

One of the things that we do, we view ourselves as being advocates for the workers, and in doing so on this program, we want to make sure that Labor and NIOSH have the information that they need, so that they can address the issues of the workers and make decisions.

Okay, Stu. We'll see if your system's going to work.

There are a number of things that we want to do. Many years ago, we had some concerns about privacy information, about classified information, about other kinds of things creeping into the report.

I think we worked with our partners and with people at Department of Energy to make sure that we had a secure system, and I think that we're having a lot of success in terms of speed and fewer or no breaches associated with that.

So again, we want to continue to refine that, but we believe it's working very well. Large scale research and identification of employment verification, exposure records, all these things were needed to be able to move forward, and we'll talk about some stats a little bit, about where we are with that in terms of getting information within the required period of time. We've been working hard on that, and I think that we've made a lot of progress in that effort.

Individual records. Certainly, I think you've seen these numbers. You've seen these stats many times. We have not yet been able to predict the exact number, but we support our -- provide our funding and our efforts and our staff to support these kinds of numbers that we see for verification, for dose records and various kinds of documents.

We try to be creative in terms of our efforts to identify these records if they're not readily available. One of the things that over the years you've seen in the Department of Energy is that it's changing, it's changing in terms of contract mechanisms, the way that contracts are managed.

Many years ago, you would have a single management and operating contractor, and you could go to them for various information, records and so forth. But in some cases now there are multiple contractors associated at the sites in terms of making information available. So we're trying to become even more creative in identifying our contractors and identifying records, and defining and redefining our

subcontractors.

For DOE, it's important that we look at all contractor records, and sometimes that's a subcontractor or sub to a sub to a sub, and so sometimes it gets difficult. But we have organizations on the DOE side like at Hanford who have continued to be creative and to produce records and find, you know, new ways and new approaches for doing that. So we're asking Hanford to share some of those successes which they do across DOE, so that we can become better at all of the sites in terms of making the information available.

Volumes of records. We have some small documents, we have some large documents, but in many cases we are searching for documents, and it's a challenge when we make them available to NIOSH, for example, in terms of volumes if they're huge documents and so forth, and you'll hear a little bit from Greg about kind of some efforts that we had with classification reviews and so forth, and we're getting better with that.

We're challenged again with sort of the contracting mechanisms associated with that, but we continue to improve, and we actually do have a commitment internally from within our organization on the classifiers to help in the field, and help them move forward when necessary. I believe we've made some significant progress in that area.

The size of our records packages, certainly those things could vary depending upon the subject and the material associated with it. But we try not to let the size of the package, you know, interfere in making the information available as soon as we possibly can do so.

Response, 60-day goals. We worked with -- DOL was the lead in coming up, and we agreed with the goals for when we could make information available, and I think that when we see a 97 percent on-time response rate it's good, but it's not the best. So we're

always looking for 100 percent on time so we can move on to others.

And so we've continued to work on that, and we always welcome feedback in terms of where we are. Sometimes lessons learned at one site doesn't work at the other site, because there are different reasons for why documents may not be made available. But you hear some, see some statistics here about Idaho and Savannah River, and Savannah River's a success story. I think that was turned around, and Greg may mention that.

Oak Ridge, it's always important to us what's happening at Oak Ridge and how well they're responding, because many of the records for the sites and the activities that we have and the claimants that are looking for that information, they're things that need to come through Oak Ridge.

So again, it's always a challenge but also it's important. It's a great area for us to focus on, to make sure that we're getting what we need from Oak Ridge, and that we continue to improve in the area. They certainly have a heavy load to lift there.

Do we need to go back one?

(Off mic comment.)

Dr. Worthington: Okay, all right. Large scale research projects. Again, that's a big effort for us and we involve a number of organizations. We've mentioned over the years our reach back to legacy management. They're experts in searching for documents that we can't seem to locate from other places.

But everyone muted at this time? We're getting some feedback. I don't know if it's from here.

(Pause.)

Mr. Katz: Go ahead, Pat. See if it's okay now.

Dr. Worthington: Here are a list of some projects that continue, Hanford, Savannah River, Idaho, Nevada, Oak Ridge, Sandia Labs. These are areas that we have large scale research projects that we put a lot of effort on trying to find these various documents from different sources.

Our document reviews. That's certainly an important area. You know, once we locate the documents well then what do we do? How do we carry out sort of the review process? I'll have Greg come up and talk a little bit about some activities that he's been focused on, and may mention a little bit more about the document reviews.

But we know how important it is to get the documents in the hands of NIOSH and Labor, so that they can do their job in terms of addressing the claimant and resolving things as quickly as possible.

Mr. Lewis: Good morning, everyone. I'm just going to give an update on two items we've been working on particularly hard since the last Board meeting. The first is with Savannah River, as I think some of you up here are aware, we've been running into some significant challenges with the document reviews. This goes back probably, oh, over a year ago that it kind of started.

Basically the issue is with the manpower that we had doing the classification reviews at Savannah River, they were not able to keep up with the demand that was created by the NIOSH and the SC&A and Advisory Board, you know, reviews down there when you set aside documents.

So we were slowly falling further and further behind. But we were still doing reviews, but the amount you were requesting was always a little bit more than we could keep up with. We identified this as a problem. I mean we knew it was kind of building, but we were wondering if we'd be able to catch up or if the demand would go down, it would kind of even out.

But about, oh, June of last year, we kind of realized that it was getting -- we were falling further and further behind and we didn't see it changing. So we worked with the site. We tried a number of different things. We were looking into bringing in a classification review where they would just do our work subcontracted to us. We were looking into retirees, they could come back. You know, at Hanford we have -- we're lucky enough to have that kind of situation, where the retirees can come in and do just the EEOICPA-related classification reviews, but there weren't really anybody at the site that was retired that was still in the area that had that expertise, and bringing in a contractor directly to us didn't work for a number of reasons.

We started working with the site and the upper management at the site, trying to explain, you know, what the challenge was and what our needs were. So they ended up hiring two new classification reviewers at Savannah River on the contractor side. It took quite a while, because one, they had to go through the hiring process and identify the people.

Two, they had to get them clearances, because they either didn't have clearances or I think one didn't have a clearance; the other needed -- he had it -- he had had a clearance in the past but needed it re-upped. So we were able to get them cleared, and then we also, the site had to get them trained in terms of how to do these document reviews, particularly because most of the, you know, at the DOE sites most of the classification reviewers are reviewing stuff that's happening on site at that time.

So they have to be familiar with the current operations. The EEOICPA stuff can get tricky because a lot of it has to do with the operations that they haven't done there in years and years. So they had to get them trained up. So again, while all of this was happening we were falling further and further behind.

But about, I think it was November, they finally got

these two guys up and -- two individuals up and running and working through the backlog. They've been doing about 5,000 pages a month and were able -- and I think they made a particular push. I think they were able to put some other staff on it that month of November.

So we went from, you know, there's a spreadsheet that comes through my office from NIOSH, and I'm sure the Board and the Working Group have seen it, that has the prioritized list of documents that are being requested from Savannah River. So I think there were maybe 12 categories on that, and in the last two months or so or month and a half, they've been able to knock that down to like only -- there's only six left or something like that, and they've made a significant dent in it.

NIOSH and the Board did adjust their request with one particular item which was very large. They pulled out segments of that to do. But based on what's left on the list and the rate at which we're able to conduct these reviews now, it looks like we should be through that backlog in a couple of months, you know, give or take, and I know it's a holiday season.

But things are -- things are moving much quicker now, and we believe that we've been able to resolve that issue or on the way to resolving it. Then the second issue is based on some feedback from a claimant advocate. We identified that there could be possible problems with the quality and completeness of the records responses for the Santa Susana Field Lab, that Boeing is the company that owns that facility and owns those records.

So again there were some concerns raised which we took very seriously. So we've put together a team of three people from my office. We also worked with NIOSH, and they sent out a representative and we're working on the back end checking cases. Last week, we did an onsite review of those records, went through a number of cases.

We haven't quite -- we haven't finalized our report, but there were some -- there were some issues that we identified. There were also some good things that we found there. So I just want to point that out as an example, you know, when concerns are raised about quality or any activity at our sites. We take those very seriously and so, you know, we went out there to see for ourselves and do an investigation.

Those are the two items that I was going to mention. I guess, Pat, I'll just go ahead and go through. Facility Research. I think you all know we partner with DOL and NIOSH when issues are raised as far as the covered facilities, and typically these are the smaller AWEs. We will go out and research those, and either make a determination if it's AWE or provide the information to DOL if necessary.

And then Stu mentioned and Chris both mentioned outreach. So I'll skip past that. And then I always mention our former worker medical screening program, which is again not directly related to EEOICPA, but certainly a lot of the same people can go through both programs.

We always encourage people out there if they haven't heard of the former worker program or haven't been through it, you know, it provides a free medical screening done by occupational medical physicians or run by occupational medical physicians I should say.

The results from those screenings and the letters that those physicians put together can be very helpful for any EEOICPA claims. So I always encourage people to pass on word about this program if you know folks that might be interested or eligible. So with that, I guess, are there questions for Dr. Worthington or myself?

Mr. Katz: And just before we get to Board questions, let me just ask one question for you, Greg. You said you'd report out on the Santa Susana situation. Are you going to report out to the person from the public who's raised the issues too? Is that how --

Mr. Lewis: Absolutely.

Mr. Katz: Okay, thanks.

Mr. Lewis: Absolutely.

Member Beach: You stole my question.

Mr. Katz: Oh, I'm a thief, yes.

Member Beach: I can finish that. Will that report come to the Work Group, so the Work Group has it as well?

Mr. Lewis: Sure. We could send that to you as well.

Member Beach: Okay, and then Pat, I had a question for you on -- you briefly mentioned --

Mr. Katz: Speak right into the mic.

Member Beach: You briefly mentioned that Hanford reviewers were doing a great job, and you were looking at a way for them to train other reviewers. Can you expand on that, or is that just -- I was just curious if there were something in place or something in place, or something you were thinking about --

Dr. Worthington: They've used a lot of new techniques, new approaches, and typically we have people from other sites whenever they're going to Hanford, to go by and visit that site, visit the organization there doing the work, and to kind of share it on a one on one basis.

I think Greg and Hanford and others have been involved in annual meetings about records and record retrievals and things like that in terms of sharing lessons learned. I know from headquarters periodically we include information about new approaches from Hanford in the DOE-wide weekly reports going out, so that people are aware of it.

So we're looking for more and more ways, but we encourage the sites when they can, have their POCs come and visit with the ones out at Hanford, and also

different individuals from DOL side that are working on claims, I think, have visited with the folks at Hanford, and talked to them about lessons learned or whatever it is.

So we are looking for ways to share that, because I think they have been extremely successful, and I think it supports our overall goal and approach, that we don't simply say we can't find it, you know. We look for other ways. We listen to what workers are saying about the kinds of documents that existed, but we haven't seen those kinds of things.

So we are committed to, you know, not saying we don't have it, but to continue to look, you know, where appropriate to find these records so --

Member Beach: Thank you.

Mr. Katz: Other questions from Board Members in the room? David.

Member Richardson: First a question about the 60, the 60-day goal, which was very impressive, reporting of 97 percent on-time response rate. And on that slide, you listed three sites that have near-perfect records, and I was wondering do you have a similar list of three sites which would be the ones of most concern, in terms of not having perfect records?

Mr. Lewis: Yeah, we probably do have that list. Now I wouldn't say it's not -- I wouldn't characterize it as perfect records. It's perfect, you know, it's perfect on-time response rates. So it doesn't mean -- just because they're late doesn't mean the records are poor. Yeah, I mean we usually try not to highlight those sites.

But I would also say with a 97 percent overall rate, I wouldn't characterize those sites as poor performers. They're actually, you know, I think one of the -- I don't have the list in front of me, but I believe one of the sites where we had some issues last year was Y-12.

But again, Y-12 is our either biggest or second biggest single site. It's Y-12 or Hanford are one of the two. So again, they weren't perfect. But you know, if Y-12 had had significant problems, it would have brought down our overall numbers much more than 97 percent.

In fact, last year, last fiscal year FY '17, we were at something like 88 percent, and that was probably our worst ever. One of the reasons -- there were a couple of reasons for that. One was we had some budget issues at a lot of our sites because of the way that the CR ended, and so a lot of our sites were kind of impacted with fits and starts budget-wise, but also Y-12 had moved their record storage facilities.

So they had to box up and palletize everything and send it to a different location. So that there were actually significant challenges with Y-12, and that really brought down our average. This year, Y-12 is one with again not perfect, but again I would think that they were still over 90 percent, and there's a few smaller sites.

I would say honestly of our 25 major sites, probably 20 of them have similar to what you saw with those top three. They have, you know, less than five overall over 60 days, you know, or very close to zero, and then there are a few that have some. And then that kind of -- those sites change every year. It's not the same sites every year, and typically that's because of things like personnel.

You know, most of these sites -- most of these places other than Y-12 and Hanford and some of the big ones, most of these places that do the request have, you know, one person in medical that does, you know, that pulls a medical, or one person that might have a backup.

But you know, when that person's out for a couple of weeks or if they're out on a medical or if they have a family issue, those are usually the kind of things that actually impact our numbers.

Member Richardson: Yeah. Could I ask you two more questions? Just these are very brief questions, I think. I'm used to thinking, it comes from a different perspective, but I'm used to thinking about time to event data as sort of being a distribution.

You've got -- your goal is to get to 100 percent, and we're looking at times to event. So you could imagine a curve which would show T naught, time zero being when the request was placed in, and then the curve that shows the function of as you -- as the proportion responses get to 100 percent.

You've chosen 60 days. Is that a -- is that kind of an internal goal you'd like to reach, 100 percent response by 60 days, or is there -- is that the administrative end of follow-up? If something doesn't happen after 60 days, is it no longer important?

Mr. Lewis: Well, I see -- I guess yeah. Our goal is under 60 days, and I guess what you're saying is once it's 61 days, well then you know, why worry about it? It's already over 60 days. I mean, I guess from a numbers perspective, that's probably true. But that's not how we treat the claims. You know, the more days over 60, the worse it is.

Member Richardson: From a claimant's perspective, does it -- does it go on infinitely, or is there -- will they wait and wait and wait, or is there an end point after which it's no longer relevant?

Mr. Lewis: I mean, we've responded to every -- I don't think there's ever been a claim where you just kind of, you know, we'll it's been too long; we're not going to get this one. At a certain point, if there's some real reason we're not finding it, then you know, we'll say well, the records aren't there. But you know, we've responded to every claim and, you know, we try to -- if it's over 60 days, you know, we're concerned about that and those are a priority.

It's not the other way around, where those are

already done and we then ignore them. We make those a higher priority.

Dr. Worthington: Let me comment on that. We don't have a set period of time after 60 days or whatever it is, because we were driven by different kinds of things for a particular review we're doing. Maybe we've looked, we've passed the 60 days and we look at five different kinds of things that we've done in the past when we couldn't find things, and there's still some more we want to look at.

So no, it's not the specific hard line in the sand to say that we're done, that we're going to stop. We continue to look for those, especially if we have information or evidence or, you know, strong testimonies from people that, you know, these kinds of things did exist.

Greg didn't mention, but he has another document that I would call a peer to peer document, where I think it's on a quarterly basis you send out a report to all of the people in the field showing how they match up to each other, kind of where they are or whatever it is. I think that's an interesting story that has, you know, plots and things like that. It gives you an idea of what's going on and where we might want to target, you know, our efforts for improving or working closer with that particular site.

Member Richardson: Could I just ask one other question?

Mr. Katz: Yeah we -- but because we have to get going.

Member Richardson: Yeah. Well, just out of curiosity because we're here in California, you described a review of some records from Santa Susana, and I was just wondering about the sampling protocol for doing that type of review, because it's something we've thought about in other places.

Mr. Lewis: Well, there were kind of a number of

specific concerns we were looking at. So based on those concerns, we sampled cases that were -- we felt were likely to have problems based on those concerns. So it wasn't really a random sample of all cases, you know. There were concerns about particular things, and so we targeted it to that. So it was kind of a little bit different of a thing.

But there was, you know, there were specific reasons why we were looking at each claim, either time period that we did it or time period that the person worked, or you know, whether there was a lot of dosimetry or should have been a lot of dosimetry. Things like that were what we targeted.

Member Richardson: And just a last, what was the size of the sample?

Mr. Lewis: We looked at about 20 claims.

Member Richardson: Okay.

Mr. Katz: Thank you. I don't want to shortchange Board Members on the phone. Do you have questions for Greg before we move on to the Carborundum presentation?

(No response.)

Mr. Katz: Okay. Hearing none, I think then next up we have a Carborundum presentation. Gen Roessler, who's the head of the Carborundum Work Group will -- this is her report. However, she is not with us in the room. She's doing this remotely. She's in one of these areas where it's hard to get in and out in the winter, and Stu will be handling the slides. So Gen, I'll let you know when Stu's ready.

Member Roessler: Okay, and I'll ask can you hear me okay?

Mr. Katz: Yeah, you sound clear. Thank you.

Member Roessler: Good. The speakers in the room vary. Josie came through nicely. The speakers at the podium are sometimes hard to hear. Okay, I see the slides up, and as Ted said, I'm going to report for the Carborundum Work Group, and what I'm going to be discussing today are Site Profile issues.

I think we have plenty of time. It will take me a little time to get through this, but I'm sure we'll have time for questions. So the next slide, Stu. The Work Group Members are myself, Brad Clawson, and Bill Field, and we were all present. We had a Work Group meeting that we had last week, and so we're going to report on that meeting.

So first I'd like to give you a few reminders about the Carborundum Company. It was located in Niagara Falls, New York, AWCs, with two operational periods, June through September 1943, and then 1959 to 1967. The first operational period they were engineering and shaping uranium fuel rods for the Manhattan Project, and then in the second period they made uranium and plutonium fuel cells.

And then there were also, you have two residual radiation periods, 1943 to 1958, and 1968 to 1992. You'll notice some years missing in there. In the 50's, the company did some work that was not covered under EEOICPA.

So on Slide 4, I want to also review a little bit about the Carborundum SEC Petition 00223. This petition was received in 2014 and it qualified on February 2nd, 2015. The petitioning was they had a Class from 1943 to 1976. NIOSH recommended that the petition be denied, and that was at the July 23rd, 2015 Board meeting.

Subsequent to that, there were a number of reviews by SC&A, presentations by NIOSH and some Work Group meetings. On March 22nd, 2017, the Advisory Board at that Advisory Board meeting, our Work

Group recommended that the petition be denied, based on NIOSH's recommendation that they could do dose reconstruction. The Board voted at that meeting and agreed with the recommendation.

However, the Work Group pointed out that there were still some Site Profile issues that remain unresolved. So in the interim, we have been working in the usual pattern with White Papers from NIOSH and SC&A reviews. A lot of that took place, and then as I mentioned, our Work Group met just last week to discuss the open Site Profile issue.

And then we'll go to Slide 5. Yes, there we go. There are actually four pertinent White Papers dealing with these nine Site Profile issues that we addressed at the meeting last week, and these papers are listed in chronological order on the slide.

I'm going to talk about it a little differently, because I want to point out that two of the papers deal with the nine issues, and then two other ones are on one special issue that took more details discussing. If you look at the second bullet, we list the paper issued by NIOSH on August 16th, 2018, and that paper summarized their responses to the nine open Site Profile issues.

Then in the third bullet, we list two papers. One is SC&A's November 27th, 2018 companion paper, which reviews NIOSH's approach to the nine issues. However, we have a special issue. One of the nine was a special issue, and so on August 3rd, and that's when NIOSH's White Paper came out, it was dealing with the special issue, and it dealt with external dose estimates from plutonium work, and that one was listed there in the first bullet.

SC&A's review of dose plutonium work special issue was issued in a White Paper on November 28th, 2018. So with these four papers in hand, the Work Group convened last week and we discussed these issues. What I'm going to do then, we'll go to the next slide. We'll go in order of the issues, Site Profile

issues starting with Issue 1.

I will comment that eight of these nine issues are relatively straightforward, pretty easy to talk about and the other one is the one that will -- are calling the special issue, and we'll spend a little more time talking about that one and I put that towards the end of the presentation.

So on the first issue then, we talked about the dose from X-ray diffraction, and that will be dosed to the operators. In this case, SC&A recommended adjustments to the NIOSH exposure model. NIOSH then revised the model and provided additional calculations. They also said they will make the changes in this model and consequently SC&A suggested the issue be closed and the Work Group agreed. So that was Issue 1.

Issue 2 had to do with the use of surrogate data. SC&A commented that the beta dose rates for the second AWE operational period may be over-estimated on contact, and under-estimated at one foot. NIOSH reviewed the recommendation on these estimates from SC&A, and they made the adjustments to the beta dosage for the Site Profile. So SC&A suggested the issue be closed and the Work Group agreed.

Going on to Issue 3, and this dealt with work hours in the residual period. SC&A pointed out that NIOSH did not use consistent work hours in calculations of dose in the residual period. As a result of that, NIOSH revised the exposure model calculations to agree with work hours used in TBD 6000. SC&A suggested this issue be closed, and the Work Group agreed.

In Issue No. 4, external dose distribution sites. SC&A commented that a NIOSH example dose reconstruction had the wrong dose distribution site for the years 1959 and 1960. NIOSH corrected that error in the spreadsheet, and used the estimated dose. So that one is for the easiest that SC&A

developed from our point of view probably. But SC&A suggested that this issue be closed, and the Work Group agreed.

Mr. Katz: Gen, can you just reiterate just the last few sentences. They came through garbled.

Member Roessler: Oh, I'm sorry, okay.

Mr. Katz: Thanks.

Member Roessler: Was this on Issue 4?

Mr. Katz: Yeah, just the last issue.

Member Roessler: Okay. Let me then just go over that again. So Issue 4 was on external dose distribution findings. Am I coming through clearer now?

Mr. Katz: A little bit. It's a little bit fuzzy at your end. It's almost like there's cotton balls on the mic or something.

Member Roessler: Hmmm. I'm on a phone. If it doesn't clear up in a little bit, I'll try and get on --

Mr. Katz: When you speak like you're speaking right now, it's easy to hear you. So I think if you speak up, that will take care of it.

Member Roessler: Okay. This is a geometry problem, maybe that's because we're getting to something like that next. All right, thanks. So any way, SC&A commented that a NIOSH had example dose reconstruction had the wrong dose distribution site for 1959 and 1960. NIOSH corrected the error on the spreadsheet used to estimate dose. SC&A suggested this issue be closed, and the Work Group agreed.

But then onto the next slide, Issues 5 and 7, and you'll notice a number is missing here and it's the Issue No. 6 that we'll talk about later. That was the one out of the whole group that wasn't closed. So

going then to Issue 5, this had to do with internal dose for glovebox workers.

SC&A commented that NIOSH had assigned intakes of both uranium and plutonium, not one or the other. NIOSH then explained or provided the rationale for how gross alpha data are to be interpreted as either plutonium or uranium. Well that statement's really not self-explanatory. In the NIOSH paper they explain that quite well, and if you have questions I would then ask them to comment a little bit more on it.

But anyway, what the explanation at the Work Group meeting, SC&A accepted the approach and suggested that this issue be closed, and the Work Group agreed.

Then Issue No. 7, incorrect intake used in a sample dose reconstruction. SC&A commented that one of the NIOSH example dose reconstruction used the wrong intake category. NIOSH acknowledged that there was an error in their example dose reconstruction. They said they will fix it; however, they made the comment that that actually is not a change in the proposed Site Profile. SC&A said okay, suggested closing the issue, and the Work Group agreed.

Okay, then No. 8. All right. This is on the photon energy assumptions for the residual period. Actually, this was quite a long discussion at our Work Group meeting. I will summarize it here though. SC&A commented that NIOSH had a small over-estimate of photon dose due to using a single energy band with the residual external doses.

NIOSH agreed to revise the Site Profile using the photon energy provided in TBD 6000. Based on that, SC&A suggested the issue be closed, and the Work Group agreed.

Mr. Katz: Gen, you're fading a little bit.

Member Roessler: And then, Issue No. 9 had to do

with ingestion intake. SC&A commented that NIOSH calculated a slightly underestimated dose from ingestion, and then I think that they're suggesting that NIOSH file OTIB-009, that method. NIOSH has agreed and has made the changes to these calculations. So SC&A suggested closing this item --

Mr. Katz: Gen, Gen, you're fading again. It's very hard. You either have to speak very loudly or maybe take it off of speaker phone.

Member Roessler: Okay. I'm not on a speaker phone. Is it better now?

Mr. Katz: It's better right when you make an effort like that, yes. It's much clearer.

Member Roessler: Okay, and I also moved the phone. Maybe the phone slides a bit. Keep reminding me. Is that better now?

Mr. Katz: Yeah, it's better. Right when you're talking right now, it's very clear. So if you can keep that up, that will work.

Member Roessler: Okay, I'll try that. So that finishes my presentation on the eight issues, all of which the Work Group agreed are closed. I could stop here and ask if there are any questions on that part, or I could proceed on and finish the other ones.

Mr. Katz: Why don't you just go ahead and proceed, and then we'll get questions at the end of it.

Member Roessler: Okay. We'll know how much more time we've got too. So then let's go back to the open Site Profile Issue No. 6, and this one actually has three findings, and I'll go over all three of those. All three of these are related to the external dose from plutonium, and I'll remind you that Carborundum was handling fuel pellets in a glovebox.

During the SEC's Evaluation Report review, SC&A provided comments on the MCNP model used by NIOSH in 2015, and the source term used in the

calculation. NIOSH then revised the source term based on that in exposure models in August 2017 to address the SC&A's comments.

So the company did that experiment. However, SC&A's November 27th, 2018 review of NIOSH's updated model and dose rates resulted in these three findings that I mentioned, and these are the ones that require additional review.

So let's go to the next slide, which we have up there. Okay, and on Finding 1, SC&A commented that the factors NIOSH had used to enter into the MCNP used to convert photons to ambient dose equivalent from ICRP 74 should be changed. The issue apparently is that ICRP 74 provides two sets of factors that provide relatively small differences in dose estimates.

NIOSH is reviewing this issue. It's my understanding Tim Taulbee is familiar with this report. It's my understanding that one of these sets of factors is a little more up to date. So the Work Group will be awaiting their solutions and SC&A's review of what they come up with on that finding. Are you still hearing me okay?

Mr. Katz: Yes, you're okay. Thanks.

Member Roessler: Okay. Then on Finding 2, it had to do with the source bias settings used by NIOSH in the MCNP resulted in errors. SC&A pointed out that NIOSH used MCNP Verison 6.1, which they discovered has a calculation bug that was not corrected in the simulation set used by NIOSH.

NIOSH plans to re-run these simulations using MCNP Version 6.2, which corrects the bug. So it looks like we don't expect any problem on this, but we expect SC&A to review this and the Work Group will talk about it again at our next meeting.

Okay. Then on the next slide on Finding 3, again this is on external dose from plutonium, and this has to do with exposure geometry. That's why I was talking

about geometry before. We have to talk about decision, I guess.

Mr. Katz: Gen, your voice, don't let it trail.

Member Roessler: Okay. Again, I think I probably moved.

Mr. Katz: Okay, thanks.

Member Roessler: Okay. Dr. Anigstein from SC&A explained the problem that he discovered here using a photo of the glovebox used by Carborundum, and a diagram of the glovebox showing the location of the fuel pellet and the dosimeter.

In this finding, he pointed out the geometry settings used by NIOSH in an MCNP simulation were set, but that the dosimeters used to estimate dose was partially shielded. Thus, the dose calculated is too low. So the issue is the NIOSH MCNP model had geometry settings such that the plutonium pellets were located in the most likely locations, the glovebox surface.

The dosimeter location was one foot away outside the glovebox as required. However, those MCNP settings were such that the dosimeter was partially shielded by the floor of the glovebox. I'm going to change the wording here a little bit from the slide, because I'm thinking, I'm hoping maybe this will make a little more sense.

SC&A ran the MCNP with the pellets and the dosimeter both in higher locations, and got higher dose results, because with this setup the dosimeter is not partially shielded by the floor of the glovebox. So the bottom line here is that NIOSH is reviewing this issue, the whole issue actually, Issue 6, and the three findings, in particular this final one.

So on Slide 13, is somebody running the slides? Maybe they can't hear me.

Mr. Katz: No, we can hear you.

Member Roessler: Okay. So the Work Group conclusions were that NIOSH and SC&A need to come to an agreement on the appropriate MCNP setting to resolve these findings. The Work Group agrees with all other NIOSH resolutions, and of course all the resolutions need to be implemented in the revised Site Profile. So that's my conclusion, and I'll certainly take questions.

Mr. Katz: Right. Thank you, Gen. Questions from Board Members in the room?

(No response.)

Mr. Katz: Or from Board Members on the line?

(No response.)

Mr. Katz: So let me just clarify something here about the conclusions. The Work Group, these issues, the last issues that Gen addressed relating to the MCNP model, these are issues, they're as you gather I think, they're highly technical, they're relatively minor in certain respects in terms of --

They're not minor meaning unimportant, but they're in terms of sort of the Board's issues that it deals with, these are really sort of kind of minutiae in that sense, that they're highly technical and they're just about getting the model straight and right, and I had recommended to the Work Group and the Work Group had agreed to recommend.

So this is in effect a motion to the Board, that as far as the Board's concerned, the Site Profile review would be completed. The Work Group would continue on until these MCNP matters are resolved to their satisfaction. If there's any issue that comes up that needs to come to the Board, of course they would bring that back up with the Board.

But otherwise, we don't need to have another presentation on Carborundum for the Board's sense to close out the Site Profile. So that was my suggestion to the Work Group. They concurred with

that.

So this is -- actually, since it's a Work Group recommendation, it's a motion. It doesn't require a second, and it just requires then Board discussion and then if the Board has no issues with this, then we can have a Board vote.

Member Roessler: Thank you, Ted.

Mr. Katz: So any -- yeah sure. So any questions on that matter or discussion, including Board Members on the phone?

Member Kotelchuck: So --

Mr. Katz: Sure, Dave.

Member Kotelchuck: So the issue is that if we approve, we approve that --

Member Roessler: Dave, I cannot -- I can hear David, but I can't hear --

Member Kotelchuck: Okay. Can you hear me now?

Mr. Katz: Yeah.

Member Roessler: Oh, yes.

Member Kotelchuck: Okay, good. So if we approve, then that means that the review will continue to update the profile?

Mr. Katz: Yeah. So they'll pull the string all the way on these MCNP matters, in other words, keeping the Work Group involved and providing that there's no -- nothing comes up out of that that's of concern that should come before the full Board, this would be complete.

We will not bring this back up for the Board to approve again, but we'll -- in effect, we're approving it provisionally based on that all getting worked out correctly.

Member Kotelchuck: Okay, thank you.

Mr. Katz: Okay. Any other questions?

(No response.)

Mr. Katz: Okay. Then we have a Board vote on that. I'll just run alphabetically. So Anderson?

Member Anderson: Yes.

Mr. Katz: Beach?

Member Beach: Yes.

Mr. Katz: Clawson?

Member Clawson: Yes.

Mr. Katz: Field.

Member Field: Yes.

Mr. Katz: Kotelchuck?

Member Kotelchuck: Yes.

Mr. Katz: Lockey.

Member Lockey: Yes.

Mr. Katz: Richardson?

Member Richardson: Yes.

Mr. Katz: Roessler?

Member Roessler: Yes.

Mr. Katz: Schofield?

Member Schofield: Yes.

Mr. Katz: Valerio?

Member Valerio: Yes.

Mr. Katz: And Paul Ziemer, I don't know if you're on

with us or not.

(No response.)

Mr. Katz: Okay. He is absent, and I don't need to collect his vote on a Site Profile matter. We have a unanimous vote with his exception because he's not here, so it passes. Thank you very much. Thanks, Gen, for hanging with us. I know it's difficult to do this remotely. I much appreciate that.

Member Roessler: Well thank you for hanging in with me.

Mr. Katz: Sure, and we have a break. We've cut into a break a little bit, I think? No, we're okay. We have a break from 10:15 to 10:30, so I think we can just -- how much time do we have? Well, we have 15 minutes. If you want, we can do some Board work session matter before the break. Is that -- how's that? Yeah.

Mr. Katz: Okay. So someone, someone remind me if we're running out of time, and then we'll go. I don't want to cut your break short. Okay.

Well, the first item of business is scheduling of meetings for the next meetings that aren't scheduled. We have several matters. One, we have a location question for -- we have an April meeting face to face, April 17 to 18, and we have to find a spot for that.

So I have some thoughts and then I'm absolutely open to the Work Group Members' thoughts about these or other locations. Let's get your sense, particularly the chairs for the sites that are possibilities here. I mean one we don't know much about, but seems like would be a possibility is we're going to be hearing on Carnegie, right, SEC petition I'm hoping?

Superior Steel, I'm sorry. Superior Steel. It's in Carnegie, sorry, right, which is the Pittsburgh area. Sorry about that, and so that's one possibility. We

haven't been there. We've never been to Pittsburgh. We don't know much about this site other than what we've learned from the SEC petition and evaluation.

But that would be an opportunity for the Petitioner and others from that site to see the Board and hear the Board's discussion and so on, assuming that we don't dispatch this SEC petition at this meeting.

So we may want to hold on that question, seeing how the discussion goes on that today. We don't have to decide this until we leave this meeting, a location. But that's one, Pittsburgh.

Another that I have a question about because I'm not absolutely clear. I know a good bit of work has gotten done and the work's underway, but we've been to Chicago about a year ago, Argonne East, and so we have had some work completed since then and there's some work, if I recall from the coordination documents, that's coming to fruition soon.

So that's another opportunity for people from that site to hear the Board's discussion and contribute to that, so Chicago. And then the other sites, again also possibilities. Idaho Falls, as I understand it, we're not expecting anything within this time frame on the burial site.

However, we will have -- right. We will have sort of completed a good bit of work that we've been wrestling with for some time, V&V and so on for Idaho Falls for the petitioning Class that's still awaiting resolution there. So that's another thought, Idaho Falls.

And obviously there's a lot of work underway. Aside from that in particular related to Idaho Falls. So that's another possibility. Then I'm not clear about whether -- about timing for things being ready, but and we've been there a bunch, but there's of course there's both the Sandia and the LANL petition. We're addressing LANL to some extent, but it's an update session here at the meeting. There will be more work

coming. The timing of that is a little bit uncertain as to what might actually be ready in time.

And I guess my main concern is I would hate to go there hoping to have things ready and not having them ready, and I think the timing's kind of close there, but that's another thought. So those are the four locations that I've given some thought to, and let me just open this up for Board Members to contribute their thoughts.

And of course, SC&A and NIOSH, if you have thoughts about locations beyond what I've discussed already, we're happy to hear from you too.

Member Anderson: What are the dates again?

Mr. Katz: So the dates are April 17th through 18th.

Member Anderson: Okay.

Mr. Katz: What does anybody think, and maybe hear from the chairs of these different sites too, if you have particular thoughts, seeing what is expected to be delivered between now and then and so on.

Member Anderson: We'll have things delivered for Pittsburgh-Carnegie.

Mr. Katz: So we have a presentation for Pittsburgh here tomorrow.

Member Beach: And I don't think there's a Work Group for Pittsburgh or for Superior Steel.

Mr. Katz: No, we do not have a -- that's correct, that's correct.

Member Beach: I personally would look towards that since we've never been there, and giving them -- the Petitioners an opportunity to discuss it. And then I was thinking Metals and Controls again. We may be ready for that but I'm not sure at this time.

Mr. Katz: Okay, so I don't know if you could --

Member Beach: We were just there.

Mr. Katz: Yeah. So I don't know if you could hear that, but that would be the Boston area. I mean not the Boston area, but between Boston and --

Member Beach: Providence?

Mr. Katz: And Providence, right, near Providence. That's M&C, yeah.

Member Beach: But if I was choosing between those two, I'd still choose the Superior Steel, since we've never been there and giving them that opportunity.

Mr. Katz: Yeah. Thank you, Josie. Other Board Members' thoughts?

Member Valerio: Ted, this is Loretta.

Mr. Katz: Go ahead, Loretta.

Member Valerio: My first option would be Superior Steel in Pittsburgh. My second option would be Argonne East in Chicago.

Mr. Katz: Okay, thank you.

Member Schofield: This is Phil. I'm kind of leaning towards Pittsburgh, just because as Josie said we have not been there and this gives these people an opportunity to speak.

Mr. Katz: Okay. I'm here seeing some nodding of heads here. Dave.

Member Kotelchuck: I agree. We haven't been there, and we certainly want to have one meeting at a place where give the claimants a chance to be there and talk about their situation.

Mr. Katz: Okay, okay. Any other thoughts from folks on the phone?

(No response.)

Mr. Katz: Okay, and from either SC&A or NIOSH? Do you have anything you want to add?

(No response.)

Mr. Katz: Okay. So let's -- we have a presentation and some discussion on Pittsburgh, but let's assume that that's going to be a go at this point. Super, thank you. Okay. We still have a few minutes. We could -- let's see what else we could get done.

Okay, so then scheduling. The next teleconference that we need to schedule, we've scheduled up to this point is -- would be a teleconference the week of October 14th. So if you'd look at your calendars and see how that week looks.

Member Lockey: Did you say October?

Mr. Katz: Yes. October, October 14th next year, next year.

(Off mic comments.)

Member Anderson: That's Columbus Day.

Mr. Katz: Yeah. I'm not talking about the day; I'm talking about the week.

Member Anderson: Oh, okay.

Mr. Katz: Yeah. But thank you. Thank you. No, I appreciate you mentioning that. I knew that Columbus Day was in there somewhere.

Member Beach: The 14th is Columbus Day.

Mr. Katz: Yeah. It would be the Monday, yeah.

Member Beach: That's clear for me.

Mr. Katz: So I mean the tradition when we can do it is --- would be the 16th, the Wednesday. We tend to like those Wednesdays. Does that work? I'm hearing, seeing nods of heads in this room. How about from people on the line? The 16th,

Wednesday, how does that work?

Member Schofield: It works for me.

Member Valerio: Works for me.

Member Anderson: What time would it be? The usual?

Mr. Katz: Yeah. The usual's 11:00 a.m. Eastern Time.

Member Anderson: Sure.

Mr. Katz: Okay. So let's plan on that, and then next in-person meeting, which would be the next December meeting, because we do this a year out, I mean the best week would be the week of December 9th. But of course we'll move backward or forward, depending on what works for folks.

So again, you know, we like to do Wednesdays and Thursdays when we can but --

Member Anderson: You can't do Tuesday because it's my birthday.

Mr. Katz: Cannot do Tuesday or we can do Tuesday because it's your birthday?

Member Anderson: Oh, depends on where it is.

Mr. Katz: Okay, Hawaii. How about --

Member Anderson: Hawaii sounds good. It's not Amchitka.

Mr. Katz: I don't think there's anyone on this Board hardy enough for Amchitka in December.

Member Anderson: Not anymore.

Member Ziemer: Hey Ted, it's Paul Ziemer.

Mr. Katz: Yes. Hi, Paul.

Member Ziemer: That date will work for me if I'm

not back to the hospital again next year.

Mr. Katz: We hope not, we hope not, and it's good to hear your voice, Paul. Thank you.

Member Ziemer: Thank you.

Mr. Katz: So we're looking at -- that would be 9, 10, the 11th and 12th or --

(Off mic comments.)

Mr. Katz: Okay.

Member Beach: Works for me.

Mr. Katz: Okay. So let's write that in, December 11th and 12th. Okay, and then we're pretty close to our break and the rest of what we have to do isn't that quick. So let's just go a few minutes early for break.

Member Anderson: We don't have a location for that December.

Mr. Katz: So we do. We think we have Pittsburgh. Unless something comes up, it's Pittsburgh.

Member Anderson: That's the December one?

Mr. Katz: Oh no, no, wait. That's for April, sorry.

Member Anderson: Oh.

Mr. Katz: No, we don't have a location -- we don't do locations more than one meeting out, only because we don't know what's going to be on our plate.

Member Anderson: That's fine. I just --

Mr. Katz: Yeah, yeah. But I'm thinking of Hawaii for you, right. Okay. So we're on break and please be back. We have the Y-12 SEC plant, so it's important to be back on time at 10:30 California Pacific Time. Thank you.

(Whereupon, the above-entitled matter went off the record at 10:08 a.m. and resumed at 10:31 a.m.)

Mr. Katz: Welcome back, everybody, to the Advisory Board on Radiation and Worker Health. We just were out for a break and we're back, about to hear the SEC presentation for Y-12. Dr. Lockey is just to note for the record recused for this session and he is gone from the table, and actually gone from the room.

Let me just check on my Board Members on the phone to see that I have you again. Gen, are you there?

Member Roessler: I'm here.

Mr. Katz: And Phil, how about you?

Member Schofield: I'm here.

Mr. Katz: And Paul, are you there? Paul?

(No response.)

Mr. Katz: How about Bill Field? Bill?

(No response.)

Mr. Katz: And how about Andy? Was that a yes?

(No response.)

Mr. Katz: Okay. Let's wait a moment and see if we can gather more of our Board Members from the phone.

Member Anderson: I'm here.

Mr. Katz: Okay, Andy's there. Let me go back again.

Member Anderson: I was having trouble getting here.

Mr. Katz: And how about Paul, are you back?

(No response.)

Mr. Katz: Did I hear from Phil? Did Phil say yes? Phil, are you there?

Member Schofield: Who?

Mr. Katz: Phil, is that you?

Member Schofield: This is Phil. I thought you said Bill.

Mr. Katz: Okay, great. Okay. So I think we have everyone. But wait, Bill Field? Bill Field, are you on mute?

Member Field: Yes, I'm on. I'm on, Ted.

Mr. Katz: Okay, you're with us, good. Okay. So we have everyone but Paul, and I think we can go --

Member Valerio: And this is --

Mr. Katz: Oh Loretta, thank you, sorry. Loretta, I didn't -- I shouldn't have forgotten you, right. Thank you. Okay. Off we go, Lara, thank you.

Y-12 Plant SEC Petition

Dr. Hughes: Okay. Are we already -- can you hear me okay? Thanks, Ted. Good morning, everybody. This is an SEC Petition Evaluation by NIOSH for the Y-12 plant. The main discussion points here are thorium and plutonium-241.

At this point, I'd like to acknowledge our contractor support from ORAU, Joe Guido, who did the very large majority of this work, pulling all this research together, because dealing with the Y-12 plant, we're dealing with -- you deal with a lot of information.

So the Y-12 plant has -- there are four previous SEC classes. SEC-18 and 28 were -- they were done early in the program. They're designated SEC Class from 1943 through 1957. Those two classes were revised later in the program history, SEC-98 and SEC-186. The main objective of those two Evaluation Reports was to reword an earlier Class.

Earlier in the program we often included a language in the Class Definition that wasn't workable for DOL or DOE to administer, DOL to administer to classes. So that's why we have four early SEC classes. So the entire period from 1943 through 1947 is currently already in SEC for Y-12.

The current is SEC-251. It's an 8314 petition, which means NIOSH has designated that there was a petition for which we could not do dose reconstruction. A claimant was identified in October 2018, the petition received November 9th, and the Evaluation Report was completed November 26th of this year.

Just a very brief, a very, very brief Y-12 history. This is a color photograph of the site. I'm not sure what the date is, but you can see that it's a very large site. It's 811 acres. It's about two-thirds of a mile long by three miles long, and at its peak employment, it had about 22,000 workers.

The EEOICPA-covered period is 1942 to the present, and NIOSH currently has about 6,500 claims in various forms of the dose reconstruction process. Most of them are complete.

The Y-12 history, we typically talk of three eras. The first era, 1942 through 1946 was the uranium isotope separation, the early uranium enrichment process using what they call calutrons.

It's an electromagnetic process to separate out the uranium-235 that was used in nuclear weapons production. The second era, 1947 through 1992, it's more generic Cold War nuclear weapons components manufacturing. They would produce and test key components of nuclear weapons. They are maintaining the stockpile of highly enriched uranium and work on technology development for new weapons designs.

The third era post -- after the end of the Cold War, there are multiple new missions. They're still storing

the highly enriched uranium. They continue to work on weapons port production on a smaller scale. Then they're involved in D&D decommissioning operations and they work on environmental and waste management.

So for this petition, we're looking at two different -- we came up with two different infeasibilities that were found over the past few years of research. The first one was regarding thorium production. This was -- this came out of continued research from yeah, outstanding issues, and part of this issue came up in the Fernald SEC when they had a similar issue with their whole body count data. So this is coming out of those dose findings.

So what Y-12 did with regards to thorium parts production, they started production of metal parts of made of thorium in 1959. They used thorium pellets that were received at the site. They were pressed into metal electrodes, and those electrodes were arc-melded to form these metal ingots that they needed for whatever they were producing.

So these ingots were pressed, rolled and machined to various forms that were needed. The scraps from this process were salvaged and also pressed into electrodes and run through the cycle again. The main issue from a contamination standpoint is not just the thorium but also the radium and the thorium, other thorium progeny that are volatilized during the arc melting.

The arc melting process involves the melting of the thorium at temperatures that are above the boiling point of radium. This major thorium processing ended in the mid-1970's. However, parts refurbishment and special projects continued until 1999. The thorium production involved Buildings 9202, 9766 and 9215.

The exposure potential for thorium. The arc melting releases airborne contamination. The machining, all the process down the line releases airborne

contamination. A big issue is the ingot casting by arc melting disrupts the thorium decay chain and much of the radium contained in the metal is vaporized.

This releases large quantities of radium that are deposited on the inside of the furnace. The radium-228 is a major radiological hazard, and the ingot that is produced has an enriched outer radium layer, so when it's afterwards machined there's a big problem of volatilizing these components.

Also the thorium, the subseries further down in the decay chain quickly were turned into secular equilibrium. So this was the first part of this infeasibility. The second involves plutonium-241, and we actually arrived at this by doing the exotics radionuclide research for Oak Ridge National Laboratory.

It turns out that ORNL actually used a facility at Y-12 to do much of that research or that production. So when we came across this infeasibility that we cannot reconstruct plutonium-241 that was done by Oak Ridge National Lab. We realized that it was actually done at Y-12.

So these operations are staffed by ORNL but at the Y-12 site in Building 9204-3. So for that reason, we have to -- the SEC is site-specific, so this is actually a Y-12 issue for our program. So again, this was part of the ORNL isotope production program. These plutonium-241 and other plutonium and other isotopes were produced since 1953 until the late 1960's.

What they did, they used the old calutrons at Y-12 that were initially used for uranium enrichment to separate other radionuclides by their mass, and then using these -- they were selling these products to other national labs or interested parties.

So this facility housed calutrons, gloveboxes and processing laboratory, other equipment that was needed down the line to purify these components so

they could be sold. They also had the calutron wash area, so they had to clean these instruments before they were reused. There was also packaging, storage and shipping.

The specific plutonium-241 production quantities ranged -- was in the milligram to gram range, and that is a lot when you talk about plutonium, relatively speaking. The plutonium-241 exposure potential, it wasn't really considered a huge deal at the time. It was not considered to be the biggest problem, because it's a beta emitter. It has 20.8 keV maximum beta. That's not very high energy for beta.

However, it has a very short half-life, only 14.4 years. So we end up with a very high specific activity. So even though it doesn't look -- it looks fairly innocuous compared to other plutonium isotopes. However, if plutonium-241 is present in the mixture at the percentage like, I don't know, it's only several percentage points, it becomes the dose-dominating component of this mixture. So that is a problem.

So generally to evaluate these two infeasibilities, we looked at various sources of available information. We looked at our Site Profile, technical information, documents, the NIOSH Site Research Database, existing claimant files, electronic databases, and we did I think four or five interviews with four or more employees.

Those were classified. They had to be done in classified space down at Y-12, and also looked at scientific publications. So regarding the internal data that we have for thorium that was looked at, so they did, Y-12 did do lung counts for thorium from 1958 to 1982. There are over 10,000 data points available.

They used the Y-12 in vivo facility using a sodium iodide detector system. However, what is available from this in vivo count is the results reported in milligrams of thorium, and that's all that is available. What we would need to assign a plausible accurate

dose would be calibration and counts per channel data to potentially assess the intakes.

So just we would need what we call the raw count data, what they actually saw when doing these lung counts, because of the thorium chain this equilibrium, which it's very -- it's impossible to assign dose based -- if you just have to mass, a mass unit of thorium. Even Y-12 has stipulated, considered this more of a qualitative measure, qualitative method.

We have no measurement for the radium-228. We have documentation from 1978. At some point between 1976 and '78, they changed the recording procedure, and we think that post-1976 the count data might be available to us. That's still something that we need to research. So I spent considerable time looking for the overall count data for these thorium in vivo counts and we have finally concluded that we're probably not going to find them. They don't seem to exist. They might have been computerized at an earlier time and they're not available.

We do think that the post-1976 data is available and could potentially be analyzed, but we wanted to move ahead with this part of the SEC as to not hold out on it, and there will be continued evaluation of the following time period. We also looked at thorium air data. There is gross general air and breathing zone operational data available. The majority of this is general air data.

There is a Y-12 thorium air sample database that we looked at. We concluded that this database has issues with data pedigree and completeness, and is not usable for our program. Breathing zone data and operational samples are available, but they're not sufficient in quantity for an intake approach for all years.

For plutonium-241, there's generally an intake of plutonium-241 due to its low energy beta. It's hard to detect. There's no plutonium-241 specific

bioassay available before 1967, and that is because they didn't have a method in place. In 1967, they had developed a method, and we have a total of 222 samples that were collected between 1967 and 1985.

There were 74 samples from 1967. So it looks like once they started with the method, that they made an effort to detect. This method, the method that was developed in 1967 was an ion exchange method followed by a precipitation step, followed by liquid ventilation counting.

So we have these two different infeasibilities. So as for the Y-12, the time line, the covered period 1943 to 1957 is already an SEC. The thorium operation infeasibility goes from January 1st, 1959 through December 31st, 1976. The infeasibility regarding plutonium-241 operations goes from January 1st, 1954 through December 31st, 1966, which overlaying those two, we're looking at current infeasibility, January 1st, 1958 through December 31st, 1976, with a path forward to evaluate the thorium feasibility beginning January 1st, 1977.

So the proposed Class Definition finding is all employees of the Department of Energy, its predecessor agencies and their contractors and subcontractors who worked at the Y-12 plant in Oak Ridge, Tennessee during the period January 1st, 1958 through December 31st, 1976, for a number of work days aggregating at least 250 work days occurring either solely under this employment or in combination with work days, within the parameters established for one or more other classes of employees in the Special Exposure Cohort.

Here's our summary slide. So the thorium and plutonium-241 infeasibility and all other nuclides at this point can be reconstructed. That dose can be used for partial dose reconstruction for claims that wouldn't fall in the SEC, and that's it. So if you have any questions.

Mr. Katz: Right. So questions from Board Members

in the room? Dave.

Member Richardson: Thank you very much. I feel like I'm learning a lot. One question was in the report, and here just as a brief issue. The issue of the feasibility of reconstructing external dose for the Y-12 cohort. My recollection was that there was -- that data were available subsequent to 1961, but prior to 1961 there's very little external dosimetry information or there are many gaps in the external dosimetry information.

So I was interested in the feasibility for the period 1958 to '61 of reconstructing the external dose.

Dr. Hughes: We have not really looked into that with regards to this SEC evaluation. Usually we -- once we identify an infeasibility, that's kind of what we're focused and recommend the Class. There are issues with -- I'm not too familiar with the external dosimetry issues at this point. I know they have been discussed in the past, but I would have to get back to you on those.

Member Richardson: Okay, and I appreciate that. I just believe there's implications for what we state as feasible and infeasible in terms of what fraction of the dose is reconstructed. If there's a statement that it's infeasible, then you don't reconstruct it. If for one component of the dose it's feasible, am I -- than you would proceed?

Mr. Katz: Yeah. I mean you do a partial dose reconstruction for whatever doses can be reconstructed.

Member Richardson: Okay. Anyway, I mean it's -- could I ask a -- at Y-12, there was -- and this again is my recollection. There's lots of bioassay data, and was the bioassay information, is it not used, was it not used at Y-12 for assessing thorium ever, because we've covered air sampling and in vivo counting.

Dr. Hughes: They did the in vivo counting for -- that

was their approach to assess intakes. But yeah, what they actually did with it, we don't -- I'm not sure. But so what we have is those in vivo counts, and they've been looked at and we've been trying to come up with a method to use those for internal dose assignment. We've come to the conclusion that we just -- the milligram result is just not sufficient to do that.

Member Richardson: Right, and that seems consistent with the quotes that you have in the report about their own assessment of the limitations of the in vivo program, which makes it interesting, I guess, to me that there wouldn't be a -- it wouldn't be coupled over with bioassay.

Dr. Neton: This is Jim. There's not a really good bioassay method for thorium. It's excreted very poorly in the urine, so I don't think it's ever really been routinely used at a site for bioassay for thorium intakes. I don't recall if they did fecal samples. If they did, it would have been on an incident-specific basis. There was never a routine thorium monitoring program to my knowledge at that facility so --

Dr. Hughes: I think that's correct. I think that -- yeah, there might have been fecal, but I'm not sure.

Dr. Neton: Right, and then to your question on external, we do have a coworker model for external dosimetry in the Site Profile for Y-12, and I don't know -- that is actually under review through an SC&A assessment or review, and we're looking at that now. If it comes out that we end up that we can't feasibly reconstruct external doses, we certainly would make -- would come to that conclusion and not do dose reconstructions.

Member Richardson: Okay. Thank you very much. Those are both very useful.

Mr. Katz: Other questions? Oh, David.

Member Kotelchuck: Yes. The other David.

Mr. Katz: The other David, Kotelchuck.

Member Kotelchuck: Is this a recommendation for the Board to grant an SEC, or is this going -- or is this a recommendation to go to a Work Group to further look at it?

Mr. Katz: When NIOSH does an 83.14, it's because they found it infeasible through dose reconstruction, trying to do a case that they can't complete, a dose reconstruction case. So that it's already -- it's coming to the Board so the Board can approve it, because the Board has to -- has to support --

Well, it doesn't have to, but we need a Board recommendation before we go to HHS. Member Kotelchuck: Thank you.

Mr. Katz: Yeah. Any other questions in the room? Josie.

Member Beach: Not a technical question. There is a Work Group, is there not on Y-12?

Mr. Katz: There is not. So this is -- there was sort of Work Group before there were Work Groups in the formal sense that we've had them now all these years. There was a group. Most of those Members, I think, I'm not sure how many of them are with us even anymore. So we would have to constitute a group if we're going to have a Y-12 follow-up, but yeah.

How about Board Members on the line? Any questions for Lara?

Member Valerio: This is Loretta, I have a question.

Mr. Katz: Go ahead, Loretta. You're really clear.

Member Valerio: So on page 12 of her presentation, are the 74 samples from 1967 part of the 222 samples collected between 1967 and 1985?

Dr. Hughes: Yes. As far as I know, they are.

Member Valerio: Okay. So it's not a question but

more an observation. So that leaves roughly 148 samples from 1967 to 1985 for internal samples for plutonium.

So I understand that moving forward, you're going to -- you know, NIOSH is going to continue to evaluate the thorium feasibility beginning in January of 1977, and I'm assuming that they'll continue to evaluate the plutonium as well?

Dr. Hughes: Yeah. I think we're going to look into it. I think some of it has to do also with the production winding down. This was a fairly small scale operation compared to the thorium operation. So but yeah, we can certainly address that.

Member Valerio: I'm sorry. Can you speak up just a little bit?

Dr. Hughes: Sorry. Yeah. We can look into it some more. I mean it was kind of -- the Class was cut off because data is available. But they can also -- there certainly would -- the analysis would certainly benefit from, you know, looking more detailed at the operational quantities that were produced in the time after 1967.

Member Valerio: Thank you.

Mr. Katz: Thanks Loretta. Are there other Board Members on the line with questions?

(No response.)

Mr. Katz: Hearing none, do we have a motion from a Board Member?

Member Beach: Do we want to -- is there a petitioner comments at all or --

Mr. Katz: Oh yeah, sorry. I'm very sorry about that. Yes, thank you for the reminder. Do we have a petitioner on the line who wants to comment? We often don't for 83.14s but --

(No response.)

Mr. Katz: Okay. Asking again, petitioner are you on the line for this, and if you are you don't need to comment. But if you wish to comment, this is your opportunity.

(No response.)

Mr. Katz: Okay. How about now? Do we have a motion?

Member Beach: Yes, this is -- I'll make a recommendation to accept NIOSH's recommendation to add this as a Class.

Mr. Katz: Thank you, Josie.

Member Clawson: I second it.

Mr. Katz: Okay, it's seconded, which means it's up for discussion. Board Members, do you have any discussion of the motion?

(No response.)

Mr. Katz: And the Class has been defined pretty clearly in the presentation. You have that. We know what we're proposing. Okay. Hearing none, then I think we move to vote, and if I don't have all my Board Members, then whoever might be missing for an SEC petition, we'll collect their votes after the meeting. So Anderson?

Member Anderson: Yes.

Mr. Katz: Beach?

Member Anderson: Yes.

Mr. Katz: Clawson?

Member Clawson: Yes.

Mr. Katz: Field.

Member Field: Yes.

Mr. Katz: Kotelchuck?

Member Kotelchuck: Yes.

Mr. Katz: Just note for the record Dr. Lockey is recused from this. Richardson?

Member Richardson: Yes.

Mr. Katz: Roessler?

Member Roessler: Yes.

Mr. Katz: Schofield?

Member Schofield: Yes.

Mr. Katz: Valerio?

Member Valerio: Yes.

Mr. Katz: And Ziemer? Paul, are you back with us?

(No response.)

Mr. Katz: Okay. Paul was absent at the outset of this, I'm assuming he's still absent. So anyway, it's unanimous among the Board Members who could vote and are present, and that's sufficient for the motion to pass. I'll collect absentee votes, but good work. Lara, thanks for a very clear, nice presentation of this SEC Petition Evaluation.

Dr. Hughes: Thank you.

Mr. Katz: Much appreciated. All right then. So we are early for lunch. It's eleven o'clock here. We have another hour. I will say my guess at what we have left on the work sessions is we can do it all during the work session if we want.

If it makes more sense to break now and go for a long, early lunch, what do you want to do? Or we can start launching into work session stuff. But we're going to get that all done within an hour either way.

Participant: Let's have a longer lunch.

Mr. Katz: So why don't we do that? Why don't we just break now and lunch break ends at -- please be back at 1:30. We'll be on for the SEC petitions update from LaVon.

Participant: Very good.

Mr. Katz: Very good. Thanks everyone.

(Whereupon, the above-entitled matter went off the record at 11:59 a.m. and 1:29 p.m.)

Mr. Katz: Are we live again and we have the phone on? Yeah, okay. Thank you. So welcome back everybody, the Advisory Board on Radiation and Worker Health. We're on our afternoon session of our first day here. So let me make a couple of notes, just or maybe just one note.

We do have a public comment session today. It begins at 5:00 p.m. So for people on the phone as well as anyone, I can only see one or two strange faces in the room. People who want -- if you're here and you want to make public comment, there's a sign-up sheet outside this door on the table.

Please do sign up just to let us know who -- because we'll go first with people who are in the room, and also first with people who have something to say related to the California sites that we're addressing this afternoon.

For people on the phone, of course you don't have to. You can't really sign up, don't have to. Don't send an email or anything like that. We'll get to you. We have a few people signed up already who did get in touch with me before this meeting, but for the rest of you on the phone, we'll get to you after we get through the folks in the room.

So just hang in with us, but please be on the line by five, and we might even, depending on how things go, we might even get to begin sooner than five. But we'll definitely at least go through the five o'clock mark, to make sure we capture everyone who intends

to have public comments.

We have all of our Members in the room who were here earlier, so their attendance is accounted for. Let me just check on my Board Members who are on the phone, and see who we have. So Bill Field, are you with us?

(No response.)

Mr. Katz: How about Gen Roessler?

(No response.)

Mr. Katz: I'm not even sure anyone on the phone can speak to me. Is there -- Phil Schofield, are you on the line? Are we sure that we have an incoming line?

Participant: Yeah.

Mr. Katz: Okay. Somebody on the line. Would somebody speak up so I know that people hear me? Loretta? I'm not confident. Somebody on the phone, anybody, anybody on the phone, would you speak up?

(Off mic comments.)

Mr. Katz: No, no. No, we don't have a quorum so there's something wrong here, because I'm sure I had Board Members on there and they would be trying to speak. So there's something --

(Off mic comments.)

Mr. Katz: I think you should try reconnecting, because that's all I can think of. So folks on the phone, just hang in there. We're going to dial back in if you can hear me now, but maybe you can hear me but can't be heard.

Participant: Which I can send a message to everybody to ask if they're --

Mr. Katz: Yeah, yeah, why not. If you can do that

easily, that would be great. We had an issue this morning that was sort of like this, so I'm thinking it's just something about this line here.

(Off mic comments.)

Mr. Katz: Okay. Someone, someone on the phone line, anyone on the phone line, can you let me know you can hear me? Nope, it's not coming through.

(Whereupon, the above-entitled matter went off the record at 1:34 p.m. and resumed at 1:45 p.m.)

Mr. Katz: Okay. Testing again, 1-2-3, testing. Phil, can you hear me?

Member Schofield: Ted, that's much better.

Member Field: Yeah, much better. Very clear.

Mr. Katz: Okay, that's glorious. Thank you for being with us. So let me get -- I don't think you heard any of the preliminaries then. Let me just run through them again very quickly. First one I'm going to say is please no one put this call on hold at any point.

Hang up, dial back in. But don't put the call on hold, and also please everybody but someone who's speaking to the group, mute your phone and press *6 if you don't have a mute button to mute your phone. *6 will mute your phone, thanks.

So just one important note before we get started that I made earlier. We have a public comment session this afternoon at 5:00 p.m. It's possible we might even get to it before 5:00 p.m. So please everyone on the line who has public comments, please be in attendance at five, so that if we get to it and get through public comments early, you'll still be on the line before we leave, since that's the last portion of the day.

Member Field: And Ted you're referring to 5:00 p.m. Pacific time?

Mr. Katz: I am, and thank you Bill for clarifying that. That's 5:00 p.m. Pacific Time for everybody, eight o'clock Eastern Time. So I think with no further ado, we'll move on. We have LaVon Rutherford giving us an SEC Update, and then we have a Board Work Session later after that this afternoon. We're addressing the two California SEC petitions, and then we have public comment.

Mr. Rutherford: All right. Can everybody hear me?

Member Roessler: Yes. Did you take roll call?

Mr. Katz: I'm sorry Gen, what's that?

Member Roessler: Did you take roll call when we --

Mr. Katz: Oh, I'm sorry, thank you. I managed not to take roll call. So I've heard Bill and Gen, so how about Paul Ziemer?

Member Ziemer: Yes, I'm here.

Mr. Katz: And Loretta Valerio?

Member Valerio: Yes, I'm here.

Mr. Katz: And who am I missing? And Henry Anderson?

Member Anderson: I'm here.

Mr. Katz: Andy.

Member Schofield: And I'm here.

Mr. Katz: Yeah. Phil's already been on there. So okay. So we have all our Board Members on the line. Thank you.

SEC Update

Mr. Rutherford: All right. This is LaVon Rutherford. I'm the SEC Health Physics team leader. I'm going to give the SEC Update. We give this update at every Advisory Board meeting. We'll talk about petitions

and qualifications under evaluation, currently under Board review, and potential 83.14s.

A little summary. We've had 251 petitions to date. We have one petition that at this time, at the time of the presentation was in the qualification process. However, that petition did not qualify. We have two petitions that are in evaluation, and we have ten reports with the Advisory Board. As you can see, we have a few other numbers up there.

The petition that did not qualify was a petition for Clinton Engineering Works from 1943 to 1949. We do have a Class for that period. This was a specific petition for workers who did not fit into that Class.

Sandia National Laboratory, these are petitions under evaluation. This is the remaining period from 1997 through 2005. If you remember, we added a Class for '95 and '96 at the last Board meeting. We expect completion in March of next year.

Lawrence Livermore National Lab. Again, this is another petition that has the remaining years of 1990 to 2014. We expect this report to be completed in May of next year.

Okay. Petitions that are with the Advisory Board at various stages. Hanford. This SEC-56, NIOSH is still reviewing documentation to determine whether prime contractors, radiological control program, was meeting bioassay requirements, and I'm sure Mr. Clawson will have more of an update during the Work Group sessions.

Savannah River Site. NIOSH is working to resolve issues raised by SC&A in the Work Group. Sorry. Los Alamos National Lab. We did have a Work Group meeting recently, and we do have an update scheduled for tomorrow afternoon. Idaho National Lab, this petition is with the Advisory Board. They're still reviewing the proposed Class definition in the initial Evaluation Report.

Argonne National Lab West. This petition says it's with the Advisory Board and SC&A. However, we are working issues that -- working to resolve issues that were identified by SC&A at this time.

Area IV Santa Susana. We do have a petition update scheduled for later I think this afternoon.

Metals and Controls, there again is an update scheduled, and that one's for tomorrow. Oh, we're jumping all over the place.

De Soto Avenue Facility. After the Santa Susana update, we have an update scheduled for De Soto as well.

Superior Steel is a new 83.13 petition/evaluation we recently completed. It covers the years 1952 and 1957, and Dr. Lobaugh will be presenting that tomorrow.

Y-12 Plant. This is the petition 83.14 that was just discussed by Dr. Hughes, and the Board recommended -- agreed with NIOSH's recommendation to add a Class. This table at the end is just a summary table of the things I just -- of the sites I just went over. These are the petitions that are awaiting some action at some point. Right now we have no 83.14s in the queue for anything at this time, and that's it. Questions.

Mr. Katz: Questions from anyone in the room? Or from any Board Members on the line?

(No response.)

Member Valerio: None here.

Mr. Katz: I have a question --

Member Ziemer: None here.

Mr. Katz: I have a question for Paul Ziemer. You, we lost you at some point, but we don't know when. We had the Y-12 presentation.

Member Ziemer: I missed that completely, so you took a vote on what?

Mr. Katz: So we took a vote on Y-12 to add that Class. It's an 83.14 and you have the presentation and the materials for it.

Member Ziemer: I have the materials.

Mr. Katz: And it was unanimous. Everyone, with one recusal, voted in favor of adding that Class. But if you haven't had time to go through the materials yet though, we'll deal with this after the meeting.

Member Ziemer: Yeah, let me deal with it after. Was there any discussion on that item?

Mr. Katz: There was very minimal discussion.

Member Ziemer: Minimal, okay.

Mr. Katz: Yes.

Member Ziemer: I just -- I wanted to make sure I didn't miss any issues that might have been raised at the meeting?

Mr. Katz: Yeah, yeah. There were some -- there were some questions, Dr. Richardson and others on some items, but none that were really probative for the matter on the table.

Member Ziemer: Yeah. Well let me -- let me get back to you Ted.

Mr. Katz: Yeah, that's fine.

Member Ziemer: Because I haven't had a chance to go through those documents.

Mr. Katz: No absolutely, absolutely.

Member Ziemer: Yeah. So I'll follow up with you.

Mr. Katz: Right.

Member Ziemer: Thank you. Okay, and that takes

care of the SEC petitions update then, unless any other Board Member on the line had questions possibly for LaVon?

(No response.)

Board Work Session

Mr. Katz: No. Hearing none, okay. So then we move into Board Work Session, and I can -- why don't we do the Work Groups first, and then I'll run through the August public comments after that.

So I am -- I'm going to run alphabetically, and I'll skip ones where I know that there's no update in effect. But some I may not be clear about and I'll ask about them. It may not be an update for all of them just the same. The first is Ames. Dr. Kotelchuck.

Member Kotelchuck: Really nothing new, nothing new to report.

Mr. Katz: Right, okay, and Argonne East. Brad?

Member Clawson: Yes. NIOSH actually delivered a paper to SC&A, and I believe it's in SC&A's hands. I believe it was delivered in October. So you've got -- SC&A's got that; correct?

Mr. Stiver: Yeah. Actually, we delivered our response in October, so it's in NIOSH's court.

Member Clawson: Okay.

Mr. Katz: Okay. Is there -- was it just one item that was awaited? Okay, okay. Blockson, I don't -- there's no update for Blockson. And Josie, Brookhaven?

Member Beach: There's no change. We're still just waiting for I believe the external TBD to be issued, and it just keeps moving back, not high priority.

Mr. Katz: Thank you and Carborundum we've heard from today. Dose Reconstruction Review Methods

have not met. Fernald, Brad.

Member Clawson: Actually main Site Profile was completed in the last few weeks.

Mr. Katz: Oh right. So we can actually -- we can actually retire Fernald for now. So I'll do that. Early retirement, okay. Hanford, Brad.

Member Clawson: Hanford we're still working on. I talked to Jim a little bit today about it. We've still got some -- they're still pulling data and doing some research data. But we did have a meeting to be able to get the matrix set up and review everything, and we're on our path forward.

Mr. Katz: Thank you Brad. Idaho National Lab. Phil on the phone.

Member Schofield: Yeah. We've got -- there's no new updates for the meeting today on Idaho National Lab, but we've got some -- well, we need to have a group meeting to kind of get back where we, exactly where we want to be. There's been a lot of data looked at by both SC&A and NIOSH that we need to go over.

Mr. Katz: So Phil, I can say a thing at least. SC&A, we finally -- we have gotten the rest of the data we needed from the cases for SC&A to complete their V&V work on the Class that was proposed by NIOSH. So that, that work is underway and I think is probably within a couple of months, will be ripe, right, for the Work Group, is that right?

So we're probably looking at a late February or March meeting? Is that -- late February? Thanks.

Member Schofield: Or March.

Mr. Katz: Okay. So you've got that. I know there's other items. That's not all that there is on our plate for INL, but that's an important item. Okay. Lawrence, Berkeley, there's no update there at this point I believe. LANL? Josie.

(Simultaneous speaking.)

Mr. Katz: Well we actually -- we have this tomorrow on the agenda so --

Member Beach: Yes.

Mr. Katz: And Metals and Controls on the agenda for tomorrow as well. We've had a Work Group meeting, but we'll hear a lot more about that tomorrow. Mound, Josie?

Member Beach: There's -- that's one that should be retired also. We've completed all our TBD work. Unless there's something different I don't know.

Mr. Katz: I'll take care of that, thank you. Nevada Test Site.

Member Clawson: Actually, we've got one item left with -- I believe it's with ORAU at this time, and then it will be retired.

Mr. Katz: Yeah. Do we have a sense, a timing sense there? That NTS has been with us for quite a while.

(Off mic comment.)

Mr. Katz: Can you come to a mic? Thanks.

Mr. Rutherford: Yeah. We don't have a firm date yet, but we did receive the data that we need, I believe. And so I can get -- I'll send the Board a firm date once the schedule's finalized since we got that data.

Mr. Katz: Okay. Thank you very much. Let's see. ORNL. Gen? Gen, are you on the line for ORNL?

Member Roessler: Okay. I was on mute and talking.

Mr. Katz: Okay.

Member Roessler: I don't think there's -- I don't have any updates, but I think Dr. Hughes is on the phone, so maybe she could chime in and let us know.

Mr. Katz: Yeah. Lara's right here, thanks.

Dr. Hughes: Yeah, there's no change from last time. We still owe the Work Group a response to the SC&A review. But it's going to be a while before that's out.

Mr. Katz: It's going to be a while, okay.

Dr. Hughes: Yes.

Mr. Katz: Okay. Thank you, Lara. Okay. Portsmouth, Paducah, K-25. That's Phil.

Member Schofield: I don't have anything new to report on that. We probably should have a phone conversation so that we can just totally close those out. I believe there's a couple of minor matrix issues still outstanding. But to be honest, we haven't looked at it in a while.

Mr. Katz: Okay. Well maybe we can get the staff to take a look at what's still on the plate or, oh, Jim.

Dr. Neton: Yeah. I think the issue with those sites has to do with the high enriched uranium analysis, the neutron exposures, and as far as I know, that document is very close to being finished maybe by January, is that right?

Mr. Katz: That's super. So then we'll give SC&A time to review that. That means that's probably looking at March-April, something like that, depending on how extensive that document is. Very good. Member Beach: Can I ask a quick question back on Mound. It shows here that the expected completion is 12/2018. I'm wondering if we can get an update on that, if that's actually going to happen. It's on NIOSH's work document. Yeah, Tim's on it.

Mr. Rutherford: Yeah, yeah. That's the one issue that Dr. Taulbee's working on, and I would say it's probably not going to be until January.

Member Beach: Okay.

Mr. Rutherford: Just with the holidays and everything going on right now. We had hoped to get it out before things, you know, earlier in this month.

Mr. Katz: So that's Mound?

Member Beach: That's Mound. Yeah, I should have looked at this sooner.

Mr. Katz: So we don't retire that yet?

Member Beach: No not -- Mound. Yeah, you're right. Mound should not be retired.

Mr. Katz: Right, okay. Resuscitated Mound.

Member Beach: Kansas City I was actually thinking. That's why I looked.

Mr. Katz: Okay. Yeah, no I understand. Rocky Flats.

Member Kotelchuck: Nothing new, although I'm thinking about updating -- whether there's any need for updating the program, excuse me, the Site Profile as we did for Carborundum this morning, for partial dose reconstructions. I will take a look at that and report at the next meeting. I'm not sure if there's anything that needs to be done, but it is worth checking and I have not checked.

Mr. Katz: LaVon.

Mr. Rutherford: Yeah. I'll add to that. We actually are -- once the closeout of the SEC petition, we initiated updates to the Site Profile and meet shortly thereafter, to update all the things. So the updates are almost complete. Should be complete by March. I would suspect that would be a good time to get, you know, SC&A back involved, reviewing those, that they're final, we incorporated things that needed to be incorporated and so on.

Also, we are looking at the box question that Terrie Barrie had, and the ones that she thought we should have reviewed. There's a little issue with that,

because our notes happen to be in Germantown because of classification issues. But once we get that one resolved, I will update Dr. Kotelchuck on that.

Mr. Katz: Okay, thank you LaVon, and then I mean I think we can just -- SC&A consider themselves so tasked, since this is sort of a continuing project, to review the Site Profile material when it's ready in March or whatever that might be. Okay SC&A?

Mr. Rutherford: Excellent.

Mr. Katz: John Stiver, right? Thanks. Okay, so then we're probably looking at more like a June time frame for a Work Group meeting there, depending on how extensive that work is for reviewing the Site Profile material. Good. Sandia. Dr. Anderson.

Member Anderson: Yeah. We've met and I think we're waiting for some more information.

Mr. Katz: All right. LaVon, do you want to just address that a little further?

Mr. Rutherford: Yeah. Actually on my presentation, I mention that we are working on the remainder years, 1997 to I don't know that it was now, 2011, and we expect to have that report completed in March.

Mr. Katz: March, okay. Thanks.

Member Anderson: We're making progress.

Mr. Katz: Thanks. So that report in March, and then again I think SC&A can review that report when it's ready, waste no time there. April, May, June maybe ballpark for Work Group to maybe finish up work on Sandia.

Member Anderson: Yeah.

Mr. Katz: Great, thank you. And Santa Susana we'll hear about shortly. Savannah River Site, Brad.

Member Clawson: Yeah. I just received an email

from Tim Taulbee on it. He's hoping to have out in January the coworker model and so forth. We've been having troubles getting information out of Savannah River, but he's hoping to be able to have the report done to this one by January.

Mr. Katz: Right, thank you Brad. So folks on the line, I hope you could hear all that. But so -- but it was addressed earlier this morning by DOE too. SRS had some issues with having the resources for classification reviews, which has held up a lot of records for quite some time.

They've worked through that, soldiered through all that, have some people hired there. They've gotten a lot of that work done now, and so the logjam, I believe, is broken there and we're hopeful about -- Jim, you have more to add?

Dr. Neton: Not to Savannah River, but well it's sort of related to Savannah River. If you remember, the Savannah River Site was the first site that we were using to sort of do the litmus test on the implementation guide for coworker models, and I guess I have a question in my mind of where that's going to go.

If this report comes out in March, I don't know whether that should be taken up under the Methods Work Group or whether the, you know, the Savannah River Work Group should take it up.

Mr. Katz: So the way we had been proceeding before is the -- is they both have a role. So the issues that were more just site specific matters of the records, what they say and so on were being addressed by Savannah River Site Work Group. The coworker modeling itself, adequacy of that modeling and so on was being handled by the SEC Issues Work Group.

Member Clawson: Right.

Mr. Katz: I think that would -- we might even -- I mean at one point, we actually had both Work Groups

meet together to address some of this.

Member Clawson: It may be worth thinking about that. We're preparing a road map. We're getting close enough where we're working on a road map to sort of cross-walk what was done for the coworker models of Savannah River versus the recommendations in the imp guide, and we can provide that to both groups at any time.

Mr. Katz: Yeah, and I think it probably makes sense, at least for the first meeting following that material coming out, for the Work Groups to meet together jointly, since they both have sort of an angle on that material.

Dr. Neton: It's a goal of mine to get the imp guide approved before I retire.

Mr. Katz: Oh okay.

Member Clawson: I'd like to be able to see that happen.

Mr. Katz: Okay. Well so that -- that will depend heavily on being able to get the coworker model out early January, at some point in January, so that SC&A has time to go over it, but so --

Member Richardson: Work until his retirement.

Member Beach: Well I was going to say he's going to hang around.

Mr. Katz: Hey, that's incentive.

(Simultaneous speaking; laughter.)

Mr. Katz: Okay. Okay, thank you. That's helpful. Science Issues, David.

Member Richardson: Yes. As was mentioned earlier today, there have been a number of organizations which have addressed the issue, which the Science Issue Work Group has been focused on, on dose and dose rate effectiveness factors. Those reports have

finally mostly trickled out into public consumption.

So there's an NCRP report and several papers from the ICRP Working Group on this topic, and correspondence related to the report that was produced for NIOSH by its contractor and responses to those comments. So I think we're at a point to issue sort of a conclusory memo on the topic. I've drafted that and we'll circulate that to the group.

Mr. Katz: Okay. So then we'll have a Work Group meeting at some point after that, once they've had a chance to digest it, right? Okay, super. Teleconference.

Thank you. So and we just discussed this with SRS, the SEC Issues Work Group, I think, will be involved then with SRS. Subcommittee on Dose Reconstruction.

Member Kotelchuck: Yeah. The folks that SC&A have just finished the -- their Set 26 lines, and I think that we're now probably ready to have a meeting on that, and finding out of course what they've been -- where they're up to on Set 25. So I think we have -- we have the makings of a meeting soon.

Mr. Katz: Well so I can -- I think I can update you, and I'll look for John to confirm. But the Set 25 is the full set, regular dose reconstruction reviews and what SC&A has been doing for the past oh about six months to cover the time because of issues of scheduling and all that is they drafted, of course, all those case reviews and got those out to Board Members.

We have Board Members in teams of two that meet with SC&A then to give sort of initial feedback, more food for thought before those are completed, those dose reconstruction cases, and those are just about done and I think are expected to be done and turned in this month in December, correct John Stiver?

Mr. Stiver: I believe that's right.

Mr. Katz: Yeah, right. So those will be turned in this month, and then what needs to get done before a Work Group can really productively meet on those is of course NIOSH, and there's Grady Calhoun in the back of the room here, has to review the reviews so that they're ready to address the comments that are raised by the reviews. That takes a little bit of time. They have to task with ORAU with that and get ORAU's responses back and so on.

So that it may be a few months off for those cases before you can sort of usefully engage on those reviews.

The blind cases, though, blind cases also, I don't know where -- Grady, where is NIOSH on reviewing the reviews for the blind cases?

(Off mic comments.)

Mr. Katz: Okay. So what Grady just said, I know you can't hear him, but he's following up on that and he'll get back to us.

Member Kotelchuck: I will say that the last couple of the blinds for Set 26 have just come in in the last several days, but they are finished now.

Mr. Katz: Yeah, okay. Thanks.

Member Kotelchuck: One other issue?

Mr. Katz: Sure.

Member Kotelchuck: About six months ago, several Members of the Board had asked me when are we going to update the report to the Secretary. I sent out requests about six months ago, and they have not been responded to either by SC&A or by NIOSH DCAS. If the Board, and obviously they weren't responded to I'm sure, because people were working very hard on lots of other projects. So I'm not -- I think it's up to the Board to decide whether they want to have an update at this time.

I have to revise the date at which we update to, since I sent those out six months ago. But the main question is do we want to task folks to gather materials to help update the report, and if so, other things will have to be put aside. So if we want to have one, then let's decide and if we want to postpone for a while, then that of course is understandable, but let us decide on that.

In that respect obviously, folks from the different staff organizations will want to say something.

Mr. Katz: Well, I have something to say there, because I don't understand. We already did task that. SC&A, I know you had some interaction with Rose about that, that we needed the support materials for that, and Rose -- I have a lot of faith in Rose. She's very diligent. So John, do you know what's the standing of that, because --

(Off mic comment.)

Member Kotelchuck: But she and I spoke, and there were other things that had priority that I did not feel appropriate to say to her the Board's decided you need to put this aside.

Mr. Katz: Okay. But that's sort of my responsibility over SC&A. But and this is -- they have dose reconstruction case review resources. So this should not be because there aren't resources available to address the needs of preparing that report.

So that will -- that doesn't need to be re-tasked. That will get done. I think it's important. The Board had already agreed that we should have an updated report. I mean if the Board wants to decide they want to wait on the most recent set and blinds, they can. But that's then pushing this off for quite some time before that, those --

At least the blinds might be easily put to bed. In the meantime either way, you can go forward with the -- because it takes a while to put together the report.

But the case set that's still, that's just about to be delivered at the end of December in final form, you know, that's at least putting off getting through it for almost six months.

So I mean you can decide that if you want to, but otherwise we already said we wanted to go forward with another report.

Member Kotelchuck: Well, I think this is helpful in clarifying, and I did not -- I looked at it as an individual chair of the committee, I felt like I don't have the authority to say no, go ahead. You as --

Mr. Katz: I can say go ahead.

Member Kotelchuck: Acting chair can and --

Mr. Katz: We asked for this to be done, so I'm really not sure right now what's gone wrong.

Member Kotelchuck: Well, this clarifies, this clarifies. But I will say to the parties that I sent emails to six months ago, I want to update data which we use as a cutoff.

Mr. Katz: Yeah, absolutely.

Member Kotelchuck: And I will do that.

Mr. Katz: And it's not -- honestly, it's not a gargantuan job to update the data as is necessary for that report. I mean it's substantial but it's nothing. It's not that difficult, so it should be getting -- it should get done. So okay. That's where we stand with that.

Member Schofield: This is Phil. I've gone one quick question.

Mr. Katz: Yes.

Member Schofield: I was just wondering if John could give us any idea how long it's going to take to review those two White Papers that we just received.

Mr. Katz: For, for which? Sorry, for which?

Member Schofield: For the air sampling data and the thorium and americium for Santa Susana? They're the ones that NIOSH just delivered at the Work Group meeting we went over.

Mr. Katz: Okay. But so we -- let's address that when we address those. They're going to be presenting their -- they're going to be presenting right after this work session meeting. So let's -- why don't we wait for that, Phil?

Member Schofield: Okay.

Mr. Katz: And then absolutely. Just re-raise -- if the question doesn't get answered as a matter of course, then please ask the question with each of those, because we have two presentations for those two sites.

Member Schofield: Okay, thanks.

Mr. Katz: Thanks. Okay. Where are we? Procedures.

Member Beach: Okay. So the Procedures Subcommittee met last October on the 31st. We had a full and productive meeting. Prior to that, SC&A compiled a review status of all current NIOSH guide documents. I just want to point that out, because this was a tremendous effort, completed by SC&A and it was much appreciated by the subcommittee. A lot of work went into that.

The spreadsheet will be maintained by SC&A as we progress through the issues resolution process, and new documents will be added as they are published. The subcommittee closed out 17 findings on the 31st, and tasked SC&A with four new documents to review. Those are ORAU OTIB-0088, the Peek Street template, OTIB-006 and OTIB-45. Those are due before the end of February.

We also transferred one set of findings over to the

Rocky Flats Work Group. That was done by email and Dave, I don't know if I ever heard back from you on that when I sent you the email transferring that. You're Rocky Flats chair; correct?

Member Kotelchuck: Right, I am.

Member Beach: And you remember receiving that email?

Member Kotelchuck: I did.

Member Beach: Okay.

Member Kotelchuck: I don't remember right now.

Member Beach: That's fine. I just wondered.

Member Kotelchuck: But no, I got it. I remember getting it, but I did not follow up.

Member Beach: Okay. That's a two-way street there, and our next meeting is scheduled for February 13th of next year.

Mr. Katz: Thank you. Okay, and I can -- TBD-6000. The Work Group has not met. I could cover that for Paul.

Member Ziemer: Right, that's correct.

Mr. Katz: And we also have the -- its sort of counterpart, uranium refining AWEs, which Andy chairs, also has not met. Andy, do you want to add anything to that?

Member Anderson: No. I think reviews, they're coming up though.

Mr. Katz: Yeah. There are -- I mean there's, for example, there's one review that's already been done by SC&A on General Atomics, which comes under that hat.

Member Anderson: Right.

Mr. Katz: And there's some bits and pieces I would say of other reviews that probably at some point need -- they're not, they're not urgent, but they could be buttoned up whenever we do have a Work Group meeting.

Member Anderson: Right.

Mr. Katz: So for the General Atomics I don't -- the question I guess is whether where NIOSH is on that one.

Mr. Rutherford: We've been waiting on actually, some of the coworker issues to be resolved once -- and we get an imp guide complete, then we can move forward. We've got the data and information but, you know, until that's finalized we don't want to put forth all the effort to do that and then have to go back and do it again.

Mr. Katz: That absolutely makes sense, right. So then that's sort of hinging on getting through this SRS coworker model. Thank you.

Member Anderson: Okay. So we're just waiting to hear.

Mr. Katz: So we're on hold, right. We're waiting, back of the bus. Surrogate data, that's Paul and there we don't have an update. We don't have a Work Group meeting or an update.

Member Ziemer: Right, and while you're mentioning that, let me give you sort of an update there and let me backtrack for a minute, because although Ted you mention there wouldn't be anything to report at Lawrence Berkeley, the Work Group has received a lot of information from Dr. Hughes.

But since mid-July, my own life has been focused largely on medical issues, and we do have surgery scheduled for next week. I'm expecting that I will be kind of continually out of the loop for at least another month or so. But we have Lawrence Berkeley to address, and then you have surrogate data.

Mr. Katz: Okay. So for Lawrence Berkeley, you're saying a couple of months down the road we might be ready for a Work Group meeting?

Member Ziemer: Well, we certainly have a lot of things to look at there so -- unless somebody else wishes to chair it.

Mr. Katz: Okay.

Member Ziemer: But I'm thinking it will probably be into February before I'm sort of back in the loop and able to deal with some of these issues.

Mr. Katz: Okay, and Megan has something to add here.

Dr. Lobaugh: Yeah. So Lara has been in the process of transferring this Work Group to me. So what we're currently doing is we've responded to SC&A's findings on the White Paper covering gross alpha beta gamma air sampling results there. Then one thing that I'm doing to get my arms around all of the TBD issues is entering everything into the BRS. So I had emailed probably a few weeks ago saying that I've started that effort so --

Member Ziemer: Right. We appreciate that, and that will be very helpful.

Mr. Katz: So you think Megan, maybe end of February or so we might be ready for a Work Group meeting?

Dr. Lobaugh: Yeah. Yeah, I agree with that.

Mr. Katz: Okay. So let's tentatively sort of plan on that. We won't schedule it yet, but --

Member Ziemer: Yeah, sounds good.

Mr. Katz: But that sounds good. Thank you very much. Thanks Paul too. Excuse me one second. Let me get this down. Okay, okay, and I think -- so that takes care of it for the Work Group reports.

Member Kotelchuck: I think Methods, DR Methods.

Mr. Katz: I covered that already. There was no update for DR Methods.

Member Kotelchuck: That's correct.

Mr. Katz: I covered it for you. If you have something to add, go ahead.

Member Kotelchuck: Yes I do, and I did miss that then. Grady, we're -- we've decided at our last meeting that we'll be talking only about gathering information going forward. I'm not trying to look back at comparing potentially NIOSH and SC&A.

But Grady, I have a note down that Grady was going to look or tally up the professional judgments, the circumstances under which we did professional judgments were used to allow us to look at them, and I don't know. I haven't spoken to you in a while.

Mr. Calhoun: You have not and --

Member Kotelchuck: So and actually --

Mr. Calhoun: As far as I know, I don't know what the status of that is, but I also will try to find that out for tomorrow.

Member Kotelchuck: You know what? No. Now let me -- I will clarify on my end. We haven't had meetings of the subcommittee --

Mr. Calhoun: That's true.

Member Kotelchuck: --and therefore there's nothing to move forward, and we're not going to look back. So that's something that you are tasked with, if you will, and it will take a while before you build up -- before we finish reviewing enough cases, that you'll have a chance to put together something to say when did we decide --

Mr. Calhoun: Yeah. If we start doing that from this point forward --

Member Kotelchuck: That's right.

Mr. Calhoun: --- we're going to have to get so many done before it will even make a difference.

Member Kotelchuck: And therefore my report could have been well, we're waiting upon events. But you're not behind.

Mr. Calhoun: Good, thank you.

(Simultaneous speaking.)

Member Kotelchuck: And I'm sorry I didn't think of that right off.

Mr. Katz: Christmas comes early for Grady.

Member Kotelchuck: Right.

Mr. Katz: Yeah, okay. So --

Mr. Stiver: I just want to add something. We had the meeting of Methods on September 13th, and SC&A was tasked to put together kind of a matrix, different comments on consistency, and we circulated that to the Work Group September 20th.

Member Kotelchuck: You did, you did, and there were no updates.

(Simultaneous speaking.)

Member Kotelchuck: But thank you for noting that you folks have done good work and followed through on what you said you'd do.

Mr. Katz: Thank you, John. Okey-doke. We have the August public comments, which I'll run through. Let's see if we have enough time. We still have -- I think we still have 15 minutes or so. So initial comments. We had comments from the petitioners from Metals and Controls. We're dealing with Metal Controls tomorrow. So that isn't a matter and these comments that were made there don't require response.

Oh, and also then, yeah, and that goes also for a number of -- you'll see in your reports of other Metals and Controls comments, where the response is noted, what the response was.

But again, we're addressing Metals and Controls and these issues, and the Work Group has discussed these issues too in its meeting earlier, and you'll hear more about that tomorrow. So that covers the Metals and Controls.

Then we have also a number of comments from the petitioner for Santa Susana, who we'll be hearing from again later tomorrow. Some of these relate to the issue that we've heard about. DOE spoke to this morning about issues about potential issues with getting full records from Boeing, and we heard also from DOE that we would receive a report on what they learned from their field work on that matter.

Let's see. Savannah River site, okay, and we also heard there's no more response required. We heard last time about how long SRS has waited for a conclusion of this, the SEC petition matters that are still on the table, and we also heard this morning from DOE about resolving the data flow for that, and we've gotten past that and we've heard from Brad on that too.

So -- and we'll have public comments on Savannah River site as well in the public comment session I believe.

Rocky Flats. The petitioner raised a couple of different issues there. Those have been responded to. One related to I think LaVon already addressed some records that the petitioner believes should be looked at at Los Alamos, and NIOSH is following up on that. That all seems appropriate.

Yeah, and another comment about exotics, and NIOSH has responded on that matter too.

So next we have Sandia, and the matter that was

raised will be addressed in the addendum that we've heard discussed earlier today, that we expect at the end of March for Sandia. So that should be addressing that comment.

We heard from the petitioner for Pinellas on several matters. These have all been responded to. One had to do with metal tritides and how they're dealt with there, versus Sandia, and that was explained that that metal tritides was not the basis for qualifying the Sandia petition, and there was also a question on -- for Pinellas about how dose reconstructions are handled with respect to skin cancers.

Now the Board has reviewed the NIOSH methods and approved the NIOSH methods for Pinellas there.

Okay. Another comment on Metals and Controls. Again, that was actually addressed at the Work Group meeting, and you'll hear more again tomorrow. Another comment on Sandia. While it's related to Santa Susana and De Soto being the same entity, but it's been explained they're not the same entity.

They're separate sites by law. They're not the same facilities and they have separate radiological conditions, even though they were managed by the same, the same contractor.

So other questions about Santa Susana are all matters going to be addressed this afternoon. So they're all substance for the discussions to come shortly. There was one comment, probably won't get addressed this afternoon about questioning whether NIOSH was having Boeing select who NIOSH interviews, and the response was that NIOSH doesn't have Boeing select its interviewees. It selects them.

There's another matter about interviewing a health physicist that the petitioner had identified, and NIOSH has interviewed that health physicist, and that covers -- those are the last of the comments for August meeting. Any questions from the Board Members about how those were responded to? Okay.

Member Anderson: No questions.

Mr. Katz: Thank you, Andy. All right then. So we're early. Where's the petitioner for Santa Susana? D'Lanie, are you in the room? Ah, she's out of the room, okay, okay. So I think we just take a break then, and we will be back in business at four o'clock for De Soto, starting with De Soto and then after De Soto -- oh no. Sorry, sorry, no, no, no. 2:45, Area IV and then De Soto follows that. Sorry about that. So 2:45, we're back. Thanks.

(Whereupon, the above-entitled matter went off the record at 2:32 p.m. and resumed at 2:49 p.m.)

Mr. Katz: All right. We're on to the next session, which is Area IV, Santa Susana, and we have a presentation by Lara. Phil, before Lara starts, is there anything you wanted to say to the group?

Member Schofield: Not really at this time.

Mr. Katz: Okay.

Dr. Hughes: Okay, are we ready?

Mr. Katz: We are ready.

Santa Susana Field Laboratory SEC Petition #235

Dr. Hughes: Okay, thank you. Good afternoon. So this is a follow-up presentation on SEC-235. This was an SEC evaluation for Area IV Santa Susana that was completed last year in 2017. There was a follow-up Work Group discussion later that year, 2017, and there were some follow-up tasks that were given to NIOSH by the Work Group, and this is --

The presentation is about what we found during those tasks. The follow-up was sent to the Work Group in the form of two White Papers. They were sent in early November, and with that, I start maybe. Okay, here we go. Just a couple of brief background slides. Area IV, the Santa Susana Field Laboratory is the site that's relatively close to this location here.

It's north of Los Angeles in the Simi Valley, California in Ventura County. It's 290 acres. This is a site that was a field laboratory that was operated by various entities, and it consists of four areas and the covered site is Area IV, which was the only -- was the area where the major DOE contract operations took place in the form of various nuclear reactor experiments and related activities.

The covered period, the DOE period that's covered under EEOICPA is 1955 through 1988, and there's a remediation period from 1988 to the present. There are several SEC classes for Area IV Santa Susana field lab. SEC-93, SEC-156 and SEC-234, all three of those together encompass the entire operational period.

1955 through 1988 has already been designated an SEC. SEC-235 has currently no Class added. There was no -- a NIOSH recommendation to not add a Class. The evaluated period was August 1st, 1999 through June 30th, 1993. So a little bit of background of this petition. This is SEC-235, petition for Area IV for the period after 1988.

The petition was for the entire operational period after 1988, the remediation period. What qualified was August 1st, 1991 through June 30th, 1993, which was something we referred to as the CEP period. CEP stands for Controls for Environmental Pollution, and that was a bioassay contractor that was contracted by several DOE sites throughout, and this contract has to be found to be falsifying data. They were not actually running their samples. They were just kind of making up numbers as I understand.

So any CEP data we don't use because of that issue. The NIOSH evaluation to the Board on August 2017 did not recommend a Class. We feel like we can reconstruct doses with sufficient accuracy for this two year period, despite not using the bioassay from CEP.

This evaluation was discussed with the Area IV Work

Group on December 4th, 2017. The Work Group requested additional workup on two issues. The first was the status of thorium and americium operations post-1988, in light of SEC-234. SEC-234 was the infeasibility was because of the NIOSH infeasibility to reconstruct doses from thorium and americium at Area IV. That's the nuclides resulting from reactor operations, reactor fuel, transuranics.

And secondly, the Work Group tasked NIOSH to evaluate available air sample data during and before and after the CEP period, when in vitro bioassay are invalid, and this was done to kind of reassure that there wasn't anything -- the exposure potential was somewhat comparable during that period where no bioassay is available.

So these two White Papers were issued by NIOSH and sent to the Work Group in November. So the status of Area IV after 1988, there were -- three facilities are the main focus from an exposure standpoint that were still -- they were not operational, but hey were undergoing major D&D operations.

One was the hot lab, Building 20, the RMDF, the Radiological Material Disposal Facility and the SNAP reactor facility. The main radionuclides of concern during D&D are efficient products, mostly cesium and strontium. Residual alpha activity in the Hot Lab was attributable to plutonium-239 and the major radionuclide of concern in the SNAP reactor facility is cobalt-60 from activating components during reactor operations.

This is -- this information's all out of the health physics report that were completed during this time. So it's -- so the infeasibility for the prior SEC was americium and thorium. So we kind of looked at the status of operations with thorium and americium after 1988.

It's very difficult to prove that there was absolutely none of this data. So all we can really do is go through the records and see if there's any indications

that these operations that were -- that any of these materials from the operational period were holding over during the D&D period.

So what we know is all reactor operations at the site had ended by 1980. The nuclear support operations ended by 1988. The thorium source term that was there pre-1988 was -- that thorium was a reactor fuel component of two different reactors, the SRE and the ATR, and the AETR, I'm sorry. This is actually a typo, and the nuclear support operations of the thorium-bearing fuel.

The americium source term pre-1988 was the transuranics and all of the used reactor fuel and the sealed sources.

So as for thorium, we know the thorium was present in the SRE Core Number II, which was in operation from 1960 to 1964. This was the thorium-232 and enriched uranium alloy. We know this fuel was assembled in the Engineering Test Building some time before 1960. The SRE Core II fuel was stored in the RMDF after the removal from the reactor in 1964.

This fuel was disassembled in the Hot Lab starting in 1974, and was shipped offsite in 1977. There's pretty good indications that that's what happened. There's technical reports that support all this, and the Engineering Test Building that was used to assemble this fuel was released for unrestricted use in 1985.

So there's no indications that the SRE Core II operations, that there was any material left over in these buildings. The AETR operated from 1960 to 1974. This was another thorium -- reactor that had thorium fuel, was thorium fuel-based. This fuel was fabricated at the AETR reactor building in 1959. This building was also released for unrestricted -- had been released for unrestricted use in 1980.

We also reviewed various other documentation, including the incident documentations, and we found

no incidents that involved thorium listed. As for americium, again americium, the main driver of potential americium exposure was the nuclear reactor fuel, because it's produced in the reactor.

All reactor fuel had been removed from the site by 1988. There was the transuranic management by pyro partitioning separations program that was using sources of americium and other isotopes. But this program, by all indications that we saw was never actually -- never took off. So this material was shipped to Area IV but it was, you know, in storage and was not handled.

We have incidents mentioning americium only before 1988 but not after. The only areas where there might be some potential residual americium contamination would be the Hot lab and the radioactive material handling facility. We did a thorough, fairly thorough review of the decommissioning and quarterly review reports and do not indicate any evidence that americium or thorium were encountered at these operational facilities.

So just in conclusion under the thorium and americium status, we know that the major source term for americium and thorium had been removed from the site by 1988, which is the nuclear reactor fuel. A review of the facilities during the remediation period do not indicate a sustained radiation exposure of these nuclides that would be similar to the operational period.

Now we know D&D can produce unpredictable exposures, and the site had fairly robust internal exposure monitoring program in place at the time. NIOSH does not find that the exposure potential from the operational period regarding americium and thorium held over into the remediation period. Keep in mind that the main source and form of the reactor fuel had been removed from the site.

This was the first White Paper. So I'm now going onto the second White Paper, unless you prefer to

ask questions about the first part now, or I can complete my presentation. Do you have a preference?

Mr. Katz: Go ahead, Lara.

Dr. Hughes: Okay. So the second White Paper was some regarding the air sampling during the remediation period. So a little bit of background on the air sampling. They did -- the site did general air sampling. This was just fixed locations in the work areas. They pulled these samples weekly and then what we have in the form of records is quarterly reports.

So we look at a quarterly result would be four, you know, would be averaged, the weekly results averaged over a quarter or an average of 13 data points. We also have breathing zone air sampling. This is the sampler that was worn by a worker during various jobs that collects the respiratory -- the particles on a filter.

These results are then compared to a maximum permitted air concentration or MPC for the radionuclides of concern during the D&D period, which were strontium-90 for beta emitters and plutonium-239 for alpha emitters. There's an MPC limit in place. It's one times 10 to the minus 9 microcuries per milliliter for strontium-90, and two times 10 to the minus 12 microcuries per milliliter for plutonium-239.

For breathing zone, they compared to what they call an MPC hour limit, which is 2,000 per year or 520 per quarter. If you divide that, you get the quarterly. The breathing zone, the workers that were entering airborne areas were also either wearing full face or airline respirators. The full face just covers the full face. Airline has the supplied air and has a higher respiratory protection factor.

Until 1992, the air sampling was the primary exposure assessment method. Bioassay was

backup. Now this is how the site did it. That does not mean that we can -- that has not necessarily an effect to our dose reconstruction program.

That's just how they operated. They do sampling, and then when they think oh, this is an area where somebody might have received intake, then they would send those people off for special bioassay.

So I have a brief, I have a slide for each of these operational buildings. Not operational, but undergoing D&D. So what the major operations that were going on during this period that we're focusing on. So for the SNAP facility T-059, we have some air data summary available for 1991, four quarters.

Again, the facility's undergoing D&D. They're taking down structural material. They're cutting up steel parts. The main contaminant is cobalt-60. This structural steel and irradiated concrete is reduced in size and sent to the RMDF for interim storage until it's eventually shipped offsite.

There's some reporting of airborne radionuclides observed during the removal of old sodium potassium lines. Workers were breathing some samples during operations, causing airborne contaminations. They did not have general air samplers in the SNAP area.

For the Hot Lab, we have the air data summaries available for 1990 through 1993, 15 quarters. They had 28 general air sampling stations throughout the building. They recorded air data for every quarter. Again, workers with potential for intakes were breathing zone and respirators if needed.

This is the facility where we have the largest amount of breathing zone data available. The D&D operation during this period mostly consists of removal of cell liners and drain pipes. There's some incident report that indicates small events of contamination, and there is a period in 1993 where we saw some elevated general air data points. I'll speak to that in a minute.

We found out any potential intakes could be assessed using a combination of available bioassay air data or whole body count. The Radioactive Material Disposal Facility, again we have air data available for 1990 and 1991. There's one quarterly report missing. This facility had seven fixed general air samplers. There's breathing zone data for up to ten workers available per quarter.

This is the only facility that was not in D&D mode, and they were not working on tearing it down. They were receiving and storing and shipping off material. They got material from other areas such as Area IV, and yeah, they were packaging, storing and shipping stuff offsite.

So this is a brief look back at the operational period. The air data during the operational period has not been a major focus of evaluations in the past, mostly because we have a lot of bioassay data or because we don't have the raw air data. Usually it's a very large amount of data that's potentially available, and we have not coded it or collected it at this point.

So this is -- this is a graph showing the time and years. This is the operational period, and the Y axis shows the general air beta annual average air concentration for the Hot Lab.

This is from annual summary reports that was reported for the Hot Lab per year, and it's one value that was reported for air sample, because obviously you have a very large average -- it's averaged over a long period of time, and then it compares it to the maximum permissible concentration.

You see they were pretty much below except for 1985, I believe is that, and then there's a drop-off towards the end of the operational period, which is kind of probably in line with them removing material from the facility before it's undergoing D&D.

So this is the quarterly -- the maximum quarterly averages for the remediation period. So the X axis is

the quarter. We started the first quarter in 1990 and end of the fourth quarter 1993. And so we have the blue dots. The blue line is the beta, the alpha, sorry the alpha, and the green is the beta activity.

This is quarterly gross measurements for alpha and beta, and then there's the dashed lines of the limits, and you can see the main -- the noteworthy thing is that they're mostly below the respective limits, with the exception of these three quarters in 1993, where we have some huge values.

So regarding those values, we kind of tried to find out what's going on there. I mean they're reported in the Hot Lab quarterly reports, but they're not in any way discussed. So we're kind of like at a loss what -- if somebody encounters these type of values that is this high, they would usually say something about it.

We went and interviewed the people that were in charge at the time, and they had no recollection of this happening, and they also kind of doubted that these were real. They could have been spurious samples, something malfunctioning with the detector. However, we don't, you know, that's not -- we can't just say that. We have no proof, so don't really know what to do with this data. It's kind of -- it's there. We don't know why it's there.

So moving on, we kind of looked at the breathing zone. This is the same type of graph for breathing zone that was reported for the Hot Lab and other facilities again, for 1990 through 1993, and the maximum MPC hour limit is that black line. You see they stayed well below all the breathing zone that they collected or reported stayed way below the limit, so that doesn't seem to be an issue.

So again, the elevated data for the Hot Lab. Quarters 1 to 3 had elevated quarterly results in three locations, 3 of 28 locations. One was in the service gallery, which is the staging area behind the hot cells, and one was in the basement, which is an area not generally occupied but they did at some point go in

and had to remove contaminated drain lines.

So this would certainly be an operation where they would expect some airborne, however maybe not quite in that range. Again, the worker breathing zone data remained below the regulation level. So what we did, we went and looked at worker rosters that are available. They're in the quarterly reports, and we kind of looked at what, you know, what other data is available.

We looked at the whole body counts. There are indeed workers that worked D&D that had some small intakes, but nothing that, you know, would be comparable to those high air data. We also looked at data from the new bioassay contractor. In the third quarter of '93, they had the new bioassay contractor come in and if there had been any significant intakes, that would have shown up in those workers.

So in conclusion for the air data, we do have general air and breathing zone data available. Some quarters are missing and some facilities are not -- we don't have all quarterly data for all facilities. We're not quite sure if we don't have them or if they were never written. We're not quite sure about that.

Regarding further research into the higher, these elevated Hot Lab samples, potentially raw data and log books are available. However, I'm not sure at this point, you know, how far this type of research, what exactly is that really going to help with the decision on this petition. I would leave that up to the Work Group.

It's not clear. Any potentially raw data log book, it's not clear if it's available and how easily it could be collected. What we do know is the Hot Lab data set on these quarterly reports that I just reported on, we know that the Hot Lab data set is the most complete and is believed to be bounding.

The Hot Lab elevated samples are unusually high, but elevated samples in general would be in line with the

disruptive operations during the D&D period.

Despite these type of operations, we still had no significant worker intakes at the time, and NIOSH believes that the available information is sufficient to bound doses from the D&D operations during the CEP period. And that concludes my presentation.

Mr. Katz: Do we have any questions for Lara from in the room to start with? Board Members? Dave, David.

Member Richardson: I'd just like to make sure I understand the connection between the two White Papers. One involved the status of the operations involving thorium and americium in Area IV during the remediation period, and the second report seemed to talk about, now help me if this isn't clear.

I guess the question is are these two related? Is the discussion about the monitoring information available focused on the issues of monitoring and exposure assessment for thorium and americium, or have you switched gears and you're talking more generally, because it seems you were touching on exposure to other radionuclides?

Dr. Hughes: Yeah. Well, they're related in the sense they were two separate tasks that were given to NIOSH by the Work Group. But yeah, you're right. I should have made that clear. They're not necessarily -- the air data is more general.

I mean this is general air data they analyzed for gross nuclides. They analyzed for plutonium and strontium. That's the limit that they used. So no, it's not -- the air data White Paper does not focus on thorium and americium necessarily.

Member Richardson: So when we think about the difficulties of quantifying or assessing exposure or intakes with thorium and americium in particular during this period, that's where as you go through some of the lines of evidence that you've assembled,

one might think well, indirectly evaluating whether we believe the air sampling data based on whole body counting data, for example, we'd want to consider how that was quantified for thorium exposures, for example, because you had previously talked about some of the difficulties of quantitatively interpreting in vivo counting, for example.

Dr. Hughes: Right. They did not do in vivo counting for thorium.

Member Richardson: So that's not a line of evidence that we could take to assess the questions of thorium and americium in the remediation periods?

Dr. Neton: Yeah, this is Jim. I think Lara did a pretty good job researching and demonstrating that the source term for thorium and americium was not there in this period, at least in the sense that there was no operational activities ongoing. That was the basis for adding the Class in the operations period, was physical work going on with these materials in larger quantities. By the residual contamination period that we're in now, those source terms were gone.

So there was really no reason to have a routine monitoring program for those nuclides. So what she's reporting on here with the air sample data is did they do a good job monitoring the remaining source terms, which was strontium-90, cobalt and such, and also was the 1991 through '93 period, which was the CEP, so-called CEP period, is that any different than the bounding time periods, so that we could use the monitoring data for the bounding or the adjacent periods to reconstruct doses?

Mr. Katz: Jim Lockey.

Member Lockey: Yeah, thank you. I think you did a good presentation. I just need clarification. On one of your slides --

Mr. Katz: The mic, thanks.

Member Lockey: On one of your slides, you say any

potential intakes could be assessed, and then on -- further on, you go on to say that, and maybe I just don't understand, no significant input, intake was observed. So --

Dr. Hughes: Right, based on the available bioassay data. We have the bioassay data.

Member Lockey: So the bioassay data. You said they would assess --

Dr. Hughes: There were some -- I mean there were smaller levels. Yeah, there were some workers that showed minor or small -- I'm not sure what the intakes are, because we didn't calculate them.

They had such small levels of -- I think one was cesium in the urine as a result of working in the D&D operations. It's not something that's terribly unusual for this type of operation.

Member Lockey: So was the policy such that if --

Dr. Hughes: They did monitor -- yeah, they did monitor that these workers were bioassayed. They were wearing breathing zone. They were also given bioassay and some of them were whole body counted. It was just kind of based on --

Member Lockey: Okay, thank you.

Dr. Hughes: Yeah.

Mr. Katz: Other questions from Board Members in the room or Board Members on the phone?

(No response.)

Mr. Katz: While I'm waiting, I'll just note one question no one's asked, but I'll give up. Is SC&A, this report received fairly recently, so SC&A is working on this. They were at the Work Group meeting and had a chance to get some -- ask clarifying questions to help them with their review.

But they're still looking at this paper, so it's not a --

they haven't done their work yet and the Work Group's awaiting that. I'm guessing that their work will probably get wrapped up in February or so, is that right Bob? Or you can just nod or --

Mr. Barton: Yeah. I believe February or March.

Mr. Katz: Okay, late February or early March. Late February would be good given contract circumstances. Yeah.

(Off mic comments.)

Mr. Katz: We like to get paid for our work, but okay. So I just want to add that to the discussions, so you know that's ongoing. If I don't have any questions from Board Members on the line, more questions -- or in the room, then it's time to hear from the petitioner.

Ms. Blaze: I just want to address the Board after we hear about those SECs.

Mr. Katz: Oh, that's fine. That's absolutely fine. That's your prerogative, absolutely. So we have -- then we've -- it's 3:18, it's about 3:20, whatever. We have a good bit of time, but we have you here.

I don't know if you know whether there are other people who would be on the phone listening, who would worry about missing the discussion of De Soto Avenue if we get started on that sooner, or what's your wish there D'Lanie?

Ms. Blaze: I'm prepared to address it. There may be some other advocates on the phone. That's fine.

Mr. Katz: Well so, do you want us to wait is the question, or should we just --

Ms. Blaze: Let's go ahead into it. I think we --

Mr. Katz: Barrel through?

Ms. Blaze: Yeah.

Mr. Katz: Okay, very good. So then let's go on to the second item. De Soto. SC&A has a presentation for this. Thank you, D'Lanie.

(Pause.)

Mr. Barton: Okay. Can everybody hear me okay? On the phone?

Participant: Yes.

Mr. Katz: Yeah. Just pull that mic up as high as you can. Thanks.

De Soto Avenue Facility SEC Petition #246

Mr. Barton: Okay, great. Well good afternoon everybody. My name is Bob Barton. I'm with SC&A, and we're going to be discussing the De Soto Facility SEC Petition No. 246. So just to give a little bit of background on Petition 246, the original petition had the proposed definition of all workers who worked at the De Soto Avenue Facility in Los Angeles County, California during the period from January 1st, 1965 through December 31st, 1995.

The original position put forth in the petition reads as follows, and this is important for the rest of the presentation: "NIOSH has determined it cannot reconstruct radiation dose for americium, thorium or associated progeny at SSFL Area IV 1965 to 1988. Based on shared contractor and operational history, shared data limitations between SSFL Area IV and the De Soto facility, and the established presence of americium, thorium and associated progeny at De Soto facility until at least 1995, the following petition is submitted."

And as we just sort of discussed in the previous presentation, that was the basis for the Area IV SEC. The infeasibility was found that you can't actually reconstruct doses to americium and thorium during that operational period which ended in 1988.

While these two facilities are sort of like sister

facilities, as was mentioned earlier on a legal basis they are separate facilities. So we have to establish and ask ourselves the question whether similar exposure potential to that americium and thorium that was at Area IV also occurred at De Soto, and would constitute a similar infeasibility.

A little bit more on the background here. The petition was submitted on March 1st earlier this year. NIOSH releases its Evaluation Report on July 3rd of 2018, and it was first presented and discussed with the Advisory Board at Meeting No. 124 in Providence, Rhode Island. That was the previous face to face meeting.

Following those discussions at the August Board meeting, SC&A was tasked with reviewing the main conclusions of that NIOSH SEC Evaluation Report, and that's why I'm standing here now.

So it's very important to understand what those two central conclusions of the evaluation were, and again we're focused on americium and thorium here. That's not to the exclusion of any other potential infeasibilities, but really those are the two. If there are bad actors out there, those are the two we really wanted to concentrate on.

So for americium, the Evaluation Report reads "Neither documents available to NIOSH nor interviews with former workers revealed any historical -- history of fabrication of americium sources, or work with uncontained americium at the De Soto Avenue facility.

"Contrasting previous NIOSH evaluations of radiological work at Area IV of SSFL, NIOSH has found no indication that the De Soto had sources of americium associated with work processes." So the key here is not necessarily whether americium was ever at the De Soto site, but was it ever in a form on a process that would represent an internal exposure potential, like it was determined at SSFL.

For thorium, the NIOSH Evaluation Report concludes "NIOSH has identified detailed documentation of thorium work episodes in 1970 and 1979, providing source term, operational procedures, radiological protection protocols, names of individual operators and dates of work.

"NIOSH has concluded that thorium grinding operations in 1979 represent the bounding operational or bounding thorium internal exposures at the De Soto Avenue facility during the operational period," which again was 1965 through 1995 is the operational period.

"As presented in Section 7.2.3.1, NIOSH has sufficient personnel bioassay data including," and this is a typo. It should say "pre-work and post-work urinalysis and job performance data to allow it to develop a bounding dose estimate for workers with potential thorium exposures during the period from January 1st, 1965 through December 31st, 1995."

So SC&A's review approach to investigating this Evaluation Report was obviously we start by reviewing all the relevant available documentation that's in the Site Research Database, and we also evaluated documents that had been supplied by CORE Advocacy for Nuclear and Aerospace Workers.

Beyond that, we wanted to evaluate documented interviews with former workers at the De Soto facility, and that also included a signed affidavit that was supplied by a former health physicist at De Soto, and that came by way of CORE Advocacy.

The third facet here, beyond the sort of official documented interviews specific to De Soto, let's examine a substantial portion of the claimant population that has job types that have the likelihood for potential and involvement in radiological operations during this time.

That review basically focused on what's known as a CATI Report, which is a computer-aided telephone

interview that's done as part of the dose reconstruction process, and as appropriate, we also looked at the original Department of Labor case files that are submitted with each claim. A lot of times statements will be made in there that aren't included in the computer-aided telephone interview.

With regards to the relevant available documentation, in addition to retrospective historical documentation, these would be historical summaries of operations that occurred, but would also include such things as planning documents. We wanted to look at what I call the primary document types, and these would include the actual health physics log books.

These would be done on a daily basis. A health physicist would essentially document what jobs they did during the day. A second one is what is called at various times at De Soto a tagged area entry permit.

This is essentially the equivalent of a radiation work permit for work that was going to be done in a radiological area where special precautions were necessary. There was a form that had to be filled out for each individual job.

The third one are routine contamination surveys, and these really go hand in hand with the health physics log books. But it's a standard form if you've ever seen them before, and you'd have a number of swipe samples that were taken. They were all given a number and then there's generally a map that goes with it to show where in each area the swipe was taken.

The last one are area air sampling results. So those would be general area, but also the personnel air sampling results, which are also referred to as lapel air samplers, which were discussed in the previous presentation by Lara.

Our first finding when we looked at these primary documents is that we observed there are significant

temporal gaps in what's available for us to look at, and you'll see what I mean in the next couple of slides.

So these are the health physics log books available by year. That chart is very difficult to read, but on the bottom X axis you essentially have 1965 to 1995, and on the Y axis you have zero percent to 100 percent of the month.

What we simply did here is go through and say do we have any of these types of records in this case, health physics log books, and what percentage of the month in each individual year do we actually have evidence of these. It could be one, it could be 30. So this is not necessarily saying that for example in 1965, we have 100 percent of the log books just at the temporal coverage was across the entire year.

As you can see there's a pretty big gap there, and it goes from about 1968 through 1980, where we just could not find the health physics logs, which were sometimes identifying specific activities that were going on. For example, I had to do room such and such to swipe for such and such.

The next one, these were those radiation work permits. Again, same type of chart. We have the years on the bottom, the percentage of months in which we observed that type of documentation, and again it's sporadic for some years. For some years it looks like we're doing pretty good, and then after about 1983 we really didn't see any of those anymore.

That's when these are the routine contamination surveys. Again, it would be a listing of swipes taken in a given room, and then accompanying a map showing where exactly in that room and why that's important. A lot of these are going to be gross alpha or gross beta, and might not necessarily call out what the contaminant is.

But sometimes in the comments section on these

things it would say we went there into this room and swiped as a result of looking for thorium as part of different operations. This is that last one. These are the area air samples. So these are the gross alpha samples.

Unfortunately, I did not have time to compile the breathing zone lapel samplers for this report. But as you can see, the air samplers are really clustered around 1970 and right after 1979, in that kind of area. That was really where the two thorium operations that were identified by NIOSH were.

So I'm going to move on to specific to americium exposure potential. What potential sources are there for this contaminant at De Soto? The first one would be handling or processing of de-clad spent nuclear fuel. This would have been stuff that had been put in the reactor, creating those transuranic contaminants, and then you strip off the cladding and they're available for -- to become suspended, inhaled, ingested, that sort of thing.

There's also fabrication of sealed americium sources and/or the loss of integrity of existing sources that had been sealed, but started leaking. That's one other potential source of exposure. There's the involvement in the Transuranic Management by Pyropartitioning-Separation, otherwise known as the TRUMP-S program.

That may have included some americium as well as other transuranic material. This last one here is kind of interesting, at least to me. They had americium in their smoke detectors. So any loss of integrity of those in handling by the workers could potentially be a pathway for internal dose.

Specific to the spent fuel, we do not find any evidence of actual de-cladding activities, direct evidence of we're going to take spent fuel, take it to De Soto and strip it of its cladding. We just did not find that direct evidence there. However, we found several examples of spent fuel arriving at the De Soto Site,

but again no evidence that that spent fuel was handled or processed in such a way where the cladding was removed and those transuranic contaminants that are formed in the reactor would actually be available for any sort of internal exposure.

We did find one instance where they found a contaminated tray, and this is Building 4. I believe it was actually Building 1 upon retrospect. But basically what they found is this tray had been used to clean sodium off of de-cladded fuel elements.

Now based on the record, we don't know where the fuel had been de-cladded, but assuming that it had been irradiated, it would have contained those transuranic materials, and that was the subject of SC&A Finding 2. So again, this is related to the de-cladded spent fuel. While we didn't find evidence of the de-cladding operations, we found equipment that had been used with de-clad fuel.

There are sealed sources. Encapsulated americium at the site at De Soto is well-documented. Even as late as 1994, there was a notice of violation that they were not abiding by their six month leak check requirement, which was part of their license. This is actually a repeat violation of something that was noted in 1991.

They were supposed to -- if the source was in use, they had to leak check it every six months. In this case they weren't doing that, but they were late between one and eight days, so it wasn't that crazy, I guess. But more importantly, we didn't identify any evidence of actual fabrication of americium sources occurring at De Soto, though the facility was actually licensed to perform that fabrication activity.

With regards to the TRUMP-S program, we found some evidence in 1989 of TRUMP-S material arriving at De Soto. De Soto was the headquarters for all these sites, including SSFL, Canoga and Downey, the four sort of sister sites. There was sort of an incident where they thought it had become lost.

What really happened was, excuse me, the material arrived at the De Soto loading dock and it was put into a radiological storage locker like it should have. However, what failed was the paperwork was not correct in that the Health and Safety Department was not notified to come in and swipe the outside and take radiation measurements as they were required to.

They eventually found it, and again it was in a radiological storage locker which was locked, and the packaging it came in was intact and there was no external contamination on the outside. Furthermore, this incident report that we discovered actually said that the material was depleted uranium and plutonium. Americium is not specifically mentioned.

We did not find any evidence or documentation in what was available that we looked at of the actual TRUMP-S activities, which would have involved unencapsulated americium occurring at De Soto. Then the fourth one had the smoke detectors. As far as we can tell from the historical records, De Soto didn't have the americium smoke detectors until about April 1985.

Prior to that, they were heat-based smoke detectors. Nonetheless, that's part of the period we're looking at. Any sort of preventative maintenance on those smoke detectors, which really consisted of just general cleaning activities with rags and cleaning solution, that was always performed wherever the detector was.

So that would definitely be at the De Soto site. But any actual repair work on a broken detector, they'd take the detector and work on it in the electrical shop, where they call up the hill at SSFL. Furthermore, there was actually a radiological study by the HPs there about what kind of exposure potential that it was from the preventative maintenance activities.

Again, we're talking about cleaning, and they determine that all the cleaning materials used were

below the NRC levels for least uncontrolled areas. They also monitored the workers involved. They submitted bioassays, which again we noted earlier are difficult to detect anything. But there was no detectable activity for those workers, and that's for americium.

One other thing we found when we were doing this research is that there was documentation describing a survey of an industrial waste drain in the mass spec lab, which is in Building 4 at De Soto. That's the radiological chemistry lab. We're going to take a look at the document in question in a minute so you can see what I'm talking about.

But it looks like it was edited internally, and that there are red strike-through marks, sentence additions, that sort of thing from someone who was probably reviewing the document prior to finalization. The edits that are physically written on it, and again we're going to look at that in a second, they note that the americium was found and it also looks like they couldn't explain it at the time how it got on there.

Then it goes on to note that there are no documented releases of americium or plutonium, so they're sort of scratching their heads on how this stuff got in the waste drain. So we'll take a look at that, and this is very difficult to see from here. It's what I'm talking about is really in the lower right corner, which we have blown up on the next slide.

Hopefully you can see that a little bit. You can see it says "The presence of AM-241 in the drain sample," then it says "was unexplained," but that's crossed out. They give some indication on the magnitude of what that americium was at the time, and again that was found in 1988, and then it notes sort of in the bottom right corner there, "No recorded release of plutonium or americium."

Since we released this report, I actually did a little bit more digging and we found the original 1988 report, and that's exactly what they say. There's americium-

241 in the waste drain, and it was unexplained.

Moving on to thorium, the NIOSH Evaluation Report identified three distinct thorium operations that they discuss in that report. There is the fabrication of fuel-simulant discs in June 1970. They did post-test analyses of those thorium capsules after they had gone, undergone destructive testing offsite, which actually occurred at Sandia later that year in 1970.

Then the third operation was grinding of approximately 540 thorium plates that occurred in early 1979. I think those 540 plates were about 200 kilograms total if I remember correctly. NIOSH noted in the ER that grinding operation included pre- and post-operational bioassay sampling, and they were able to use that bioassay to develop representative thorium intake for that operation.

It's important to note that the NIOSH/SEC ER concludes that the calculated thorium intake from this grinding operation in 1979 can be used to represent internal thorium exposures to workers at De Soto during the evaluation period. I guess that's an important point. There's sort of a coworker model almost on the table. They're not saying there was no thorium there. They're saying it can be bounded by this operation.

So what did we find at SC&A as far as additional activity besides those three, because the real question becomes does that grinding operation truly bound in a way that it can be applied to other workers who might have been involved in other thorium operations that aren't as well documented?

In 1969, we found some, in one of those smear contamination surveys, information about a thorium source program. They actually called it a thorium sealed source program, though I'll note that the smears that were taken were taken on things like a lathe and a welder, lab bench, that sort of thing. So that would indicate at least to me that they might have been fabricating those sources.

And again this is thorium. This is not americium. There was a personal air sampling report for a couple of workers in Building 1 in 1969 that specifically called out thorium as the operation being undertaken. There's a tagged area entry permit. Again, those are the RWPs, Radiation Worker Permits.

It talks about physical inspection of thorium fuel-simulant discs, and that was in March of 1970, and that might have been part of one of the operations that NIOSH noted in their ER. I guess I would just note that that predates the assumed dates that were put in there. So again, these are additional thorium activities that occurred at De Soto, that go beyond what was discussed in the ER.

There's another lapel sampling result that actually calls out that the operation was the cutting of thorium oxide, and that occurred in 1971. Again, this is outside the scope of what was discussed earlier. We'd also note that there are several indications that the SRE fuel and/or materials associated with it would arrive at De Soto and they would swipe it.

But then the trail really goes cold, in that we don't know what the intended future use was, if it was anything more than storage or if they planned on doing anything that would be considered a process that might constitute an internal exposure potential.

Now one confounding thing from our side was that those breathing zone samples, they're given in sort of funky units of microcurie hours per centimeter cubed. So as far as my knowledge, is you need to know how long the operation occurred to be able to convert that into an actual air sample.

That makes direct comparison of these activities a little murky with that grinding activity that's sort of on the table as a coworker approaches. So we conclude the NIOSH really consider at least these additional activities and potentially look for more, considering the data gaps that we discussed earlier,

to really assure ourselves that that grinding operation is sufficiently bounding, and also while this sort of falls more into the Site Profile venue, provide guidance to assure that unmonitored intakes are appropriately assigned. If it's deemed that that is a viable coworker model.

Moving on to the interviews, we note that the NIOSH really documented just two interviews as happening after the petition was submitted. One of those interviewees did not work at DeSoto until the 1990's, and admitted they were giving a lot of information based on retrospective documentation.

The other didn't actually work in the radiological areas at DeSoto. They started in the late 1970's, but they were in a position to likely have knowledge of what types of operations were going on in those radiological areas.

In addition to those documented interviews, there were seven sort of older interviews that had been done for various purposes besides SEC Petition 246. There were seven of them that we identified in the SRDB. But three of them appear to not have worked at DeSoto during our period of interest. They appear to have worked prior to 1965.

And the remaining four unfortunately did not provide any information particular to americium or thorium at DeSoto. Besides those seven interviews, there were actually quite a few interviews that were done by DOE and EPA in the 2010 to 2011 time period, and they were focused on former SSFL workers, but obviously that's going to include those who spent time at DeSoto as well.

As part of that effort, DOE had cleared 121 total interviews for us to look at, and those were cleared for release. 41 of the 121 reported work at the DeSoto facility during the SEC period we're talking about. And in our estimation, 13 of those actually contained information which could be considered relevant.

Unfortunately, americium and thorium were not specifically discussed. But when I say "relevant," they clearly were in a position at DeSoto with direct knowledge of what sort of radiological operations were happening. So we point these workers out, as they might represent suitable future interview candidates if it's deemed necessary, and we'll get to that in a second.

And that third part of the SC&A review was to look at the claimant population, see what they had to say in their computer-aided telephone interviews. At the time of our review, there were 257 total claims. We looked at a sizeable portion, almost three-quarters, though not all of them had a CATI report completed.

We basically selected those claims based on the job title, that they would be in a position to potentially have knowledge of what the source terms they were working with and what they were doing. Unfortunately only a small fraction of this population indicated exposure to thorium and/or americium, and oftentimes they would work at multiple facilities.

So we can't be sure whether they were talking about SSFL, DeSoto or both. But six of them were conducted directly with the Energy employee, and again these might represent suitable future interview candidates.

Petitioner-supplied documents. As I noted earlier, CORE Advocacy for Nuclear and Aerospace Workers provided 20 primary references that were specific to DeSoto. A number of them were repeats of documents that had already been captured, and some were not. CORE Advocacy noted 59 individual items as relevant to SEC-46. Included with the documentation supplied by CORE Advocacy was that affidavit with a former HP who was working at DeSoto.

Unfortunately the affidavit did not necessarily provide direct indications of exposure potential to again unencapsulated americium or any activity including

the de-cladding spent nuclear fuel or any other additional thorium fuel fabrication operations or other work that might not be bounded by again that grinding operation in 1979 that NIOSH has proposed as a suitable method for assigning thorium dose.

However, the worker who submitted that affidavit was actually re-interviewed by SC&A in conjunction with NIOSH. That occurred last month. But as these things go, those results have not yet been finalized. The worker needs to have a chance to go over their responses, correct any mistakes, and they also have to be -- the notes themselves have to be cleared and summarized. So it's a bit of a process, but that's ongoing.

We reviewed each of those items that was on the previous slide, 59 total items give or take, and we looked at each one and the supporting reference documentation that was provided with it. We didn't identify any evidence of internal exposure to unencapsulated americium occurring at DeSoto, direct evidence in those references.

There's evidence of spent fuel arriving at DeSoto in this documentation, but again no direct indication of processing and by extension the exposure potential to any de-clad spent fuel elements which would have contained transuranic material.

We also did not identify operations with the SRE fuel rods or with the SRE fuel rods, which is a uranium-thorium mix, or any other thorium activities in that documentation provided by CORE Advocacy that indicated to us a greater hazard to thorium than that fuel plate grinding operation in 1979, which again has been proposed by NIOSH as a potential coworker assignment.

So to summarize our findings here, Finding 1, SC&A noted significant temporal gaps in available primary documentation, such as health physics log books, tagged area entry permits, contamination smear surveys and general air sample reports. The

disposition of additional primary documentation for DeSoto is not known at this time.

Finding 2. A health physics log book entry involving a contaminated tray that had been used to clean de-cladded fuel was found in a DeSoto hood in a fuel fabrication area. Contamination from de-cladded fuel, which assumes that radiation would contain americium, and even potentially thorium depending on the original fuel composition.

Finding 3. The internal editing of a 1997 document concerning the mass spec lab indicated that a previous survey had detected americium-241 in the facility's industrial waste drains, and the source of the americium was not known then and it's not known now.

Finding 4. Only two individuals were specifically interviewed about DeSoto radiological conditions after the submission of petition 246 in December. SC&A has identified several potential future interview candidates if deemed necessary. So this is -- I tried to give us a little wrap-up to this whole thing, and a preliminary conclusion, which I'll read into the record.

Although SC&A did not find evidence of operational processes involving unencapsulated americium at DeSoto, at least one incident of material potentially contaminated with a transuranic material associated with de-cladded fuel was identified.

Furthermore, it appears americium was detected in the mass spec lab drain samples in 1988, whose provenance is unknown. SC&A has not identified direct evidence of thorium operations occurring at DeSoto during the period under evaluation that would not be noted by the calculated intake rates derived from the 1979 grinding operation that is being proposed for coworker application.

However, SC&A also noted significant temporal deficiencies in the available primary documentation

of health physics activities at DeSoto. Furthermore, the available documented interviews directly associated with radiological conditions at DeSoto under evaluation for SEC-246 are clearly limited at the current time.

So Work Group recommendations and path forward. We met for SSFL and DeSoto last week, last Monday to discuss these things, and the Work Group recommends pursuing further interview with radiological workers at the DeSoto facility during the period of interest.

The other task coming out of that meeting is that NIOSH is going to go through SC&A's report and formally respond to each of these findings and observations that we put forth. That is the end of my presentation. I'd be happy to answer any questions.

Mr. Katz: Thank you, Bob. Thank you very much. So questions from Members in the room? Jim?

Member Lockey: Yeah, Jim Lockey. Just for my clarification, in Slide 26 you talked about the americium in the facility's industrial waste drains. Is that what you mean by this mass spec lab?

Mr. Barton: Yes.

Member Lockey: And how many drains in a mass spec lab that are involved?

Mr. Barton: I can't answer that right now. Again the --

Member Lockey: Well give me an idea of how many drains are in the facility versus the mass spec lab? I'm trying to get a handle on the --

Mr. Barton: Well, the drain was in the mass spec lab.

Member Lockey: So there's one drain in the mass spec. But the other drains, were they looked at outside the mass spec lab, do you know?

Mr. Barton: As far as I know, it was only found in the one drain.

Member Lockey: But did they look in the other drains?

Mr. Barton: As I recall, they were most gross data and gross camera measurements of it for the purposes of cleaning them up and/or ripping them out, because this was part of the decontamination/decommissioning of the facility. So there might have been alpha there, but I think this was the only incidence where they actually pointed out that it was americium.

Member Lockey: Okay, thank you.

Mr. Katz: David.

Member Richardson: Thank you for the presentation first of all, and it helped me to I think understand a little bit more about what's going on. I want to turn again to thorium. It seems like the theme for the day, and as you characterized it, what's proposed in this report was a coworker model, which was used -- I hadn't thought about it in those terms before, for developing a bounding thorium exposure potential for the period 1965 to 1995.

And now help me to understand, if I understand the basis for this coworker model, because as I'm reading it, it appears to be based on a single worker, a single pre-work bioassay sample of urine taken on February 27th.

The worker conducted grinding operations for let's say a very well aged 19 year-old thorium metal from March 5th to the 12th, and then provided a post-urine sample on March 25th, so 13 to 20 days after completion of the grinding operation.

And it's the difference between the pre- and the post-urine sample here which is the basis for estimation of the bounding dose, and we would note that both of those were reported simply I believe at least in this

report as less than one microgram, is that right?

Mr. Barton: That's correct.

Member Richardson: Microgram per 24 hour sample. So am I understanding that correctly?

Mr. Barton: That is my understanding of it. Again, this was -- this was -- it is one worker. He was the one worker doing the grinding. He also wore breathing, so breathing zone lapel sampler, and they have that data as well.

Member Richardson: But the basis for the reconstruction is the difference in between the pre-post --

Mr. Barton: So essentially it would be a missed dose.

Member Richardson: And I don't know. I know that, as again as we've discussed, it's not easy to do bioassay for thorium. That was stated earlier, and one of the difficulties with doing that, am I correct, is the kind of short retention time, short biological half-life of the thorium?

Mr. Barton: My understanding is, and Jim can certainly back me up, but it's -- just not a whole lot of clear --

Dr. Neton: It has a fairly long retention time in the body, in the lung particularly if it's insoluble thorium. Not a lot comes out in the urine though, because it doesn't clear into the bloodstream very well. But you do have a known fraction that would be coming out of the urine, and that's what we would use to calculate what Bob correctly as missed dose.

And the problem with thorium is if you have a routine monitoring program like an annual program, the amount coming out in the urine on an annual, at the end of 365 days is very small. This is almost what I consider almost like an incident sampling or a real-time monitoring program, where they took it fairly quickly after the exposure, even though I forget what

the time frame was, week, month, I forgot.

So that buys you some better detectability, because it's taken much closer in proximity to the exposure itself. Admittedly though, it is a fairly small fraction, and the missed doses would be somewhat large. I don't recall what they were, but the doses that we would assign would end up being fairly large doses because of that.

Member Richardson: Thank you.

Mr. Katz: Do I have other questions in the room? Brad.

Member Clawson: Bob, help me understand what you were talking about, that you can find -- I'm talking about the fuel and the hot cell. You didn't find anything of uncladded fuel?

Mr. Barton: That's right. I think when you refer to the hot cell, I think you're referring to a building at SSFL, where they actually did the de-cladding of the fuel for the purposes of analyzing it there.

The question is, and again that was one of the major bases for the SEC at SSFL, the major question is were they doing something similar or comparable at DeSoto, or was the fuel that they were receiving still essentially in its casing.

Member Clawson: Right, and this is what I was wondering, because I -- and I'm going back years ago. I thought that DeSoto had a hot cell there.

Mr. Barton: They have a hot laboratory certainly. But again, if de-cladding was happening in there, we would hope to find evidence of it. But with what we have for documentation, there was just no evidence that that activity ever migrated over to DeSoto, or that those fuel elements that were de-cladded at SSFL made their way to DeSoto for some sort of analysis, other than that one tray that I described, which is stated to have been used to clean sodium off of de-clad fuel elements.

So that happened somewhere, and if it's contaminated from de-clad fuel elements, one would expect to have that transuranic activity, which would be americium and possibly thorium, depending on what the starting fuel composition was.

Member Clawson: Okay. I'm having a hard time remembering which one's at Santa Susana and which one's at Soto there.

Mr. Barton: Right. A large part of our effort here is to try to find evidence that similar activities were happening at DeSoto, that occurred at Santa Susana, which really preempted the SEC.

Member Clawson: Well if a lot of times when they de-clad a fuel, they're sometimes taking punchings and everything else. That's why I'm wondering do we have any traceability of that moving from Santa Susana to DeSoto?

Mr. Barton: Traceability I can't really speak to. Again, we went through what documentation is available, and as I pointed out, there are some temporal gaps in what's available from the Health Physics staff, the daily reports, which would often, if it was happening I assume it would be documented there.

But as far as assurance, this is our evaluation of what we have for information to date.

Mr. Katz: Dave.

Member Kotelchuck: Yeah. Also a question of cladding. So the determination that unclad fuel, that unclad fuel was sent -- was sent to DeSoto, it's a negative. You didn't find anything, that it's a negative finding. It's the absence of information about de-clad events, except for the one instance that you do identify?

Mr. Barton: That's correct. We simply did not find any information in the affirmative besides that one contaminated tray.

Mr. Katz: Board Members on the phone, do you have questions for Bob?

Member Anderson: No, this is Andy. I don't.

Member Valerio: I don't have any.

Member Anderson: You went over it. I think you've covered it well from our meetings as well.

Mr. Katz: Right. Thank you, Andy. Other Board Members?

(Simultaneous speaking.)

Mr. Katz: Paul?

Member Schofield: I've got a question for Bob.

Mr. Katz: Oh, go ahead Phil.

Member Schofield: Okay. You say that no de-cladding was done. How many -- do you have any feeling for how many times they would send samples? Was it just samples or would they actually take the entire fuel pan and send maybe -- was this a one time thing as far as there's only the one tray, or was this a reoccurring process?

Mr. Barton: You broke up a little bit there Phil, but I think I understand what the question was, and I think Dr. Kotelchuck put it well, in that it's a negative finding and that we did not find evidence of that sort of activity.

Whether it's taking samples and analyzing them outside of the cladding of the fuel element, possibly in the radiochemistry lab, that's just something we did not find documentation of, again except for a contaminated tray. Does that answer your question Phil?

Member Schofield: Yes, it does. Thanks.

Mr. Katz: Okay then. So I think you've heard about the path forward and you have no comments about

path forward. Then we'll go to the petitioner.

Ms. Blaze: Can you guys hear me okay?

Mr. Katz: Yeah.

Ms. Blaze: Okay. I'm D'Lanie Blaze, the SEC petitioner. Before I get started on my comments, earlier we heard from Greg Lewis at Department of Energy. He updated us on their efforts to address concerns about the issues we're having with Boeing Records' responses at Santa Susana.

I just want to clarify that these concerns are relevant not only to Santa Susana, but also to all of its related work sites that we're talking about, which include the Downey facility, the Canoga facility, Vanowen and the DeSoto site.

Employment exposure data for workers at all these locations, we're having issues with that. So I just want to be sure everybody makes that connection.

I'd like to thank the Board, NIOSH and SC&A for their focus on SECs 235 and 246, for Area IV of the Santa Susana field lab and its related work site, the DeSoto facility. Placement of both of these petitions on today's agenda underscores the shared operations and the consistent limitations in the data that have been repeatedly established at both of the work sites.

It gives us an opportunity to talk about the overlapping evidence, and to acknowledge its relevance at both Santa Susana and the DeSoto site, and to the rotating workforce that they shared. I'll talk about SEC-235 for Area IV Santa Susana, and I'll provide the Board with an update on the current situation there, and then I'll talk about SEC-246, and the use of americium and thorium at the DeSoto facility.

First, I'd like to briefly recap the shared operations between Santa Susana and the DeSoto facility. It's been established that NIOSH considers these worksites to represent the same entity contractually

and operationally. The sites shared the same Department of Energy contracts, and they were operated by the same DOE contractor.

They shared the same recordkeeping program, environmental and worker monitoring practices, Health Physics Department, and they used the same radiation badges and badge numbering schemes. This keeps us from interpreting monitoring and exposure locations for workers often.

In addition, they operated under the same radioactive and special nuclear materials licenses and permits, wherein the DeSoto facility was listed as headquarters and identified as the main shipping and receiving location for nuclear materials.

The worksites shared the same nuclear fuels inventory and safety committee, radioactive materials, waste storage and disposal locations, and most importantly the worksites shared the same employees, who routinely rotated between both locations as needed and without changes in their administrative affiliation or their badging.

It's also been established that employees routinely rotated and performed job duties throughout Santa Susana Areas I, II, III and IV, the Canoga facility and the DeSoto facility. Sometimes these workers rotated several times over the course of a single work day.

NIOSH has recognized that we cannot reliably track worker movements at or between these related worksites, and their radiation data alone may not provide the ability to identify which site a worker may have been at when their exposure occurred.

So basically we're looking at two worksites that function in support of each other. Their shared workforce fulfilled the same contracts and the same mission during the same time period. NIOSH uses the same Site Profile and the same Technical Basis Documents for dose reconstruction at both locations,

and NIOSH has passed SECs at Santa Susana, Canoga and DeSoto to encompass the same time periods based on the shared operational and contractual characteristics, the shared employees and monitoring programs and obviously shared data limitations.

One example would be SEC-093, which was written for Area IV and Canoga. The NIOSH ER for SEC-093 states "NIOSH recognizes that the deficiencies of personnel monitoring data outlined in SEC-093 ER would apply to Canoga, given the fact that the Health and Safety Division of the contractor was a single entity, as indicated in the NIOSH Site Profile documents for Area IV of Santa Susana, Canoga, the Downey site and the DeSoto facility."

The data limitations are the same regardless of whether specific processes at any of these worksites may have been a little different. SEC Petition 235 for Santa Susana was submitted in 2017, and initially it was intended to welcome all Department of Energy contractor employees at Santa Susana, regardless of their time clock location or their administrative affiliation, with a particular area or with another one of the related worksites.

NIOSH's decision to limit this petition to 1991 to '93 compromised its intent. It was intended to fix the problems that were caused by the established practice of routine worker rotation, since worker accessibility to Area IV cannot be reliably ruled out.

This is well-supported by EEOICPA Bulletin 1010, which confirms undocumented rotation into and out of the covered area, regardless of a worker's administrative affiliation or time clock location. If we have time at the end, I'll read the excerpt from that particular bulletin.

SEC Petition 235 was also motivated by the 2014 discovery that's been verified by Department of Labor and Department of Energy that since 2005, the Boeing Company has created misleading

employment verification responses, and supplied them to Department of Energy for use in identifying covered employment.

The contractors' information was discovered to routinely mischaracterize eligible employees as workers who just don't qualify for EEOICPA. In 2005, Boeing agreed to provide information that accurately identifies work locations for individual employees, but it was found that instead the contractor was actually creating information to obscure covered employment, effectively diminishing the perception of both covered employment and exposure.

On further investigation, it was found that this practice has dramatically reduced the number of Santa Susana and related site claims that are adjudicated under EEOICPA. This also resulted in an unknown number of incomplete dose reconstructions based on unreported and unevaluated covered employment. Under these circumstances, it's not possible to perform dose reconstruction with sufficient accuracy.

There's evidence of this problem in the majority of case files that I've reviewed, claims that have been filed since 2002, and that have continued into the present. The problem has not been resolved since it was discovered. In fact, it continues to get worse.

At EEOICPA's inception it was verified that Boeing maintains extensive employment databases dating back to the 1940's. Although the contractor did not arrive to the worksite until 1996, well after expiration of these SEC periods, Boeing agreed to act as the custodian of the records and to provide them in their totality upon request for purposes related to EEOICPA.

Records responses were once robust and timely. Hundreds of pages are known to exist for individual employees. But once we identified the persistent discrepancies in Boeing's employment verification process, the quality and completeness of

employment records radically diminished.

Earlier this year, we verified that Boeing recently omitted and altered radiation records for a worker who was employed at Santa Susana and the DeSoto facility over a course of about 45 years. The contractor's records response was missing decades of external occupational radiation summaries, bioassay evaluations and whole body counts.

It contained multiple discrepancies in the worker's recorded dose. The contractor redacted the worker's name, his exposures and entire pages from incident reports that should have detailed his involvement in serious exposure events.

The contractor summarized external exposures by providing DOE with a newly-generated spreadsheet that conveniently omitted all of the work locations were monitoring and exposure occurred. This rendered the documents useless in establishing Area IV work locations. This also prevented Department of Energy from fulfilling the Privacy Act request for the worker's records.

The contractor's response and behavior calls into question the integrity of every response ever provided. Had this worker failed to keep his own radiation records for nearly 45 years, he may never have been able to establish covered employment, much less that he was a member of an existing SEC.

This is the new normal for claimants affiliated with Santa Susana and its related sites. Currently, Boeing remains unresponsive to employment verification and records requests until the very day a claim is due to be recommended for denial.

I represent workers who should easily qualify for existing SECs, but over 120 days have passed without any response from Boeing, and we are receiving recommendations to deny these workers.

On the very day the recommendation has been

made, Boeing has supplied a few scant pages of employment data. No medical documentation, no radiation records, no references to a single work location that can be used to establish covered employment.

But the contractor keeps supplying its misleading employment verification responses. What records is it using to create these responses? We don't know.

While in Washington, D.C. a few weeks ago, I met with Department of Energy about the problem. The agency's observation is that when its contractors omit, obstruct or alter employment records, when we cannot rely on such records to establish covered employment or exposure, an expansive SEC is justified, and I agree.

If Boeing won't provide complete and timely copies of original employment records that can be used to identify specific work locations, then we must assume that all DOE contractor employees were Area IV workers, based on established site practices that involve the routine and undocumented worker rotation into and out of the covered area.

That's the only claimant-favorable, non-adversarial presumption that can be made, and EEOICPA Bulletin 1010 provides the basis for it. This situation presents a solid foundation on which to base an expansive SEC, and there's no excuse for these workers to not be able to move forward under this program. There's no excuse for them not to receive a fair and timely evaluation. I'm just going to get a drink of water. One second.

(Pause.)

Ms. Blaze: Okay, SEC-246 for the DeSoto facility. I'd like to briefly touch on what precipitated the submission of this petition. In 2016, NIOSH passed SEC-234 at Santa Susana, based on an inability to reconstruct dose to americium and thorium with sufficient accuracy.

This SEC was passed as a stand-alone Class, basically unlike other SECs as Santa Susana, it did not take into consideration the shared operations, the worker rotation or the data limitations that have been identified at Santa Susana, Canoga and DeSoto.

This raised some predictable questions. What about those DeSoto workers whose undocumented rotation to Santa Susana Area IV led to americium and thorium exposure? And what about the likelihood that shared operations and processes between the worksites involved the use of americium and thorium at the DeSoto facility?

The worker with the missing records that I just talked about embodies this problem, and he worked at both sites for 45 years. He went from the Hot lab at Santa Susana to the hot cell at the DeSoto facility routinely. If he had been assigned a clock-in location at the DeSoto facility, he wouldn't have qualified for the SEC.

In August, NIOSH presented its Evaluation Report at the Providence, Rhode Island Work Group meetings. A lively discussion erupted when NIOSH concluded that americium and thorium did not present an exposure risk to the workers at the DeSoto facility, conveniently seeming to forget its past acknowledgment of shared data limitations and the inability to establish dose for workers of all of the related worksites, regardless of their differences and actual processes.

When pressed, NIOSH acknowledged that it cannot determine which workers may have been exposed to americium or thorium at Santa Susana versus the DeSoto facility because the radiation data for the workers of both sites is the same. This created some frustration for many of us, because we're all familiar with the challenges of these worksites.

Basically, we can't assume that there was no exposure risk when we can't recognize which workers were there. While SC&A was tasked with the review

of the Evaluation Report, it was decided that unlike previous SECs where shared facility operations, workers and monitoring practices presented the same data limitations for Santa Susana and DeSoto, somehow in this instance it was going to be necessary to prove that americium and thorium were used at the DeSoto facility.

Site specificity suddenly seemed to take precedent over worker radiation exposure, and our ability to accurately estimate it.

So let's talk about the documentation that was supplied, that does establish the use of americium and thorium at the DeSoto facility, and let us begin with NIOSH's Technical Basis Documents that confirm americium and thorium in the DeSoto facility's stack emissions and air effluent between 1955 to 1999.

NIOSH has acknowledged the presence of these radionuclides at DeSoto facility since the creation of the Site Profile, and the presence of these materials in stack emissions and air effluent suggests operational use, obviously outside the confines of the storage vault or a sealed source.

The DHS confirmatory survey of the DeSoto Building 104 mass spec lab also confirms the presence of americium in 1999. Both NIOSH TBDs and the DHS surveys support SC&A's findings, which confirm americium contamination of waste drains due to the decontamination of irradiated components at the mass spec lab in Building 104.

It doesn't matter where it came from or what the process was. We've already acknowledged that we cannot dose reconstruct it. We submitted historic facility documentation consisting of technical reports, incident reports, log books and feasibility studies that confirm the presence and use of americium, thorium and associated progeny at the worksite.

These documents were supplied to NIOSH, the Work

Group and SC&A with an index citing page number and paragraph where the relevant information can be easily located. This information needs to be updated, because since then we've found additional documentation. So I'll provide everyone with a new index shortly.

But the historical documents verify SNAP nuclear fuel fabrication at the DeSoto facility using highly enriched uranium-235, a known source of thorium. Routine shipments and processes involving spent, SNAP and other types of nuclear fuel like fuel from the Piqua project, Hallam and FCEL fuel from Santa Susana are also documented.

Fuel Committee reports verify storage of spent SNAP fuel outside the vault, in an open and uncontrolled mezzanine area, where workers were not necessarily monitored. X-ray processes of irradiated SNAP reactor components and fuel rods, waste consolidation and preparation for disposal, transuranic materials that presented an inhalation risk are documented in incident reports. Uranium, thorium, SRE, reactor fuel cutting and routine shipments of radioactive and irradiated items from Santa Susana to the DeSoto facility are all well documented.

In the Evaluation Report, NIOSH implied that Santa Susana never shipped items to the DeSoto facility. But exactly the opposite is true. The DeSoto facility routinely received items from Santa Susana well into the site remediation period.

The former Atomics International health physicist or HP of Santa Susana and DeSoto provided a signed affidavit and interview, where he confirmed routine shipments of radioactive materials and spent fuel, and repurposed, recirculated, highly contaminated storage containers that were known as the bird cages.

This HP also confirmed the routine practice of labeling containers of radioactive material as mixed fission

products or MSP, with the understanding that any container that was bearing such a label was likely to contain any or all radionuclides generated at Santa Susana. Americium and thorium were no exception.

We located a company radioactive waste disposal report that provided an explanation of waste composition, and that confirmed that mixed fission products from Atomics International also contained man-made transuranic materials like plutonium, americium, uranium and thorium. That document is consistent with the health physicist's recollection.

In addition, we reviewed the DOE Tiger Team report that confirms the improper waste, treatment and handling that occurred at the mass spec lab, along with the analysis of irradiated materials that originated from DOE nuclear reactors likely to contain americium.

The Tiger Team report is supportive of SC&A's findings, along with the NIOSH TBDs and the DHS survey, both of which confirm the presence of americium and thorium in stack emissions and air effluent at the work site to 1999. Moreover, the Tiger Team identified at least 30 serious health and safety infractions at the mass spec lab that during its evaluation had put workers at risk of exposure.

The findings of operational use and processes that involve the americium and thorium at the DeSoto facility are consistent with established operations at Santa Susana, where NIOSH has already determined that it cannot reconstruct dose to americium or thorium with sufficient accuracy.

Based on NIOSH's consideration of these limitations between -- I'm sorry. Based on NIOSH's consideration of these worksites as the same entity, operationally and contractually, the shared employees and the common data limitations between the work sites, it would seem that SEC-246 is well supported.

A decision to accept it would also be consistent with past SECs that encompass the same time periods as Santa Susana and DeSoto, in consideration of these shared data limitations, the shared workforce and the shared monitoring programs between the worksites.

In conclusion, the last item that I wanted to talk about is the Boeing incident report database. When SC&A presented its review of the NIOSH ER in the teleconference on December 3rd, it became clear that SC&A has not been provided with a copy of the database.

The Boeing incident report database contains information that is vital to SC&A's ability to fulfill its assigned tasks, including technical documents on reactor releases that span the entirety of site operations. There's some really important information in this database.

It's my understanding that NIOSH has been in possession of the database since at least 2008. Under the Freedom of Information Act, I obtained a copy of the database and I've submitted several documents from it in support of these SEC petitions.

So I'm sure we all agree that it's necessary that we're all looking at the same information, and to have access to all of the information that is publicly available. Therefore, I brought copies of the database for SC&A, the Work Group and NIOSH.

We've covered a lot of ground. In support of SEC-235, we discussed the established practice of routine undocumented worker rotation into and out of Area IV by Department of Energy contractor employees, the misleading employment verification responses supplied by Boeing, and the ongoing and worsening difficulties in obtaining employment records and radiation data from the contractor.

Clearly, these issues are unresolved, but there are compelling reasons to justify an expansive SEC at Santa Susana, so we can be sure all Department of

Energy contractor employees receive a fair evaluation under the Act. In support of SEC-246, we firmly established the use of americium and thorium at the DeSoto facility.

Moreover, after a decade of considering these sites to represent the same operational and contractual entity, and recognizing that worker records at the related worksites are the same, as Bob stated obviously including workers of both sides, NIOSH found it could not reconstruct dose to americium and thorium with sufficient accuracy, period.

If they could have done so, we would not have SEC-234 at Santa Susana. Thank you very much for coming to Redondo Beach, and for your continued efforts on behalf of workers at Santa Susana and its related worksites. As always, it's a privilege to address the Board, and I welcome the opportunity to answer questions and of course to provide supplemental documentation if required. Thank you. Does anyone have questions?

Mr. Katz: Thank you, D'Lanie. Any questions from Board Members on the line?

Member Valerio: No, none here.

Mr. Katz: Dave, David.

Member Richardson: This is a question. I don't think it's for Ms. Blaze, but I think it's for SC&A. It was mentioned that there was a database, that it was clear that you had not had -- that you had not used. Had you ever asked for it, or did you know that it existed?

Mr. Barton: This actually came up during the December 3rd meeting when we were discussing the two White Papers for Area IV. This came up in December 3rd during the Work Group meeting, where we were discussing those two White Papers that Lara presented, and in those White Papers the statements were made that there was no evidence of

thorium or americium at Area IV in the incident files.

One the reference files we did not have access to at that time. We have since gotten it. I do not know if this is the same Boeing database that Ms. Blaze is referring to. So that came out of the most recent meeting.

Mr. Katz: Thanks.

Ms. Blaze: Would you guys like me to read the excerpt from EEOICPA Bulletin 1010? It's quite short. I think it gives us a basis for SEC-235, if we decide to use it. EEOICPA Bulletin 1010 was issued by the National Office to helps claims examiners identify SEC eligibility at Santa Susana Area IV.

Item 8 just in part states "North American Aviation and its division of Atomics International employed workers at numerous locations in addition to Area IV. Some of these sites are covered under EEOICPA, but are not part of this SEC Class.

"Therefore, the claims examiner will need to carefully evaluate the employment documentation in the file, i.e. records, to ensure 250 days of covered employment at Area IV. There are employees who would have clocked in at a Santa Susana field lab location other than Area IV, but who would have had reason to enter Area IV from time to time as part of their duties.

"In these instances, the claims examiner needs to use any reasonable evidence, such monitoring records and division and department affiliation records, affidavits, etcetera," the very types of records that we're now not able to get from Boeing. So I think it's reasonable to make the assumption that these workers had access to Area IV. That's it.

Mr. Katz: Thanks D'Lanie. I mean that is a basis by which DOL can determine how many days a person has in a Class, but it's not a basis for establishing an SEC Class. But so --

Ms. Blaze: And they recognize the problem, that's all.

Mr. Katz: Yeah, thanks. So we have path forward. This is sort of like the previous petition in that there's more work already laid out to be get done. Is there any other questions? Are there any questions about the path forward before we close this discussion?

Member Lockey: Yeah, I have one question. You mentioned stack emission data, and I didn't hear that mentioned in the NIOSH presentation.

Mr. Katz: Right.

Member Lockey: Did I miss it? Did I miss it?

Mr. Katz: No. There's no -- I'm sure there's been no discussion of stack emissions but --

Ms. Blaze: It's in the ETEC Occupational and Environmental Dose ORAU-TKBS 38-4. Page nine, Table 4.1 identifies the facility air effluents confirms americium, thorium and associated progeny at DeSoto, and page 12, Table 4.3, Annual Occupational Environmental Radionuclide Inhalation at DeSoto confirms americium, thorium and associated progeny at DeSoto facility, 1959 until 1999.

Mr. Katz: So do you have a question for Lara?

Member Lockey: I assume that will be addressed going forward.

Mr. Katz: Lara.

Dr. Hughes: It's my understanding this is the analytes they reported. They're not high levels or anything that they observed. They just reported the analytes. They did an analyte panel off the stack samples as far as I understand. Just I need to look into it some more.

Member Lockey: I would appreciate that.

Dr. Hughes: It's not, it's not pointing towards like,

you know, huge emission levels of these nuclides in any way. But I'm not -- I don't have the levels, the results handy right now. It's in the environmental TBD. It's the stack emission samples that were reported in this environmental TBD.

Member Lockey: See, I'm not knowledgeable enough to know if the levels would be from the work process or just background levels. That's what I don't -- I don't --

Dr. Hughes: Yeah, I think we're looking at background levels.

Member Lockey: What's that?

Dr. Hughes: It's more or less background levels as far as I know.

Mr. Katz: Is that something you can confirm I guess is what the --

Dr. Hughes: Yeah, we can -- we can come up with a response to that, yes.

Mr. Katz: What's being asked here is how those levels, whether those levels are relevant or not. Thank you.

Member Lockey: That's the question I'm asking.

Mr. Katz: Yeah. No, that's a good question, right. Thanks. Thank you Lara.

Member Clawson: While Lara is there I've got a question for her presentation if I can.

Mr. Katz: Go to it, Brad.

Member Clawson: Okay. Just in the back there, in the air data conclusion you put in there that the raw data log books are potentially available. Does that mean that they're available or not, or we have just not pulled them?

Dr. Hughes: We have not pulled them.

Member Clawson: They are --

Dr. Hughes: We don't usually -- in the research we're done, we tend to look at reports that have the data in somewhat a digested manner. We don't necessarily go to like the log book level, but you understand that we're looking at the 50 year operational period of a site that employed hundreds of people.

It's an unsurmountable amount of data to go through. Most of those are handwritten. So we usually start at looking at data that is a little bit more easy to handle, that is not as time-consuming. So the same with the -- regarding those air data, the log books. We just have not searched for those because the air data has not been a major focus of DOL. We mostly look at bioassay.

Member Clawson: Okay. What was DeSoto's hot shop's major job? The reason why I'm asking this is because I just pulled up SNAP fuel. I've already been to the SNAP reactor, where it was up there and it's explaining the cladding on the ten was broke and everything else.

At some place, they had to be tearing apart this fuel. I know where it eventually ended up because I babysat it. But at some point, they have to be tearing this apart, and there's got to be some kind of a record of where this was done, because reactor up to SNAP was not designed for disassembly of fuel elements.

Dr. Hughes: Right. The SNAP reactor was at Area IV.

Member Clawson: Right.

Dr. Hughes: And the -- as far as I know, the fuel was disassembled at the hot, what they refer to as the hot lab, which was at Area IV.

Member Clawson: Okay, okay.

(Off mic comment.)

Mr. Katz: Excuse me?

Ms. Blaze: If I could add to what Lara had to say about the SNAP fuel.

Mr. Katz: Go ahead.

Ms. Blaze: The health physicist that we interviewed was primarily assigned to the SNAP complex at Area IV and also at the DeSoto facility. They fabricated the SNAP fuel at the DeSoto facility. They tested in the SNAP reactors at Santa Susana, and that's I think really descriptive of why we have the degree of worker rotation that we do, because things were developed and components were created at Canoga and DeSoto, but they were implemented into prototypes that were tested at the test site in Santa Susana. So you have workers going all around the sites as needed.

Now according to the HP, because they were researching, they kept sending the fuel back down to DeSoto in order to check the enrichment levels, and that was why they kept getting these contaminated bird cages, which were the shipping containers, going back and forth, back and forth.

There's considerable documentation just on the bird cage scandal alone, because these highly contaminated vessels just kept surfacing no matter what they tried to do to clean them. But they went back and forth.

Mr. Katz: Okay, thank you. Thanks D'Lanie. Dave.

Member Kotelchuck: Ms. Blaze, you talked about a Work Group --

Mr. Katz: Can you speak right into the mic please?

Member Kotelchuck: Sorry. Thank you very much. You talked about a worker who kept his records for 45 years, and you either implied or said that

disagreed with the information that was provided by the company. What happened? What followed from that in terms of that person's, the determination of that person's status as a claimant?

Ms. Blaze: We were able to establish that he was covered under the SEC that exists at Santa Susana Area IV, merely because he kept his records for 45 years. So we were able to go through those and establish the work locations and stuff that was required.

But when we carefully compared them to what had been supplied by the Boeing Company, the discrepancy are very alarming. I did a case study on it, and I'd be happy to share it with you, a line by line case study of the comparison.

Member Kotelchuck: Is it possible that there are other workers who kept such records, and one case is one case. On the other hand, if there were several or a number of them?

Ms. Blaze: It's likely that he wouldn't have been the only worker in that particular situation. But it is very rare that we run into workers that had such forethought in keeping their records.

Member Kotelchuck: Yeah.

Ms. Blaze: And I've been saying for a while, after the number of case files that I've reviewed, I've become pretty familiar with what we should expect to see in them with respect to radiation data based on work processes and job titles. I've suspected for a while that we're just not getting everything, in particular the original Landauer external exposure summaries, which are vital in establishing Area IV employment because they have the location and monitoring.

So it will show if a worker was at the Hot lab in Area IV, for example. Those have been systematically vanishing from the records that we receive, even though based on a job title and the worker's

recollections, we really would expect to see them in there.

So finally it was kind of a miracle we ran into this worker, and he laid all these records on us, and we compared them to the response and we're pretty amazed.

Mr. Katz: Okay. So we should learn more when we get the DOE study, because they went specifically to follow up on this case that D'Lanie's talking about.

Member Kotelchuck: Right, and but again, one case is one case. It does, it's too bad that other similar estimates or documents don't exist. Perhaps not complete documents but --

Ms. Blaze: This was definitely the most glaring that we've seen so far. But I'd be happy to share the case study with you if you'd like to see it.

Member Ziemer: This is Ziemer. Could I ask a follow-up on the Landauer question?

Mr. Katz: Paul, go ahead.

Member Ziemer: Has anyone gone back to Landauer zone archives and checked their records, because they have archived most of the film badges that they've done over decades.

Mr. Katz: So that's a question for NIOSH probably.

Member Ziemer: Yeah, I assume it is, right.

Mr. Katz: Yeah. Thanks, Paul.

Member Ziemer: Because I know another situation which included General Steel. We did, I get some records back from Landauer directly.

Dr. Hughes: We have not looked into the Landauer archives for the site, no.

Member Richardson: And could I ask? I mean this is probably not a question for NIOSH, but currently

does Department of Labor reach out to Landauer to ask for records, or do they only go to Boeing?

Ms. Blaze: Only Boeing.

Member Beach: Let me interrupt. Part of the issue is not being able to establish a worker in that Class, correct?

Mr. Katz: Correct.

Member Beach: So that would be DOL's purview. So have -- Greg's report will be very enlightening, I think, in that case.

Mr. Katz: David.

Member Richardson: So but what NIOSH does have as their responsibility is the dose reconstruction, and if you're receiving records which don't have location information, how do you proceed with some of the steps in a dose reconstruction?

Member Beach: Good question.

Dr. Hughes: Doses are typically reconstructed based on -- let's assume the worker has records, bioassay data and dosimetry data, that is used. It's not necessarily paramount to know the exact location where this worker worked. I think the location issue is mostly for DOL to place the worker at the given site.

Member Richardson: So for the Site Profile for Santa Susana or DeSoto or any of these facilities where people would be going to Boeing, I recall -- again, it's been a while. But in some situations, Oak Ridge for example, one might have different assumptions about energies or geometries based on work locations, or photon/neutron components.

Lots of things might have some spatial variation in them, and that's just not necessary at all at this point?

Dr. Hughes: Right. Often that type of information is available. If it's not available, typically they use the most claimant-favorable. Whichever results in the highest dose would be used for dose reconstruction.

Member Richardson: So it's not -- so you're getting a feed of records back now which at one point would have had information of greater specificity with regard to location. You receive lesser specificity and it's not a concern because you're going to default to more general assumptions?

Dr. Hughes: Right. Keep in mind -- well, it depends. In some cases, where there's already an SEC and we determined the internal infeasibility, we wouldn't reconstruct internal dose. For cases where -- that do not fall in the SEC, we do partial dose reconstructions. For Area IV, for DeSoto, it would be a full dose reconstruction.

So yeah as I said, I mean. We use all available data. If location data is not available, typically they use -- they would use whatever's most claimant-favorable. Often some kind of information is available. We're looking at the worker records that we get back from Boeing.

Often, there is a worker -- we do a worker interview if the worker is available or with the survivor, if that's necessary. We typically look at all the information that is available to NIOSH. That includes the DOL file. There's like an exposure matrix type information. We usually take into account everything that's available.

Member Richardson: Thank you.

Mr. Katz: Jim.

Dr. Neton: I just think it's important to point out that we reconstruct a dose, the dose to the worker that the Department of Labor said where he worked. We do not make that determination. So if it says he has covered employment at DeSoto for this time period,

that's what we do. We do not try to determine if he worked --

Member Richardson: I wasn't implying that. I was asking about the location information, which might be informative about the conduct of some of the assumptions in the dose reconstruction.

Dr. Neton: Well, the location doesn't matter. If the Department of Labor tells you he worked at DeSoto, that's what we're going to reconstruct. But we don't get that information.

In fact, I think we have a database of all their monitoring information in-house. They've provided us that entire disk drive that had all their monitoring data, both internal and external but --

(Off mic comment.)

Mr. Katz: Hello. People -- wait. The outside line's gone? Oh great. Did it just drop just now or --

(Off mic comment.)

Mr. Katz: Oh, I heard the beeps. So that was at the end of the discussion. If we're at the end of this discussion at this point, I don't know. I can't read Paul's mind and the others on the call. We could -- at this point, we didn't -- we never had a break. It's been a while. Someone might need a comfort break.

Hello folks on the line. Folks on the line, if you can hear me, the line, your line just dropped somehow. But I think we have you back. Do you hear me?

Member Valerio: Yes. We can hear you now.

Mr. Katz: Okay, okay. But I think you missed -- you didn't miss anything. It actually -- we heard a beep, it dropped right after the last remark.

Member Schofield: We missed about three minutes.

Mr. Katz: Yeah, but three minutes of nobody speaking. So I think you're okay, and we're going to

take a break now, and then reconvene for the public comment session, which begins at five.

Member Field: Okay Ted, thank you.

Mr. Katz: So that's about 15 minutes.

Member Schofield: Thanks.

Mr. Katz: Thanks everybody.

(Whereupon, the above-entitled matter went off the record at 4:45 p.m. and resumed at 4:59 p.m.)

Mr. Katz: Okay then. Let me just check and make sure I can be heard by people on the line. Paul or somebody, let me know.

Member Schofield: I can hear you just fine.

Mr. Katz: Right, thanks. Oh Phil, thank you. Okay. So we're about to start the public comment session. Just let me make a couple of remarks for in case we have any public commenters that are unfamiliar with the Board and its transcript policy.

Public comments go into the record with the rest of the Board meetings proceedings. So it's verbatim transcript. Everything you say as a public commenter is recorded, and ends up published for everyone else to read. So it's fine for anything you want to say pertaining to yourself and so on.

If you talk about other people, you're at liberty to do that, but we will redact the transcript, from the transcript any identifying information on other individuals that you might discuss in your public comments, to protect their privacy, because we don't know that they're willing to be discussed publicly as you might. But anyway, you're free to do so, understanding that's the way the redaction policy works for the transcript.

With that, I think we'll go right into public comments then, and let's begin if we have any -- we do have --

we have at least one public commenter in the room. Are you addressing a California site? Yes, that's Al Frowiss.

Mr. Frowiss: Senior.

Mr. Katz: Huh?

Mr. Frowiss: That's Al Frowiss, Senior.

Mr. Katz: I know, but you also I thought were signing up. No? Oh okay, all right. Sorry.

No, no, thanks. I haven't gotten to the line yet. I'm just making sure. So there's no one in the room to comment. So then on the line, I'm just looking down the list, and there's only one party I don't know, and I don't know what site this party is interested in, but we'd like to start with the California sites. This looks like a Kirk Domina.

He's in the room? Oh, he's Hanford. He's in the room though? Oh okay. So Kirk goes first. Oh Kirk, sorry.

Public Comment

Mr. Domina: I just want to talk about the -- I'm Kirk Domina. I'm the Employee Health Advocate for the Hanford Atomic Metal Trades Council. We represent about 2,600 active workers at Hanford, and I just wanted to talk about the SEC for our prime contractors from -- that's still being discussed from 1984 to 1990, because they did approve one for the building trades in 2015 that covers '84 to '90, because they didn't want to hold up the Class.

And so -- and I did listen to the subgroup meeting in October of this year discussing it, and I guess I was a little disappointed because it appears to me that we're a couple of years away, in my opinion, because there's some work to do -- and I don't -- you guys are busy, I get it. NIOSH, SC&A, the Board. But you know, today in the DOL report it talked about Hanford being number three for the new claims.

Well I went back and looked, going back to about 2009, and there's been like 31 meetings of this Board in person, and 28 of those times Hanford had the most new Part B claims.

The other two times, we were number two. And so I guess I would just ask that if we could get a little more push, because you know we wholeheartedly accepted doing the building trades one from three years ago to get that Class going, and I just see where this one going a little bit longer than I guess we would like to see.

Because our workers that are getting sick are my age and younger. It's moved down a generation, and if I, you know, just ask for a little more push. Thank you.

Mr. Katz: Thank you, Kirk, and let me just say in response that we've had discussions at this meeting on the sidelines about just how to expedite the Hanford work going forward from Brad and members of the staff on both sides, so that we could do just what you're asking them for. So thanks for the comment, and we agree, and we'll hope to get there more expeditiously than you're worried that we might. Thank you, okay.

So now I'm going to folks on the phone, and the first I have listed first in, Terrie Barrie.

Ms. Barrie: Hello, and thank you so much. Good evening Dr. Ziemer and Members of the Board. My name is Terrie Barrie with the Alliance of Nuclear Workers Advocacy Groups, and I appreciate the time to call in my public comment.

I jumped on late today because I had other commitments, and when I jumped on, I heard Ted Katz mention that NIOSH responded to my comment about the Board at the August meeting. I never received a copy of those comments, and I have to admit that LaVon Rutherford is excellent about responding to my emails and acknowledging them.

So I'm wondering if those comments are normally shared with petitioners, or if we need to file a FOIA request for those?

Mr. Katz: So Terrie, Terrie?

Ms. Barrie: Yes.

Mr. Katz: The comment to your comments. So the comments are your comments to the Board.

Ms. Barrie: I know but -- great but --

Mr. Katz: And the responses are I think with LaVon he generally contacts you by email or phone, but that's how it's done.

Ms. Barrie: Okay, because I haven't received any specific response, and I shared an email with him August 29th and again on September 25th, and he acknowledged and responded quickly, but not to my public comment in August. So I'll get with LaVon about those.

Mr. Katz: Okay. Do you want to come to the mic, just to clarify whatever might be the case here?

Ms. Barrie: I have an extra pair, LaVon.

Mr. Katz: Stu is -- Stu is a little closer.

Mr. Rutherford: Okay. Terrie actually, the number -- one of the comments was there a number of exotics for which she does not believe NIOSH has come up with the methodology to reconstruct dose? Actually, this response was -- and it says it is unclear whether your exposure to these exotics was at Rocky Flats.

Those are -- that's an issue that would be addressed in our Site Profile, which we've been developing, and the updated Site Profiles will be out in April. So no, I didn't respond directly on that issue to you.

Another issue you had brought up was about the boxes, and I think you even discussed that with Doctor, or discussed some issues with Dr. Howard.

But the boxes, we are addressing that issue, and as soon as we have a detailed response for that, I will give that to you.

Mr. Katz: Right, and Terrie -- Terrie, that's what I said actually in the meeting, is that they were following up on the boxes issues.

Ms. Barrie: Right, I remember that, yeah.

Mr. Katz: Okay.

Ms. Barrie: But it was the exotics that I didn't remember.

Mr. Katz: Okay.

Ms. Barrie: And LaVon, thank you very much for clarifying that. So the bulk of my comments tonight have to deal with qualifying petitions, and for years, petitioners and advocates alike are confused why some petitions were qualified to be reviewed by the Board and others were not. Hello?

Mr. Katz: Hello, wait. Someone else is on the line who shouldn't be talking. Right now, we're supposed to be hearing from Terrie Barrie. Terrie, are you still there?

Ms. Barrie: I am, yes.

Mr. Katz: Okay, go ahead.

Ms. Barrie: Okay. The published regulations are quite clear on what information must be submitted in order for a petition to qualify. Those are first of all the petition must be submitted by an authorized party, a worker, a survivor or a union representative.

Then the petition must provide documentation or statements by affidavit that the proposed Class was not monitored, or that records were lost, falsified or destroyed, or a report from a health physicist or other individuals with expertise in dose reconstruction documenting the limitation of existing exposure

records at the facility, or a scientific or technical report published by a government agency such as the Defense Nuclear Facility Safety Board, which identifies dosimetry and related information is unavailable due to lack of monitoring or destruction or loss of records.

And that's it. It seems pretty simple. So we don't understand why some petitions do not qualify for review by the Board. For instance, seven -- and I understand that Pinellas was addressed today too. Seven petitions were submitted for the Pinellas plant. None of them qualified, despite having at various times the DOE Tiger Team report, a Pinellas health physicist report and documentation of five years' of dosimetry records are missing.

I think the answer may lie in the previously unpublished internal procedure DCAS-PR-004, and especially Revision 1, which was released April 15th, 2011. Section 6.1.5.1(2) allows DCAS to determine the credibility of assertions offered by petitioners in sworn affidavits.

Determining the credibility of an assertion, affidavit or the relevance of scientific or technical reports should not fall under DCAS' purview, either under the regulations or the law itself. It is ANWAG's position that it is the Board's responsibility to determine whether the petition qualifies for review, not DCAS.

It is the Board's responsibility to review the evidence the petitioners provide to support their position. Now if the Board delegated this responsibility in the past, I would appreciate a copy of the transcript or memo which details this delegation of authority.

ANWAG submitted a letter to Dr. Howard, asking that the regulation be reissued for public comment, and that this reissuance include DCAS' responsibility to determine the quality of the evidence submitted with an SEC petition. That, of course, is a long, involved process.

However, I respectfully ask the Board take it upon themselves to review the petitions, which DCAS determined did not qualify and ascertain if those petitions did indeed provide the minimal evidence required in the regulation. I also ask DCAS to post to their website all petitions which did not qualify, complete with the evidence the petitioners presented, as well as their letter why the petition did not qualify.

Again, I thank you, the Board for its time and service, and have a good holiday. Thank you.

Mr. Katz: Thank you Terrie, and I will not respond fully to what you just suggested. But I will note for you that the Board actually did earlier on review a large sample of denied petitions, and the basis thereof and they concluded at the end of that review and these were appropriate decisions by NIOSH.

But you may receive more response from NIOSH subsequent to this meeting.

Ms. Barrie: Great, thank you.

Mr. Katz: You're welcome.

Ms. Barrie: Thank you.

Mr. Katz: And next I have on my list Al Frowiss, Sr.

Mr. Frowiss, SR.: Thank you. This is Al Frowiss, Sr. and I'm a claims advocate for 11 years, 3,500 cases, and I'm also a petitioner on the Lawrence Livermore petition that's pending. I'm in Rancho Santa Fe, California. The phone number is [identifying information redacted]. I have a brief comment on the two California sites that were discussed today, as well as some brief comments on Savannah River site.

Since it's all fresh on our minds, I'll talk about DeSoto and Santa Susana first. I echo the petitioners' reporting regarding the deficiencies or stonewalling by Boeing regarding verification of employment at all of the Atomics International sites, all four sites.

They have routinely -- and I've done a lot of cases there. They've routinely over the years failed to even find any records of quite a few of my clients. But we were able to win most cases where the claimants actually found in their attics or their basements some shred of papers from 50 years ago, such as a dosimeter record or a transfer paper showing that they transferred from Rocketdyne to Atomics International.

With those kind of pieces of evidence, suddenly magically then Boeing would finally agree with the Department of Labor that yes they, you know, they had some records. So furthermore, I'd like to say that it's true that many employees at Canoga or DeSoto clocked in at that facility where their desks were located, but in fact spent a great deal of time of many of their work days at Area IV doing and dealing with tests.

But all of their records show that they were either Canoga or DeSoto employees, and thus they don't qualify under the Area IV SEC, particularly in regard to DeSoto employees. I've talked to Greg Lewis at the Department of Energy headquarters many times over the past several years, complaining about these deficiencies or stonewalling regarding the Boeing responses.

So that's basically all I have to say about that at this time. Savannah River site, much has been said today already about Savannah River site and all the different things that are going on that hopefully will break the logjam. I hope for the 5,800 denied SRS cancer cases that something gets done soon.

In August of 2017, 16 or 17 months ago, Brad Clawson asked Dr. Melius if the SRS petition now ongoing for 11 years covered all employees or just the construction trades. I believe Dr. Melius said construction trades only. I could be wrong, but I think that's what he said.

What I'm questioning today is does that mean that

when any -- when any action may be taken by the Board, such as an SEC, will it be solely for construction trades people, or can it be for all employees? In other words, does the Board have the discretion to decide that, even if the petition was only for construction trades?

And if something needs to be done, should a new petition be filed to encompass all employees? That's all I have to say for today. Thank you.

Mr. Katz: Thanks, Al. Does -- Stu, do you want to respond to that at all?

Mr. Hinnefeld: Well, I would just offer it depends completely upon the reason. If an SEC is granted, it depends upon the reason why the SEC is granted.

So if the infeasibility applies only to construction workers because of some difference in how they were monitored or how they were exposed compared to the in-house workers, then the construction workers it would be limited to construction workers.

If the infeasibility is not specific to construction workers, if it's a general problem then it would not, and the Board or we in our recommendation have the authority to expand beyond what the original petition group was, right.

Mr. Katz: Okay. Thank you, Stu. Okay, good. Next on the list, Knut Ringen.

Mr. Ringen: Thank you Ted and Members of the Board. I'm going to talk about Savannah River also. My name is Knut Ringen. I'm the senior science advisor for CPWR, the Center for Construction, Research, and Training, and I'm also the principal investigator on the Building Trades National Medical Screening Program.

I've spoken to you a number of times before about Savannah River, and I was not aware that it was being discussed earlier today, because I didn't see it on the agenda. So if it has been discussed, then I'm

unaware of that discussion and I apologize for that.

Obviously, we are in distress about the lack of progress on Savannah River, and really, really saddened by the failure of the NIOSH management to rein in this evaluation that has gone on forever, and we're also saddened that this Board has not had the courage to stand up and insist on something being done or that its Working Group has not been able to make a decision either.

The reason I'm calling in today is because on October 9th, Gordon Rowe died. Gordon Rowe was an electrician at Savannah River site from 1952 to 1955, when he developed cancer and had to retire. Gordon was a very good friend of mine and a good colleague. Most of all, Gordon was a very strong and very honorable man, and he was the lead petitioner on the Savannah River SEC application or petition.

For the last 25 years, he struggled with recurring cancer. But in spite of that, he first and foremost committed himself to helping people who needed the help more than he needed help.

Now he is gone, and as far as we believe, because we've not been able to contact the other two petitioners or the lawyer who has represented them, because he is also generally disabled I believe, it's likely that all of the petitioners on the Savannah River site are no longer with us.

So in effect, there may be no one left to challenge the evaluation that NIOSH is promising that is going to complete any day and apparently is not prepared to do so. I just want to remind some of you of the history here. In 2003, the workers at Savannah River invited NIOSH to come down and hear their stories, because they said there's no way that NIOSH would be able to reconstruct dose the way that it said it would do it.

When NIOSH came down there and set up interviews with lots of workers that confirmed this generally,

and nevertheless did nothing in response to it, in 2007 the workers, through their petitioners, filed a request for an SEC at Savannah River.

In 2011, this Board agreed that the SEC should be established because there was no way to determine whether certain workers, particularly the building trades workers on the site using this method that NIOSH had proposed to use, which was to rely on the codes, on the radiation dose records.

So an SEC was established that runs through September 30, 1972. Since 2011, there has been continuous analysis and model building by NIOSH to prove that dose reconstructions can be done, and it's never been completed. Just recently, I happened to see that there's now still a discussion about when thorium dose in the tank farms can be constructed.

That's an issue that's been looked at and reviewed and evaluated since 2014 without conclusion. That's how bad things are. I urge you to go back and look at the transcript of the February 9 meeting of the Working Group on Savannah River that Brad Clawson has or supposedly has.

There's -- there's the discussion starting on page 73 about a path forward. In it, Jim Lockey says, "I agree with Brad Clawson. It's gone on long enough and we need to identify the issues, get a plan in place and say yes, we can solve this or we cannot."

Taulbee then responds, "I'm asking what data did you just request from us, so we can provide it?" Fitzgerald on behalf of SC&A then responds, "That's part of what we need to figure out." So now after 11 years, we have a discussion here about what are the issues that we need to address, and can we develop a plan for it. But we don't really know what data we need, because we don't know what the issues are.

This has been going around and around and around like this for 11 years, and it's time to stop it. My request to this Board out of respect for the men and

in memory of Gordon Rowe, is to make two decisions today. First of all, I ask you to hold your next meeting, which is scheduled for April 17th and 18th, in Augusta, Georgia.

Secondly, at that time make final up or down vote on the remaining time period in this petition, so the petition can be closed. There are no more petitioners. You have to take this and settle it. It's time to get this tragic charade closed. Thank you very much for your time, and have a Happy Christmas.

Mr. Katz: Thank you, Knut. I don't have any others on the list, but do we have other people -- other people on the line to comment? Sorry?

Member Valerio: I can hear, Ted. This is Loretta.

Mr. Katz: I'm sorry. So again, I'll ask again, do we have any other -- I don't have any listed. But do we have any other people who would like to comment, who are on the phone line?

Ms. Jacquez-Ortiz: Yes. Ted, this is Michele with Senator Tom Udall's office.

Mr. Katz: Oh great. There you are.

Ms. Jacquez-Ortiz: Michele Jacquez-Ortiz.

Mr. Katz: Okay.

Ms. Jacquez-Ortiz: Yeah. No, I've been on for a while, but I didn't hear my name called up, so I was just waiting for other folks to finish. I'd like to read a statement on behalf of Senator Udall into the record.

Mr. Katz: Right. Go right ahead, and before you read it in the -- before you read it in the record, just let me ask you too, if you would email it after you read it, that will just assure that we get this correct in the transcript.

Ms. Jacquez-Ortiz: Okay. That will be in a couple of days.

Mr. Katz: That's fine.

Ms. Jacquez-Ortiz: All right. I'm happy to do that.

Mr. Katz: No rush, no rush.

Ms. Jacquez-Ortiz: I'll email it to you. Okay, very good.

Mr. Katz: Thank you.

Ms. Jacquez-Ortiz: Okay. So this is a statement from United States Senator Tom Udall, December 12th, 2018.

"Thank you Chairman and Members of the Advisory Board on Radiation and Worker Health, for the opportunity to submit a statement into the record. I work with a bipartisan coalition in Congress to ensure that the Energy Employees Occupational Illness Compensation Program Act is serving claimants consistent with the law and Congressional intent.

"You will hear tomorrow afternoon a presentation focused on challenges associated with the Los Alamos National Laboratory Special Exposure Cohort Petition. However, important questions raised in this discussion apply beyond LANL and are relevant to the Sandia National Laboratory SEC petition, among other Department of Energy facilities with petitions under consideration.

"In 2012, the National Institute for Occupational Safety and Health (NIOSH) submitted an initial recommendation with which the Advisory Board concurred, that allowed approval of LANL Security Guard Andrew Evaskovich's SEC petition through December 31st, 1995.

"Five long years have passed before the Advisory Board Work Group held its first meeting in 2017, to discuss the remaining years through 2005. Since

that time, there has been much discussion. I am concerned that this LANL petition and other SEC petitions, including Sandia National Lab, have taken so long for a decision.

"The agencies that administer EEOICPA, including NIOSH, have a responsibility to act on these petitions in a timelier manner. For instance, in August of 2017, the Work Group requested NIOSH to report, investigate and respond to the issues raised in LANL's 1999 self-assessment report.

"This 1999 report detailed serious deficiencies LANL identified with its bioassay program, after promulgation of 10 CFR 835. It is over a year since the Work Group requested this information, and NIOSH has not responded in a manner that substantively addresses the request.

"In addition to the New Mexico facilities, other sites are also experiencing major delays in resolving SEC petitions. Congress enacted EEOICPA with the intention that the program would be science-based, and that it would pay legitimate claims in a timely manner without unnecessary bureaucratic hassles. That is the spirit of the law.

"EEOICPA is complicated and requires expert analysis on many levels. While the Advisory Board has a difficult task before it considering the complex issues associated with this program, I am concerned about the long delays and how they affect the workers with a specified cancer or their survivors.

"I appreciate the hard work and long hours each of you commit as Members of this important Board. I request that the Board, NIOSH, the contractor SC&A and DOE accelerate the SEC petition process, while maintaining the integrity of the research. Thank you for your valuable and generous service, and for allowing time on the agenda for this statement. Tom Udall, United States Senator."

Mr. Katz: Much thanks for reading in that statement,

and for getting that statement from the Congressman.

Ms. Jacquez-Ortiz: Thank you, Chairman.

Mr. Katz: Any others? Any other members of the public with comments?

Going once. Okay. So that concludes the public comment session, and we will see you all bright and early tomorrow morning for the rest of the meeting. Thank you everybody, and thank you everyone on the line, Board Members, members of the public for hanging in with us today. Much appreciated.

Adjourn

(Whereupon, the above-entitled matter went off the record at 5:29 p.m.)