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UNITED STATES OF AMERICA

CENTERS FOR DISEASE CONTROL

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NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

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ADVISORY BOARD ON RADIATION AND WORKER HEALTH

+ + + + +

102nd MEETING

+ + + + +

THURSDAY, NOVEMBER 6, 2014

The meeting convened at 8:30 a.m., Pacific Standard Time, in Hilton Garden Inn Los Angeles/Redondo Beach 2410 Marine Avenue, Redondo Beach, CA, James M. Melius, Chairman, presiding.

PRESENT:

JAMES M. MELIUS, Chairman
HENRY ANDERSON, Member
BRADLEY P. CLAWSON, Member
R. WILLIAM FIELD, Member*
DAVID KOTELCHUCK, Member
RICHARD LEMEN, Member
WANDA I. MUNN, Member
DAVID B. RICHARDSON, Member
GENEVIEVE S. ROESSLER, Member
PHILLIP SCHOFIELD, Member
LORETTA R. VALERIO, Member

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PAUL L. ZIEMER, Member
TED KATZ, Designated Federal Official
REGISTERED AND/OR PUBLIC COMMENT PARTICIPANTS

AL-NABULSI, ISAF, DOE
ADAMS, NANCY, NIOSH Contractor
BARRIE, TERRIE*
BLAZE, D=LANIE
BURGOS, ZAIDA, NIOSH
CRAWFORD, CHRIS AFRANK@, DOL
FITZGERALD, JOE, SC&A
HARTSFIELD, DEKEELY, HHS
HINNEFELD, STU, DCAS
HUGHES, LARA, DCAS
KINMAN, JOSH, DCAS
KLEA, BONNIE
KUROWSKY, LORRAINE
LEWIS, GREG, DOE
LIN, JENNY, HHS
MCKEEL, DAN*
MCFEE, MATT, ORAU Team
NETON, JIM, DCAS
PACE, JOHN*
ROESCH, CHARLEEN
ROESCH, DANIEL
RUTHERFORD, LAVON, DCAS
SCHULTZ, JEFF*
STIVER, JOHN, SC&A
WORTHINGTON, PATRICIA, DOE
ZEITOUN, ABE, SC&A

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T-A-B-L-E O-F C-O-N-T-E-N-T-S

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P-R-O-C-E-E-D-I-N-G-S

(8:29 a.m.)

CHAIRMAN MELIUS: -- Radiation and Worker Health, call to order. And I'll turn it over to Ted.

MR. KATZ: So welcome everyone to the meeting. For everyone listening on the phone too, the materials for the meeting today, for people in the room -- I don't see any public members yet, the materials are outside on the table.

For people on the line, the materials are on the Internet, on the NIOSH website, under the Board section for Meetings, today's date. And you'll find -- you should find all of the presentations that are being given today there for your perusal.

And there is also Live Meeting. You can -- so you can follow along while people are giving presentations on Live Meeting. And that link for Live Meeting is on the agenda,

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which is on the NIOSH website.

Roll call. We have no topics for which there are conflicts, so I'm not going to address conflicts for Board Members. So we're just going to run through roll call. And let's just go alphabetically from the top. There are a few Members that -- we're having feedback here, I think -- who I know are going to be absent.

(Roll call.)

MR. KATZ: Very good. Okay. And a few other things just to note, there's a public comment session that begins at 4:30 today, 4:30 to 5:30.

So people on the line, we don't have members of the public in the room right now, but people on the line, we will be taking people in the room first, addressing Santa Susana, but then we'll get to you folks on the line.

And we have a number of people in the public who have already signed up, by send --

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sent me emails, but you don't -- the rest of you don't need to send emails or what have you. We'll get to you after we finish with people in the room.

And then just let me note, for everyone on the line, please mute your phone, except when you're addressing the group. And if you don't have a mute button, press *6 to mute your phone. Press *6 again to take your phone off of mute. But please keep your phones muted while you're just listening. Thank you. Dr. Melius, this is your meeting.

CHAIRMAN MELIUS: Okay. Thank you, Ted. And we'll start, as usual, with a NIOSH update. Stu Hinnefeld.

MR. HINNEFELD: Okay. Now we'll try it. Okay. Thank you, Dr. Melius. And I'm here for my normal program update. Okay, good.

I always -- I try to start with program news on these updates, and sometimes I don't think of very much news, probably because it's

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not news to me, because it happens to me every day. But since our last meeting, we have mainly outreach activities to talk about. We've done a number of them, either -- well, really in conjunction, mostly in conjunction with the other agencies.

The first one, though, was one that we did with our outreach contractor, ATL, and that is the Dose Reconstruction and Special Exposure Cohort workshop that we offer once a year -- it's been in September the last couple of years, where we invite interested parties, a few advocates, mainly a lot of labor representatives, some retiree organizations, to -- representatives of those folks to Cincinnati, and we conduct a two-day workshop about the program, dose reconstruction, various aspects of it.

So certain members of our staff present certain sections or certain topics. Staff from ATL present other topics, and then

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there's some working sessions for people to become more familiar with our website and where to find information.

The idea behind this is that these people then can be resources for their constituencies back at home, and can be sources of information for those folks back at the facilities.

So it went pretty well. ATL does a nice job of setting that up, and we've -- typically get very positive comments. They do an attendee assessment, essentially a course assessment thing at the end.

Pretty consistently, we get pretty high marks about the usefulness, people, you know, really happy to be there and they thought the information was presented well and they enjoyed it.

So we did go through that in September. And then there were several Joint Outreach Task Group meetings in the months

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since the last Board meeting, in Richland and Spokane -- that was one trip for the two locations, Rochester and in Paducah, just a -- I guess it's about three weeks ago now.

So those are most -- that's most of the news that I thought of to put on the slide. Getting into the claim, or the statistics, I won't get into -- spend a whole lot of time on these. They're on the handouts, and I think they were probably in information you received.

The claims are, continue to go up at about -- we continue to get about 200 a month, new -- maybe slightly less than 200 a month of new claims. We have a kind of a constant flow of reworked claims.

Typically when people get an additional cancer, they're sent back for rework. So in combination of the new and reworks, we're probably around 250 a month that we get.

And we continue to send cases back.

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These are the various categories. The 1,200 cases still with us, I believe, a number of those are cases where the initial draft is in the hands of the claimants, and we're waiting for the close, either doing a close-out interview or going to get the OCAS-1 form back.

So it's really, the number we have is somewhere around, well 9 -- it looks like about 970 based on this accounting here.

So those are -- that's how the game's -- you know, we've -- that's kind of been our sort of inbox for a while now. We're not -- we have certainly timeliness objectives, in terms of getting cases done, I think 90 percent of the cases within five months of getting all the information we need to do it.

And so we're not making -- we don't really have an objective to reduce the number in the inbox. We just want to make sure we're timely in the response to the claims, as timely as we can be.

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Here is the breakdown of Probability of Causation, how the -- these are ones done from DRs. This is just the DR statistic. It doesn't take into account cases that were compensated through the SEC process.

As I recall, that's either 28 or 29 percent. I did the arithmetic and -- but I didn't write it down. Or I don't -- I wrote it down, but not with something I have with me. I think it's like 28 or 29 percent have been successful through dose reconstruction.

Again, a lot of the -- a number of the cancers that tend to be successful with, through dose reconstruction, like lung cancer in particular is an SEC cancer, and so as you add additional SEC Classes, you don't have those, you know, those don't come to dose reconstruction so you don't get those successful dose reconstructions when they're paid through the SEC.

This is our chart, our long-term chart

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of submittals versus production. It doesn't change much. The last data point really shouldn't be on there. That's a partial quarter.

These are quarterly data, and there is -- there was no precipitous drop in claims recently. That's just a partial quarter, and we were close enough to the meeting and getting the meeting materials ready that it was a little hard to re-run.

So we said, well what the heck, I'll just explain it. That's a, that's only a partial quarter. There's no, there was no precipitous drop in claims recently.

Here's status of the first 5,000 claims and how they break out. Nothing's much different there. This slide caught my attention because -- and if you look at the claims at NIOSH, in the first 10,000, there are 20 DRs in process, and three are initials.

And that bothered me a little bit,

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because I knew that we had, a while ago, we had a number of claims that were initial even though they had low numbers because they were CLL claims, that CLL originally referred to us. And so we gave them a claim number, even though DOL shouldn't have referred them to us, because CLL wasn't -- you know, chronic lymphocytic leukemia wasn't covered.

So, and then when the regulation changed, we -- the DOL returned those to us. And so they came back to us, and they still had their low numbers. So I was pretty confident, for a while, that we, when we'd have these low numbered initial cases, it was because they were a CLL case.

And I saw this slide and I said, you know, that was quite a while ago. That seems like we shouldn't have those. So I looked those up. Excuse me a minute.

Two of the cases were pulled before being completed. Either the claimant opted

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out of the process or died, unfortunately, before the claim was submitted. And it was closed for years, seven, eight, nine years, until a survivor either was identified or decided to pursue the claim.

And so it was reinitiated then, with the survivor's action, and that happened just very recently. And so those claims are now active. They never had a final dose reconstruction done. And so it's still in the initial category, but they were just recently renewed and reinstated because the survivor picked up the claim.

The other -- the third one was a CLL case that was activated with the rest of the CLL cases, and then it, because it was at a site where -- well it was the Fernald site. It was a claim from the Fernald site.

The Fernald site, we had SEC decision debate. We -- typically we don't pend claims when we have an SEC claim, you know, petition

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in front of us. But when we get close to the -- when we think we're close to the end, we'll pend the cases, and so that we're just going to finish up this SEC, we're going to finish up all the DR, or the TBD issues, and so we'll pend the claim so we just do them once.

Well, with Fernald, there's still some Site Profile issues still hanging on, and it was getting longer and longer, and we said, the heck with it. Let's do them the way we would do them now. When we finish the DR issues, if we have to, we'll do a Program Evaluation Report and we'll do them, rather than just have them sitting there waiting then.

So that's what the third one is, an initial one. So, I am -- I did -- at least for this meeting, I did pay attention to that slide.

Okay. These are our DOE response numbers. I do not have the comparison to last month but I could probably find them if I need to. These really look pretty good to me. We

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don't have any sites, I don't think, that are particularly problematic. And the 256 is, I think, a really pretty low number, considering how many claims we get all the time.

And our SEC summary table, I won't move too far into this, because LaVon has a presentation all about SECs at some point today or tonight. So we'll -- I'll let him go through that, but as -- while at one time, let's see, yes, while at one time the breakdown between 83s and -- 13s and 83.14s was pretty even.

That was the time when we were finishing our research on the various AWE facilities where we didn't have very many claims. We went through that and we ended up getting, adding a lot of SECs for that. And so we kind of caught up with .13s.

Well, we're pretty much through that process now. So the petitions from now on will probably be, for the most part, 83.13 petitions. So, I think that was it. Yes, I

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guess it's not going to take me out of it, but I can get out of it over there.

So, are there any questions?

CHAIRMAN MELIUS: Any questions for Stu? We'll let LaVon explain some of the --

MR. HINNEFELD: Yes, the --

CHAIRMAN MELIUS: -- SEC issues. Dave?

MEMBER KOTELCHUCK: I was just curious. I mean, you -- for administrative reasons you separate out the DR and SEC cases.

MR. KATZ: David, would you speak right into your mic, so that --

MEMBER KOTELCHUCK: Right. Is the mic on? Okay. For administrative reasons, you separate SEC and DR cases, but I've tried to look at the numbers and see, of all the cases that are submitted, of all the individuals submitting claims, whether they end up in DR or SEC, if they are accepted by DOL as having been employed over 250 days, that is that they are

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potential, what fraction of them are, in fact, compensated?

MR. HINNEFELD: Well, there might be some statistics on the DOL website that might answer that. I'm not familiar with them. The information that we have, I think I have a slide back here, you can see in the second major side where you have all the sub-bullets, there are some 3,351 cases for SEC Cohort, Special Exposure Cohort.

Those are claims that were referred to us by DOL. And while the claims were with us, an SEC was added that included, probably, those cases. I say probably because when DOL first refers the case to us we'll have a particular cancer diagnosis on it. And we will pull it based on the cancer diagnosis that they had when they sent it to us.

It has happened that when they go to final adjudication they take another look at the case and they have a different diagnosis.

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And so it may, essentially, fall off the SEC. So that is a pretty good approximation. So if you would add that number, the 3,351 to -- oh, I'm sorry, to the 10,073 --

MEMBER KOTELCHUCK: Oh, okay.

MR. HINNEFELD: -- you would have an approximation of -- but then you've got to add the same -- got to add it to the 35,667 also.

MEMBER KOTELCHUCK: Right.

MR. HINNEFELD: So you'd have an approximation of the fraction, the ones that got to us. Now, once an SEC Class is added, we never see any more claims from that site because the Department -- and it's an SEC cancer, the Department of Labor just pays them.

MEMBER KOTELCHUCK: I see.

MR. HINNEFELD: So the best information about how they're -- I think would be on the DOL website. I think they have some statistics about site-specific outcomes there.

MEMBER KOTELCHUCK: Oh, very good.

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I will do that. I will check that.

MR. HINNEFELD: Okay, my handy assistant Kato has just sent -- that was probably inappropriate, wasn't it? In Part B, according to the DOL -- let me see what I'm looking at, there have been 92,609 cases filed. And it looks like there are 42,000 cases that were paid. So that's a little less than 50 percent.

MEMBER KOTELCHUCK: Well, it's close to 50 percent, just --

MR. HINNEFELD: Yes. And, now that -- well Part B, though includes silicosis and --

MEMBER KOTELCHUCK: Beryllium.

MR. HINNEFELD: -- berylliosis.

MEMBER KOTELCHUCK: Right.

MR. HINNEFELD: Beryllium disease. So --

MEMBER KOTELCHUCK: Nevertheless, it's much larger than the number you had, than

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the DR number.

MR. HINNEFELD: It's much larger than the 28 percent that is done through dose reconstruction, yes.

MEMBER KOTELCHUCK: Okay, thank you.

CHAIRMAN MELIUS: Yes, Paul?

MEMBER ZIEMER: Stu, my question is on the workshop that you held, and you described the types of individuals who participated. Can you give us an idea of the actual numbers of people who participated in the --

MR. HINNEFELD: It was about 30.

MEMBER ZIEMER: About 30?

MR. HINNEFELD: Yes. Slightly less, I think.

MEMBER ZIEMER: And is that covered by your budget, in terms of their travel and so on, or do --

MR. HINNEFELD: Yes, yes.

MEMBER ZIEMER: Okay.

MR. HINNEFELD: Yes. We pay their

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travel, and for certain attendees, we provide wage replacement.

CHAIRMAN MELIUS: Any other questions for Stu? Any of the Board Members on the phone wish to ask questions?

MEMBER FIELD: No, not at this time. Bill.

CHAIRMAN MELIUS: Okay. Yes, Henry has a question though, here.

MEMBER ANDERSON: Yes. Stu, you have here that you've completed 131 of the SEC, and ten of them are with the Board. Are there any that you've completed that aren't with the Board?

MR. HINNEFELD: No. Anything that we've completed has either had action taken --

MEMBER ANDERSON: Yes, okay.

MR. HINNEFELD: -- or is with the Board. There are two that we are working on --

MEMBER ANDERSON: Yes, right. Okay.

MR. HINNEFELD: -- that we have not

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presented to the Board yet, I think. Bomber will give the numbers later on --

MEMBER ANDERSON: Okay, yes.

MR. HINNEFELD: -- but there are some we are working on now that we've not presented to the Board, but --

MEMBER ANDERSON: Right.

MR. HINNEFELD: -- everything where we've finished an Evaluation Report, it's either in the Board or it's been -- it's with the Board or it's been dispositioned by the Board.

MEMBER ANDERSON: Okay. Thank you.

CHAIRMAN MELIUS: We'll reveal that in greater detail some time between now and midnight tonight. Okay. No further questions? Okay, thank you, Stu. We'll work on coming up with some more to that.

Okay. We'll now get an update from the Department of Labor. Frank Crawford.

MR. CRAWFORD: Good morning. I'm

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Frank Crawford, a health physicist with the Department of Labor. And let's see if we can get -- yes. Sorry.

Just parenthetically, it's hard to tease out the exact effect of SECs, in answer to your question. I have some slides here that give you a slightly different view of the thing, but between the CBD cases and the silicosis cases, there are so many factors floating around -- I'm sorry, that it's difficult to say exactly how many cases have been paid because of the existence of an SEC alone.

MEMBER KOTELCHUCK: Yes, I know. I know. And often people ask, well what fraction of the cases submitted are compensated? And I never have been able to say, other than the DR, which is about 30 percent, right? I think it's about 30 percent.

MR. CRAWFORD: Yes.

MEMBER KOTELCHUCK: Yes.

MR. CRAWFORD: Yes. Also, before we

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get started, you'll notice there's a discrepancy between the numbers that I am presenting and the numbers that Stu presents. There are various reasons for that. Part, it is different reporting periods, and part is definitional, in that we have a different view because Stu never sees SEC claims that are simply disposed of by DOL alone. All right.

Okay, we'll go to the first slide. As Ted mentioned, this is all on the website, so I'm going to hurry through some of the slides, and there are also slides that we will not see in the presentation but are generally informational, about what kinds of claims are permitted under Parts B and E and so forth, who are the survivors under both cases. But there's no point in presenting that here.

By our count, then, that is DOL, we have about 175,000 cases filed, and almost 11 billion in total compensation paid to date. This is where the numbers start differing a

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little.

We show that 43,000 cases, approximately, have been referred to NIOSH for dose reconstruction, and approximately 41,000 have come back, leaving NIOSH with about 2,000 cases. As Stu has told you, really, it's probably 1200 cases, but we'll have to live with those discrepancies.

We show a slightly higher fraction approved with DRs, just a little bit over a third, and I don't know how to account for that except perhaps, again, reporting periods. And also, we're only talking about final decisions, which is a distinction, perhaps, that may not be in Stu's statistics. I don't know.

So we have 35,000 cases returned with a DR, and 28,000 now have a final decision as well, and that's where we get, under that, our 35 percent approval rate. This pie chart is maybe a little hard to read, but I'm sure on the website it'll be much clearer.

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The only thing I'd like to point out here is that the other category probably does include silicosis and CBD, and it's -- there may be other kinds of failed claims, where they weren't federal workers as it turned out, or didn't qualify for some other reason, I'm not sure. And that's a little bit opaque for us.

In terms of SEC cases, we see that it's almost 50/50 between cases not referred to NIOSH and cases referred to NIOSH. It's 12 percent versus 14. So with that, we have some evidence of what's going on, but again, it's very hard to tease out exact numbers. Here we go.

In this slide, we show slightly over 50 percent, what you might call a total approval rate, that is, with SEC cases taken into account with simply dose reconstruction cases.

Now, in this next slide, we see that the accepted SEC cases far outnumber the accepted DR cases by more than 2 to 1. That's

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21,700 versus about 9,200 DR cases.

There's also one other interesting stat here, which is the third bullet point, cases accepted based on SEC status, and with a PoC greater than 50 percent. That's a relatively small number, 700 cases.

And remember, on a previous slide, we saw that 12 percent of cases were referred to NIOSH and had an SEC. So of those cases, which must be a substantial number, only 700 returned with a positive result, you might say.

Hard to interpret, but my best guess is that SECs sweep up everybody at a site, of course, I mean typically -- not all sites, but typically, and many of those people would not have had significant exposure.

So if they're accepted first by an SEC and then ask for medical benefits, and therefore a dose reconstruction, they're less likely to be approved than somebody who has gone the other way, through the dose reconstruction

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process and has had significant exposure. So I think that's what's going on there, but --

MEMBER RICHARDSON: I'm sorry. I'm a little confused.

MR. CRAWFORD: Right.

MEMBER RICHARDSON: You're saying that half the claimants who are covered under an SEC are nonetheless having a dose reconstruction by NIOSH?

MR. CRAWFORD: Yes, but that could be because they had the dose reconstruction first and then the SEC was approved second, or it could be because they're SEC Class members and they requested a dose reconstruction in order to get medical benefits. Stu, you can help me out.

MR. HINNEFELD: Just one other point, the medical benefits is for a cancer that's not an SEC cancer. So in other words, the claimant would have more than one cancer. One would be an SEC cancer, and that would put them into the

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SEC and they'd be compensated through SEC.

With another non-SEC cancer, their successful claim for the SEC cancer will not pay for medical benefits for that other cancer. So they have to have a successful dose reconstruction to have medical benefits paid for the non-SEC cancer.

MEMBER RICHARDSON: So in this case, that number refers to the Probability of Causation under a calculation where the target organ may not have been the primary -- may not have been an SEC cancer?

MR. HINNEFELD: Correct. It would not have been an SEC cancer.

MR. CRAWFORD: But both are evaluated for the PoC. In other words, if a person had a lung cancer and a prostate cancer, they qualify for the SEC solely on the lung cancer, of course. But if they ask for medical benefits for the prostate cancer, then when the case goes back to NIOSH for a DR, both cancers

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are evaluated de novo, as if there had been no SEC.

MEMBER RICHARDSON: I'm still confused why you would do that. Isn't that just a lot of time spent by NIOSH to do a dose reconstruction for something which is going to be compensated regardless?

MR. CRAWFORD: Well compensated monetarily, but if the prostate cancer, for instance, was treated at great expense --

MEMBER RICHARDSON: No, but the lung cancer.

MR. CRAWFORD: Oh, the lung cancer is covered by the SEC, and that's --

MEMBER RICHARDSON: Yes.

MR. CRAWFORD: Yes.

MEMBER RICHARDSON: But you're saying that the calculation is done, nonetheless?

MR. CRAWFORD: Using both cancers to be -- I mean, it's only fair, essentially. If

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there were no SEC, that person would be evaluated on the basis of both cancers.

MR. KATZ: The reason for that is because multiple cancers, there's a statistical treatment that's given -- it's advantageous, if you have multiple cancers, to have all those considered when they do the PoC.

So that's why they reconstruct the doses for all the cancers, including the one that's covered by the SEC. Because for each primary cancer, there's a statistical treatment that combines those in giving you a total PoC.

MEMBER RICHARDSON: And that's going to help them with medical compensation?

MR. KATZ: That'll help them with the cancer that's not covered.

MEMBER RICHARDSON: For the medical compensation of the --

MR. KATZ: Exactly. Exactly.

MEMBER RICHARDSON: -- non-covered

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cancer.

MR. KATZ: Exactly. So that's just beneficial for them.

MR. CRAWFORD: Then I think we can leave this slide. No surprises here. Our top four work sites still generating new Part B cases are Savannah River, Hanford, Y-12 and K-25.

This slide, which is perhaps a little difficult to read, but shows basically two things of interest, I think. One is that DOE site cases are slowly declining, in general, and that AWE cases are slowly increasing.

Part of that is an artifact, I think, because we started with the DOE sites, and it took a long time to gather in all the AWE site information and act upon it.

Stu has already mentioned outreach events, which DOL, of course, participates in and sponsors, through the Joint Outreach Task Group. This slide is rather small, but -- has

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small text, but these are some of our recent meetings. I don't think there's any point in going through them unless a Board Member cares to ask. They're all on the website. And as you can see, there are quite a few meetings.

And we're now into FY15 of course, and here's the combined slide for both 14 and 15. We had three meetings in October alone. And our next outreach meetings, we see one in Los Alamos. Well, one, but it's on three dates in November. And the IBEW Union Hall meeting in Albuquerque on November 13th and 20th.

Now on the Santa Susana site, which is being discussed later today, just as some background information, we already have combined B and E claims -- or cases, rather, 1,000, approximately, of which NIOSH has already completed a DR of 240 of them.

We have final decisions on 500 such cases, which is an interesting thing, but I'm not sure of the discrepancy between those two

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numbers. But as it -- okay, earlier SECs, right. And then we have 200 Part B approvals, and 200 Part E approvals.

And that's the last slide, I think, that needs to presented. The rest is, as I said, general information about claim-filing and qualifications. Any questions?

CHAIRMAN MELIUS: Any questions for Frank? Anybody on the phone have questions? Okay. Thank you. We'll now get an update from Department of Energy. I'm not sure -- just you, Greg, or how are we doing this?

MR. LEWIS: It's got to be me.

CHAIRMAN MELIUS: Oh, okay.

MR. LEWIS: You're stuck with me.

CHAIRMAN MELIUS: Put him on the spot, huh?

MR. LEWIS: Yes. All right, good morning, everyone. I'm Greg Lewis with the Department of Energy. And of course, Pat Worthington and Isaf Al-Nabulsi are also here

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with me. I guess while Stu is getting the slides up -- I was going to -- oh, I guess there again. Thank you.

All right. So the DOE mission is to work on behalf of program claimants to ensure that all available worker and facility records and data are provided to DOL, NIOSH and the Board. So basically we provide records. That's our role in the program.

We do that in primarily three ways. The first is with respect to individual records request. So we respond to employment verification requests from the Department of Labor, we -- and then I guess the second is to respond to large-scale records requests, like the Special Exposure Cohort projects. And then the third is to research covered facilities, particularly with respect to AWEs, are primarily where we do the research.

So the most important, you know, front lines that we have in terms of responding to

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these records requests are, you know, with the POCs. You know, some of you all who took the tour at the ETEC facility yesterday yet Phil Rutherford who was our primary POC.

He's still involved, but the contract, of course, has transferred over to North Wind, so those folks are going to be stepping up and doing the new remediation responses, where Phil and his team are still going to be handling, you know, the legacy workers, so the Rocketdyne, the Atomics International, those folks, they're going to still be handling.

So as you saw yesterday, Phil has been on-site for 25 years. So, you know, although the site goes back to the 50s, you know, he's been there for, not the whole the time but, you know, 25 years. He's been there quite a while. He understands the site. He knows the history, you know, as well as anyone does.

He knows what was done, where it was

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done, what these folks might have been exposed to, and where the records are, most importantly. So he's -- him and his team are the ones that pull those responses together.

So with the individual records requests, we do about 16,000 per year. As Chris Crawford alluded to, it has gone down slightly over recent years, but it's still roughly about 16,000. And it's split between the employment verifications, the NIOSH requests and the Department of Labor document acquisition requests, or DARs.

And as you know, you know, claimants often worked at multiple sites. They worked in multiple departments, divisions, held multiple job titles, particularly if they were career employees over 30 years. They might have been in a number of different locations around the site, job titles, things like that.

So often we have to go to a number of different locations to pull together those

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records, both -- you know, particularly for historical workers, we might have microfilm, microfiche. We might have to go to multiple databases, you know, because on some of these sites as different contractors came in, they brought their own systems, their own databases, their own ways of doing things.

So, you know, at any given site, we might have to go to 20 to 30 different locations to pull together an employee's records. You know, and of course, these would be for the long-term career employees.

You know, again, we might have to go to 20 to 30 places, of many different types of records. You know, and unfortunately, this is not always true for the subcontractors. For the subcontractors, we check everywhere that we can but, you know, for a short-term construction contractor, you know, we might not have anything. So we try to be as creative as possible finding those records.

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So we will look at gate logs when we have them, sign-in sheets, badging records. If they were on-site and went to medical, or happened to be badged for dosimetry, we'll check those type of locations. But often times we won't have a formal employee, you know, human resources employment record for those folks, so we have to be as creative as we can.

So for the large-scale records research projects, you know, those are incredibly time consuming, as you know, and can be very difficult. They can take years. They can cost us quite a bit of money. You know, and we work with you all and with NIOSH and SC&A to try to make sure that our resources are in place to be able to support these records research efforts.

Currently, we're -- these are some of the sites that we're working on, although we're getting requests for many more, whether it be for an SEC project or for a Site Profile update,

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you know.

And those listed there, some are, you know, just starting. Most are kind of in the tail end, or we're kind of doing the final stage of the research but we are supporting NIOSH and the contractors on those sites.

Then of course, I already mentioned that we provide site tours when requested. So yesterday we took Members of the Board, NIOSH and the contractors over to the Santa Susana field lab up by the Simi Valley and drove them around the site, took them into quite a few buildings, and for more of the buildings, showed where they used to be and what used to happen.

I think the numbers, there used to be 200 and something buildings there, and I think they mentioned there's somewhere around 20 buildings there that used to do DOE work.

So there's very little left compared to what they used to do, but we were able to show

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the group the layout, how the site is configured, the difference between Area IV, which is the facility that's covered by this program, and then Areas I, II and III, which were NASA and Air Force sites, which are not covered.

So we were kind of able to show the layout, some of the buildings, what different processes were done and what's there now. So hopefully it was helpful to you all.

And then of course, document reviews, due to, you know, security and classification concerns, there are, you know, certain sets of documents that we have to review.

We've committed to do this. We have a security plan that kind of lays out what we do and how we do it. The average turnaround time for documents reviewed by headquarters is about eight working days.

It's not always that quick out at the sites because they're not always able to juggle

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their resources and their staff to accommodate the reviews, and also because the headquarters reviews are typically NIOSH-drafted reports or Board-drafted reports and they're shorter, whereas out at the sites we could be talking about hundreds of documents that are thousands of pages so it can be quite a workload for the sites.

We -- you know, when we get a large-scale request, we will try to work with, you know, the requester or NIOSH, the Board, whoever it is, to determine at least a path forward to completion, what the priorities are, what we should work on first.

And we'll provide a time frame. And if that time frame is not workable for the Board or NIOSH, we can bring in assistance from headquarters sometimes, or try to work out alternate pathways.

And in fact, with -- recently with Savannah River, there was a very large request

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for declassification, and given the staff and resources at Savannah River, they were going to struggle to do that in the time frame that was needed on your end, so we've sent a large group of those documents up to DOE headquarters in Germantown.

And so folks can come in and work on them there. So as they're being reviewed and declassified, there will be a collection at headquarters that can be used to help draft the reports. So things like that, we do try to come up with solutions that meet your all's needs.

And then facility research, you know, and that's kind of the smallest of our responsibilities in terms of workload, but it is extremely important, particularly with respect to the AWEs.

When questions are raised, and often those questions can come from NIOSH research into either a Site Profile or SEC, they might, you know, come across documents that suggest

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the facility should be covered for an additional time period, or they can't find evidence that work was done during some parts of the covered time period. We'll work together with DOL to pull together documents and do some research into those facilities.

And then I just want to mention the SERT. I think I've mentioned it before, but again, this was our big accomplishment last year, bringing this on line. SERT is the Secure Electronic Records Transfer System.

It's an electronic system that DOL, NIOSH and DOE are all a part of. It allows us to send requests for documents, and then, you know, upload the responses and send them back instantaneously.

So it's two-factor authentication, which is basically a complicated way of saying it's the highest standard in terms of the protection of private information. I know that, you know, there's been many high-profile

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hacking incidents and data releases and things like that, so two-factor authentication is the, you know, is sort of the gold standard for protecting information.

So it allows us to quickly and efficiently send and receive information with these groups. It has cut down the time to respond by probably about ten days or so for each claim. And it also allows all of the different agencies to track and manage their responses and requests, you know, cohesively, so everyone has the same numbers.

And then both Chris and Stu have mentioned outreach. Again, we do participate in the Joint Outreach Task Group meetings. And we've had quite a few meetings this fall and we'll be having a few more in the winter and spring.

And then I also want to mention the other program that we work on at DOE that isn't directly tied to EEOICPA, but it, you know, I

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kind of consider it a sister program. It's our Former Worker Medical Screening Program.

We provide free screenings to all federal contractor and subcontractor workers at DOE sites. Again, that's not the AWEs, but at all DOE sites, you're eligible for a free screening. We work to provide you with that screening close to your house.

And we have specially trained occupational medical physicians that are familiar with the DOE sites, that know the hazards that you might have been exposed to and are able to custom tailor a screening to your particular situation. And I've got the website up on there for anyone who wants more information.

And then, of course, for this area, the two programs that would cover the Los Angeles area are our Supplemental Screening Program for all production workers and our Building Trades National Medical Screening

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Program for the construction workers.

And with that, questions?

CHAIRMAN MELIUS: Paul, go ahead.

MEMBER ZIEMER: This is not really a question, but I just wanted to highlight the tour that DOE hosted of the Santa Susana Field Lab yesterday. Excellent tour, and I think we owe Dr. Worthington and Greg and the staff a word of thanks for really an excellent tour, one of the best ones we've had.

MR. LEWIS: Thank you. And we know these tours are important, so any time -- you know, we're always happy to work with our sites to facilitate these tours for you.

MEMBER ZIEMER: And Isaf, too, is here. So include all of the DOE folks that are here.

CHAIRMAN MELIUS: Any other -- Brad, you don't have a -- usually you have something you want to pin Greg down for.

MR. LEWIS: Taking it easy on us.

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CHAIRMAN MELIUS: We're doing fine now. We do appreciate, both the tour -- I heard, as Paul said, rave reviews this morning while eating breakfast, from people that were on the tour, but also I think everything's been going well with the sites.

I think the -- at least my impression of it seems to be that we have a number of sort of special focus now. That list you put up, somehow I feel that I'm not sure we're really fading away in terms of the records requests from some of those sites, Savannah River and Idaho and --

MR. LEWIS: No, well they seem to be coming fast and furious.

CHAIRMAN MELIUS: -- Hanford to do things, get turned over. But I think, again, that's good. We need to get caught up on everything, so good. But we appreciate the assistance and cooperation and so forth with the, just that. Anybody else -- any of the

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Board Members on the phone have questions? Okay.

MR. LEWIS: Thank you.

CHAIRMAN MELIUS: Yes. We have a mellow Board today. Yes. It's the barbed wire surrounding us. Right. Oh I see, we're saving it all up for the last presentation here.

Okay. We'll now get an update from our Procedures Subcommittee, and their review activities, and particularly one Program Evaluation Report, Construction Trades Workers. So I'm not quite sure how this is going to work, but --

MEMBER MUNN: I'm not sure either.

CHAIRMAN MELIUS: Okay.

MEMBER MUNN: But all right. Thank you. You're all very familiar, I think, with this material. We've certainly talked at length, both here and in Procedures Subcommittee, with respect to the construction trade workers and how we view their dose

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reconstructions.

We start with the first slide, which is one you're quite familiar with. I don't think we need to go over this in great detail. This is just your update with respect to what the audit process for the DERs actually is.

It consists of five different subtasks, and the first of which is having our contractor evaluate NIOSH's assessment of what the issues are. They take a look at specific methods that NIOSH has used, and they take a look at the stated approach.

Generally we see those three subtasks in the first initial report, and Subtasks 4 and 5, which are fairly time-consuming, not unexpectedly, sometimes come afterward.

We started this process for the construction trade workers back in 2004. At that time, NIOSH brought to the fore the fact that there might be some construction trade workers at various DOE sites that hadn't been

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monitored but had been exposed.

At that time there was a considerable discussion with respect to who would be covered by the designation construction trade workers. We specifically included laborers and mechanics, masons, carpenters, electricians, painters, pipefitters, boiler-makers, millwrights, sheetmetal workers, iron workers, insulators. And that's just a partial list. That's not all-inclusive.

In order to make sure that we had the appropriate process in addressing these issues, we were very pleased to have NIOSH provide for us OTIB-52, their first OTIB with respect to the parameters that needed to be handled when we were going to look at construction trade worker issues.

That was issued on 2006, and that was the founding document which we have used since then in order to address these issues surrounding this particular group of workers.

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I think I went too far. No, I didn't. All right. At the time that this model was provided for us, PER-14 was issued to reevaluate the claims that had already been done at ten sites, where external coworker models had already been looked at.

Those are the ten sites; they are Hanford, PNNL, Kansas City, LANL, Pantex, Portsmouth, Savannah River, Weldon Spring and Oak Ridge Labs, Y-12.

Those were not the only sites, of course. There were four other sites for whom coworker studies had been published prior to the issuance of OTIB-52 in 2006. Those claims had already been reevaluated, however, under other PERs.

You see the sites: Paducah, PER-13, Rocky Flats, PER-21, Mallinckrodt, PER-15 and K-12, PER-11. So because those had already been evaluated by PERs, those were not included in the ten that were covered by PER-14.

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The timeline is fairly straightforward. I think we covered that reasonably well. In 2007 was when PER-14 was issued first, and it's been under evaluation of one sort or another since then. In 2012, SC&A had its draft review of the entire PER, and in July of that year their six findings were discussed at length, and eventually, just recently this year, all were resolved.

Our Subtask 1 issues, assessing the circumstances that necessitated the need for the PER to begin with. You'll recall that's the basis for Subtask 1 from our first slide.

During facility modifications, we might have had exposed construction trade workers who hadn't been monitored. The exposures might be different from other radiation workers, and the assignment of coworkers to unmonitored construction trade workers needed to be claimant-favorable.

The empirical data ratios were

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developed from both external and internal doses, by monitored workers to all monitored workers, using data from seven major DOE sites, which are listed there. The results were the basis for the OTIB-52 guidance.

Subtask 1 focused on both external dose, using -- deriving deep-dose coworker adjustment factors of 1.4 from the empirical data that was available. A shallow dose was bounded by the workers' doses, by the AM workers' doses, and the 95th percentile of coworker data could be used without having to apply an adjustment factor, for the shallow dose only.

In the internal dose, only the Hanford coworker intakes need be multiplied by a factor of 2. For all the other sites, the internal dose was going to be assessed using the same method that's applied to all other workers.

I apologize for these slides where we give you the finding information. You know, we

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always have the same process when we are presenting PER information to you.

We want you to be able to see the finding and the approximate solution -- and resolution to that finding at the same time, but if we put each one of these on a different slide, then I end up having 75 slides here, and I don't think you want that any more than I do.

So I'm going to have to ask you to bear with us with respect to the way we present these findings. It seems to have worked well in the past. If you don't find that amenable to your needs now, please let us know.

We're hoping that providing these slides to you in advance gives you an opportunity to read through this at your leisure, and making them available to the public makes it possible, we hope, for them to be able to address that in the same way.

But if you find this onerous for any reason, please let me know what your desires are

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with respect to presentation to you.

That being said, Subtask 1 findings, of which we have four shown here. One, two and three were conditional. Number 4 is a true finding. These have to do with the deep-dose adjustment factor of 1.4.

The inclusion of the construction trade workers with all monitored workers might obscure the dose differences, and a shallow dose adjustment factor may be required if NIOSH failed to adjust for the construction trade workers' shallow doses.

And DR guidance in OTIB-52 for internal dose says the internal dose should be determined using the same method as is used for all the other workers in the absence of internal monitoring data and coworker data. It's unclear what was meant by that recommendation.

So these are the types of things that we debate at considerable length in the Subcommittee proceedings. If you have any

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question about these that we can't answer for you, please do -- I refer you to the Subcommittee's transcripts, which give you the detailed information about the discussions that were had with regard to them.

A conditional finding, as the footnote indicates, it's just indicating that SC&A didn't have access to the original dose data, and would -- didn't know if the data that they had was all completely accurate. And it was established for efficiency purposes, so that we could have the issue in front of us, even though there was some question about whether it was really an issue or not.

CHAIRMAN MELIUS: Excuse me, Wanda.

MEMBER MUNN: Yes.

CHAIRMAN MELIUS: I think David Richardson had a question.

MEMBER MUNN: Yes, David?

MEMBER RICHARDSON: Wanda, if -- just help me understand the first Subtask 1, the

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problem was laid out that the construction trade workers might have been exposed but not monitored, and their exposures might have been different from monitored radiation workers.

MEMBER MUNN: Yes.

MEMBER RICHARDSON: And I thought it was useful, what -- you took one step towards that which was to say that there was some monitored construction trade workers, and you compared them to the monitored radiation workers.

MEMBER MUNN: Yes.

MEMBER RICHARDSON: But then it opens the question, are the unmonitored construction trade workers like the monitored construction trade workers? How did you answer that question?

MEMBER MUNN: Do we have one of our DR experts who had addressed this issue for us?

DR. NETON: We have the expert.

MEMBER MUNN: There he is.

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DR. NETON: I'm sorry. That wasn't done. That comparison was taken at the face value. If construction trade workers had a higher, on average, dose than the regular workers, the adjustment was applied without any correction at all, or any evaluation of what the status of the unmonitored workers actually was.

MEMBER RICHARDSON: Because that -- it's -- I mean, I -- to me, I mean, I've felt some kind of struggle with the same problem, and I think what you've done is extremely valuable.

It's -- the counter-argument that I've made in my head is that there are people who -- I guess part of this gets to the definition of a construction worker, there are people at many of these sites who hold jobs with titles like painter or pipefitter, who were monitored. And yet they may have been employees of the prime contractor, and they were monitored for that reason.

And then there were a lot of people who

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we often conceptualize as construction workers, who were employed as subcontractors doing construction work, and they were not monitored.

And whether somebody who has a job title of painter or pipefitter or so on, who worked for these subcontractors and falls into this large group of unmonitored workers who were doing the same sort of tasks and facing the same sort of occupational hazards as the monitored workers has been an open question in my mind.

DR. NETON: Yes. That's a really tough question. I think we're maybe going to get into that a little bit later when we deal with the coworker model and sufficient accuracy and how that all plays out. There's an implementation guide that we have in draft form that we're going to discuss at a later session this morning.

This TIB-52 was our very, very early

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attempt -- I think this document was issued in 2006, of trying to address these types of issues that you're bringing up. And I admit that it's somewhat -- crude's probably not the right word but, you know --

MEMBER RICHARDSON: But it's --

DR. NETON: -- used the data that we had available.

MEMBER RICHARDSON: So it's leveraging the assumption that the construction workers who were monitored are a simple random sample of all construction workers --

DR. NETON: Right.

MEMBER RICHARDSON: -- and that you can make the extrapolation from these data to the unmonitored --

DR. NETON: Yes.

MEMBER RICHARDSON: I guess that's the only thing. It's just to be explicit on that.

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DR. NETON: Yes, exactly. Yes.

CHAIRMAN MELIUS: Can I just add -- I think we're going to be coming back to this issue, as Jim described in his presentation, later today, because I think we're sort of re-looking at the whole coworker issue.

And plus, I think we better understand, maybe, the -- how the variability between sites and these issues and also the lack of good information on which construction worker fell into which category, because they all come out of the same union, they often could have been an employee of the prime contractor and then also, before or after that worked for other subcontractors.

I mean, it's just a very complicated picture to do, and I think we're going to have to look at what information's available and what's the best way to do that.

And I suspect it's going to be on a site by site basis, but I think we're going to

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have to sort of -- I think if we can come to grips with the, sort of the coworker model issue and what the criteria ought to be for evaluating that, I think we'll make progress on this.

Wanda and I went back and forth a little bit on what would -- what to present today, in terms of this, and I think the focus is going to be, you know, what I'm presenting is, there were a number of other specific findings as part of this review, that I think are relevant, aside from the coworker issue, which we'll be coming back to.

MEMBER MUNN: Subtask 2 was assessing methods and corrective actions. The OTIB requires multiplying external coworker dose by 1.4 for the construction trade workers and at Hanford, multiplying by 2. But the claims at other sites where the coworker studies externally were issued prior to 2006 had to be reevaluated.

Identifying all the workers that had

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been exposed as a member of the construction trades, NIOSH went through NOCTS and all the original DR reports. They used a 31 word key search, and they identified 977 claims that might be potentially affected.

They reviewed the list of sites when they established the coworker models, and used the key word list, determining that their screening methods were going to be adequately inclusive and complete.

SC&A didn't have any findings under our Subtask 2 review, so we'll take a look at Subtask 3, evaluating the approach for identifying the number of DRs that were going to require reevaluation.

To check to see if the 977 potentially affected claimants were going to need a reworked DR, NIOSH had applied the screening criteria of confirming that a claim was a construction trade worker, because the key word search doesn't always do that appropriately, to

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verify that the external coworker dose, or in the Hanford case, the internal dose, was assigned in the original dose reconstruction. To screen the claims based on the ability to raise a PoC that was equal or greater than 45 percent, to ensure that 30 IREPs were performed, and that would automatically be triggered by an original PoC of 36.8 or 29.0 from Hanford, any claims with PoCs less than the trigger value, to determine whether any other PERs might increase that dose.

So under Subtask 3, we had two findings, one of which was conditional. The first of those findings, which was Number 5 for these purposes -- remember, we had four under Subtask 1, Number 5 was the assertion that the PER was incomplete and that the extent of the screening and evaluation of the universe of those 977 claims was not fully discussed in the PER.

So they asked -- indicated they didn't

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feel NIOSH had identified the actual number that were eligible for PER dose adjustment factors. We did resolve that. We looked at it closely, and the criteria that would -- they'd used to request, that NIOSH would use to request, was shown there with the 977 totals, and how those were broken down.

It was acceptable with the explanation that was given. And the conditional, which we had indicated was Number 6, would -- may be highly restrictive in addressing the problems of these unmonitored workers and the uncertainty of the fate of the claims that had been adjudicated before the issuance of a coworker model.

I read that badly, but you recognize, I trust, what the conditional finding was concerned with. It's one of the issues that we, again, discussed at considerable length but were able to resolve satisfactorily.

Subtask 4 gets to be the sticky wicket

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where you get into real audits. Referencing a finding that we discussed earlier, Finding 5, in respect to the possible, potential failure to identify that adequate number of claims out of the 977, it was determined that regardless of what the number was, SC&A felt that they should have one case from each one of the ten sites that had been impacted by the PER.

And again, those sites are listed there. They're the same, I believe, as the ones you saw listed in Subtask 1.

Timeline for this crucial Subtask 4 began in 2012 when SC&A was asked to review one case from each of those 10. In addition to that, we also asked them to evaluate the site TBDs and workbooks that were applicable to what we were doing here, to make sure that they had been properly updated and that they fit the recommendations for construction trade workers.

So during their review, the

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contractor determined that there were no reworked cases at four of the ten sites, and so for those ten -- for those four sites, Kansas City, Pantex, PNNL and Weldon Spring, they were going to need to be limited to just verification that the TBDs and workbooks had been updated. They didn't actually have cases to look at.

In 2013 we received SC&A's draft of their subtask for review, and later that year, we had, at Subcommittee meetings, discussed their findings and were able to resolve all of the findings from them.

Here is Subtask 4's review of the sample sets, the DRs that were looked at by the PER. Out of the 977, as you can see in the first table there, the selection criteria that were applied, the first of those items was NIOSH requesting that the case not be returned for a new DR. There were 620 of those.

The cases that were requested to be returned based on some other PER other than 14

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that we were working with, there were 221 such cases out of those 977. The cases that were requested to be returned for a new reconstruction were 52 in number, and there were 84 cases that had been returned to NIOSH prior to completing the PER evaluations.

Underneath, the selection criteria for the site are listed for you for each of those ten sites, so that you get the breakdown two different directions, if you read the criteria and the breakdown shown by site.

The findings that we had, Findings 7, 8, all the way to 21, but because of the number of sites that were involved, many of these findings were applicable to more than one site, and so some of them were grouped together. We've done that grouping as we go through here in this presentation, and you'll see them.

Finding Number 7 -- and remember, we're under Subtask 4 here, this is the actual audit process that we're looking at, SC&A found

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many of the cases identified as requiring rework didn't meet all the requirements of the selection criteria.

NIOSH indicated they'd reviewed all the potential cases of less than 50 percent to determine if they were affected by another PER. SC&A, in Finding 8, noted that some of the cases had been returned as a result of this PER, but those cases were not revised.

And NIOSH indicated that not all cases had been returned by Labor, and since some of those are contained in an SEC, or the claimant has died and there's no survivor. But each case had to be individually verified in order to be included in the cases that were going to be -- come forward for review for the PER.

Subtask 4, case reviews, involved an audit of six reworked cases from -- one each from Savannah River, X-10, Portsmouth, LANL, Hanford and Y-12.

That review focused just on the doses

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that were impacted by this PER, and they were concerned solely with assessing the accuracy and correction -- correctness of the coworker external doses. For Hanford, both coworker external and internal doses had been evaluated.

Continuing with the case review findings, this next finding, as you see, is a group of actually four findings lumped together. As I indicated to you earlier, many of these findings were repeated because the same finding was applicable to more than one case, but we lumped them all together when we were looking at them.

This one has to do with the 1.4 adjustment factor being applied to the measured coworker data at each site. And after discussing them and looking at them at considerable length, the contractor and NIOSH agreed that we had adequate empirical evidence to indicate that the 1.4 adjustment factor had been appropriately applied, so this finding

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resolved.

Finding Number 12 had to do with whether NIOSH is planning to revisit the one returned case for a construction trade worker coworker dose at LANL. And as it turned out, DOL did not return that case to NIOSH, so -- because the worker had qualified under an SEC.

Finding Number 13 had to do with the correction factor not being applied to a LANL coworker dose, and it turned out that in this case, the worker had a job title on the list, but, after looking at the CATI looking pretty closely, it was shown that the claimant actually was an in-house employee and not a construction trade worker.

Finding Number 14 had to do with application of the construction dose factor for -- dosimeter correction factor in coworker dose, and there was agreement that the dose correction factor of 1.244 hadn't been applied to an unmonitored photon dose.

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The correction factor was one during this period and wouldn't impact the dose. And we had a file indicating that the impact of the finding on the case outcome didn't change the level of compensation, so that was resolved.

And Finding Number 15 was another dosimetry uncertainty, it hadn't been applied to a Y-12 coworker. And NIOSH didn't do that. Their explanation was, the value would be entered into IREP as a mean of the normal distribution with a 30 percent uncertainty. So the TBD was re-evaluated by the contractor, and they recommended the finding be closed. The Subcommittee agreed.

Finding Number 17, again, a construction trade worker correction adjustment factor, failure to do that to an unmonitored internal dose at Hanford. And that was adequately explained with the employment in 1944, intakes being based on air monitoring.

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And when the case was reassessed by the contractor, the technical documentation, and recommended that -- they recommended the case be closed. We agreed it was appropriately resolved.

Finding Number 18, the contractor felt that there didn't appear to be any Hanford-specific technical guidance documents that required implementing OTIB-52 for internal coworker doses. But NIOSH indicated that the OTIB-52 requirements were built into the reconstruction tool, which was used by all the dose reconstructors. And that was found to be the case, so we closed the finding.

Again, one of those group findings from three different sites, Kansas City, Pantex and Weldon Spring, Findings 19, 20 and 21, was a concern about whether there were guidance documents or workbooks for implementing the dose adjustments that had been listed in OTIB-52.

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And the response indicated that the requirements had been built in through the tool which was used by the dose reconstructors, and that was found to be the case and it was closed.

That's a full review of what we've done with PER-14 and where we are right now. Questions?

CHAIRMAN MELIUS: Gen?

MEMBER ROESSLER: This was a lot to absorb, but I do have one question on Slide 8, and it appears on other slides too. It seems that Hanford internal doses are different than some of the other sites.

On Slide 8, you talk about -- you say only Hanford coworker intake rates needed to be multiplied by a factor of 2. What's the difference at Hanford? What makes that site different? Is it because they started employment earlier and --

MEMBER MUNN: No, not entirely. It's the scope of the activities at Hanford more

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than anything else. The level of -- I should say the scope, also, of the type of materials that were handled. If anything was going to be handled at all, it was undoubtedly passed through the workforce at Hanford.

And because of the types of materials, because of the level of activity, as well as the periods of activity, this decision was made relatively early that a dose correction factor of 2 was going to be implemented at the Hanford site. I believe that has been done across the board.

CHAIRMAN MELIUS: There's some others here. Yes, Jim, do you want to -- yes.

DR. NETON: I could just elaborate a little bit on that. These were, you know, just empirical data sets that we had, you know, construction trades versus regular workers, and using the available data, it just came out that way. We really made no judgment as to why that was particularly true.

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Hanford was the only one of the sites we evaluated, though, that did have that difference. I'm not sure I really understand why it existed there, but that's the way we treated it. It was just purely based on empirical evaluation.

CHAIRMAN MELIUS: Any other questions? If not, I have a -- it's more of a comment than a question. Findings 9, 10, 11 and 16, and then later on in -- towards the end in Findings Number 19, 20 and 21, the -- it seems that we're referring findings back to the other site, individual site documents, or to individual Site Reviews to be addressed.

And I think -- again, it's not a fault of the Procedures Committee but, you know, we do these reviews on multiple levels, and we've always had problems with when things get referred, or assuming that, you know, another Work Group or that NIOSH will address it, or someone will address the site-specific

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finding.

And I think we -- in this case, we have a number of these sites that are currently under active review. We have some that are under inactive review. I mean, Brad's doing, I think, still working on some stuff at Pantex. We have Hanford, which we're actually mostly focusing on SEC issues still, and I won't go through the whole list, Kansas City, and so on. And I think we just need to make sure that this all gets communicated and that NIOSH also be aware of these issues and SC&A also.

It's not clear to me that these, either in the case where there's been a problem found or where it's been the construction worker adjustment is subsumed under instructions for doing individual dose reconstruction, that these get, you know, properly evaluated and reviewed.

They may be, they may not, and I think we just sort of need to formalize that process

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and make sure there is some follow-up on these issues. Dave?

MEMBER KOTELCHUCK: Okay. If I can get through, I can do this.

So, I'm not quite sure where this leaves us. Have -- would you say that the PER audit process has been completed for the construction workers, or are there next steps, and what are they?

MEMBER MUNN: You would not have me here giving this review for you if we had not fully completed our review of the PER. The Subcommittee is done with PER-14. And what we have is now history, and you have it.

MEMBER KOTELCHUCK: Thank you.

MEMBER MUNN: You bet.

CHAIRMAN MELIUS: And I think my comment was saying that, you know, the PER has been -- review has been completed but we -- there are findings that still need to be addressed in other venues or other groups and

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so forth. And so we should not lose track of that.

MEMBER MUNN: Yes, our Chair says yes but.

CHAIRMAN MELIUS: I mean, we have a similar problem with individual, you know, dose reconstruction reviews where we find a Site Profile issue or something, and we just need to make sure we connect back rather than coming, you know, ten years later finding --

MEMBER LEMAN: Right.

CHAIRMAN MELIUS: -- discovering the problem again.

MEMBER LEMAN: So in addressing your question, who has that responsibility?

CHAIRMAN MELIUS: We do.

MEMBER MUNN: Yes.

MEMBER LEMAN: I mean, how are we going to keep track of it is what I'm asking. I mean --

CHAIRMAN MELIUS: Well, we --

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MEMBER LEMAN: -- is somebody going to follow this?

CHAIRMAN MELIUS: I think all the Board Members have some responsibility for all the sites here. And I certainly took note of Hanford.

MEMBER LEMAN: Should it be a continuing agenda item or?

CHAIRMAN MELIUS: And I would hope that SC&A and -- does that, and NIOSH also.

MEMBER LEMAN: Yes.

MR. KATZ: Let me just add to what Dr. Melius is saying. So I generally, when one of these findings comes up, that we're going to refer, from whatever Subcommittee or Work Group to somewhere else, generally either I or the Chair will send an email to the Chair of the group it's being referred to, saying this finding, and provide -- I'll provide a transcript for the discussion as well.

This finding is being transferred to

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your Work Group to resolve. So that's part of the process that goes on here. I think one thing that'll help, though, it doesn't -- that doesn't necessarily make it easy to track. So, because then that Chair has it, but that doesn't mean it's easy to track.

So what we have in -- we're trying to put in place, but it's difficult because a number of these Work Groups are longstanding, and we're putting into place a system, you know, midstream for those, but as Stu has discussed at a number of these Board meetings, we have this tracking system that we started off using just for Procedures.

Now we've expanded it and we're using it for Dose Reconstruction Subcommittee, and we want to use it -- and for new Work Groups, and we want to use it, ultimately, for everyone.

That tracking system, actually, is great for just this problem, because that finding sits there unresolved for all to see

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until it is resolved. And that way we won't lose anything.

So to the extent we can move towards using that system, I think we'll be better off for just this problem. Because it is tough. It is tough for everyone to keep track of these items. A number of these chairs are chairs of a number of Work Groups and Subcommittees, and it's a lot to mind.

MEMBER MUNN: And it was an extremely painful process for us to get that database up and running. We spent a disproportionate amount of the Board's time giving you reports on our blow-by-blow, step-by-step process to do that. But we -- our IT folks have been very diligent in helping with this.

And in the cases that we have in front of us right now, in almost all cases -- I do believe I can safely state in all cases, these dose reconstruction factors, the correction factors that we were talking about, have been

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very carefully applied in all of the tools that are used by the dose reconstructors.

So as long as the claim is identified as a CTW, it's -- I personally have, am well reassured that the tools that are available to the dose reconstructor will be adequate for that purpose, will catch that. Any other questions?

CHAIRMAN MELIUS: Any Board Members on the phone have questions? I don't want you to be forgotten. Okay, if not, it's almost 10 o'clock. Why don't we take a break and we'll reconvene at 10:30.

(Whereupon, the above-entitled matter went off the record at 9:59 a.m. and resumed at 10:36 a.m.)

CHAIRMAN MELIUS: Okay. Before this deteriorates any more we'd better reconvene. So between now and lunch we're going to be talking about sufficient accuracy and coworker modeling, and do that.

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I think, as we've talked at the last Board meeting and a little bit on the last Board meeting call, we've been working -- the SEC Review Group's been working with Jim Neton, NIOSH, and SC&A on addressing both sufficient accuracy issues but with more of a focus, recently, on coworker modeling issues.

And we've gone through, well one meeting just before the, our Idaho meeting, you know, the day before, and we had another conference call a few weeks -- a couple of weeks ago on this, to do that.

And Jim has -- Jim Neton's been working through a document describing sort of an approach to developing coworker models, and a sort of set of guidelines, I guess we will call them, similar to sort of the guidelines we have for reviewing surrogate data, reviewing SEC Evaluation Reports.

So that's all. It's not totally prescriptive, but the idea is to try to get what

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are the key factors that will be used in developing and therefore the key factors that would be used in evaluating the coworker models.

So as I said, we had a meeting, what two weeks ago, something like that, and Jim's done some updating then. The plan is that Jim will do a presentation, go through sort of the key points in the document. We'd like to get your, all the Board Members' comments here today. And then we'll ask everyone on the Board to also, you know, when you have time to review the document, some time in the next couple of weeks get comments in to Jim. And we'll do another revision, and hopefully some time in the near future we'll get this finalized.

I'm hoping, certainly by the March meeting, I think we'll be able to do that. So that's sort of our target, but there'll be some other iterations as we go along. So let me turn

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it over to Jim Neton.

DR. NETON: Thank you Dr. Melius. As Dr. Melius said, this is something that's been going on for quite some time now. It started shortly after the release of ORAU Report 53, which was a report that described how to analyze stratified data sets.

And SC&A had a number of findings on the statistics and such, and going through that it became apparent that, well let's first get an idea of how we evaluate data to see if it's stratified in the first place, and sort of, not bypass the statistics but talk about in general, how you look at, how you approach coworker data sets.

And so we -- I volunteered, and we've been working hard on putting together an implementation guide, we're calling it -- right now it's a draft, on exactly that. What criteria are used to evaluate these data sets that go into coworker models. And we're up to

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Rev 3 now, and I will go over that in a second.

But before I get into that, I thought it might be useful for me to go over sort of a case study, if you will, of what -- how a coworker model is developed. We use them a lot.

We -- almost -- many, many sites have them, and it became sort of obvious to me, or apparent to me, at our Working Group meeting in Idaho that there wasn't a general, you know, general understanding of what we mean, how we go about establishing a coworker.

So I'm going to briefly go over -- I have like six or seven slides, and just sort of go over, you know, what -- how is a coworker model developed. I'm going to use the internal dose example because they tend to be the most complicated. External is a little less troublesome.

So here goes. So you've seen this before, and this is right out of Report 53.

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This is the -- these are the, this summary of the steps that go into an internal coworker model calculation.

You start with Box 1 on the upper left, which is the urine data, just a database you get from the site that has all the urine data over, let's say, the history of the plant, from '57 to 2007 in this case, is what we're going over today.

But we need to do something with that, to apply to workers that didn't have any monitoring data. And we start that by doing this OPOS analysis, this one person, one statistic analysis.

We're going to talk about that a little later, but what that means is if you have multiple data points in one time interval, in one year, you need to somehow account for that, group them together so you have one value in that one monitoring period. We'll talk about it a little later.

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There was some disagreement between SC&A and NIOSH and the Working Group on that. I think we've come to some agreement.

The third step is to take those OPOS data, the one person, one statistics data, and generate these distributions. You take the log of the data and you do a cumulative probability plot, and then you look at how they fall on a normal distribution.

And from that you can generate the 50th and 84th percentile of the data. So that can characterize the data for that one particular time interval, one year, three months, whatever data set you have.

The fourth step is where you really start getting more detailed. You take the 50th and 84th percentile excretion rates, what the person was excreting, and you convert that into what they were actually inhaling. That's where the IMBA program comes in. That's Step 4.

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IMBA, Integrated Modules for Bioassay is a very sophisticated computer program that can take urinary excretion data and say, what were these people actually breathing in over this time period if the exposure was chronic. A key to these coworker models for internal is that, for all the models we've developed so far have been chronic intake models.

You use that to generate the 50th and 84th percentile intakes, what these people were breathing in, and then you can use that for workers, an unmonitored worker, to calculate what their internal dose was over a certain period of time. I've got some examples.

And then, of course, the sixth step is you'd use the dose calculated to the organ to generate some Probability of Causation result. So this would all be -- we take monitored worker data and try to apply it to unmonitored workers.

This is what I was talking about. Let's see, Step 3 here is generate the 50th and

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84th percentile urine data. I just have an example here of what one of those distributions might look like, where you see the geometric mean and the 84th percentile. You've got 196 individual workers represented here that left 332 samples in a single year.

So you'll have one of these for every single year in this particular case. It could be three months. If we had -- if urine samples were taken every three months, we would have, every three month, a graph like this. But typically, a year seems to be about the most common monitoring period.

So you have a graph for each monitoring period, and you generate graphs, in this case for Savannah River, from 1955 through 2007. These are the distributions of urine -- urinary excretion over the entire monitoring history that we have.

And this is Table A-3 right out of the Savannah River Site. I think it's in the Site

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Profile. I don't think they have a separate -- I think it's a TIB. This is a TIB.

Anyway, these are the data that were generated. This is the real data. So you can see, from the middle of the year, July 1st, '50 -- actually '55. I've only presented here through 1965, or '84, but it continues on through 2007. I didn't give you the entire sheet.

But you can see that you can generate the 50th percentile, the 84th percentile for every particular year. And now these are the data that are going to go into IMBA, the Integrated Modules for Bioassay Analysis, to estimate what the people actually breathed in during these periods with these data sets.

And this is where it gets a little tricky to explain, but the blue dots, in this particular case, are the 50th percentile data points from that graph. So that second column there from the left, these are the 50th

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percentile data points presented over the monitoring period that we have, for which we have data.

Now you can see that there's two separate type, two separate sort of collections of data, the blue dots and the red dots. The idea here is that as long as you have a monitoring period where the data appear to be similar, where the exposure -- the excretion patterns were similar, that represents what we call one intake regime.

And then, so you would have Intake Regime 1, the blue dots, and Intake Regime 2, the red dots. So we will fit a chronic exposure model through the blue dots up through where the red dots start.

And so you can see that increasing black solid line. It starts down by zero because when you first start work, you start -- it starts going up because you start inhaling material. And then it stops at the

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intersection of the blue and red dots, and starts to decrease.

That's because once the intake regime stops, we're saying there's no more exposure, but the person will still continue to excrete uranium that they had -- or plutonium, in this case, that they had inhaled in the earlier period.

So that's Intake Regime 1. Now you go to the bottom one where you say Intake Regime 2, and there's another chronic model fit to that. So here is an example of where we fit data, those 50th percentile data points, to the data. There is some subjectivity involved in this, but I'm not sure there's any way around that. Okay.

So this is the complete data set, so you can see all the data including the first and second regimes. And what's interesting, you really can't see it very well, but there's a green line there, the solid line.

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That's what the excretion would be if the person inhaled plutonium from day one of the plant operations all the way through 2007. That's the combination of an intake from Period 1 and Period 2.

And here is, taken right out of the TIB, the values for those intake amounts. So between '55 and '90, the person would receive -- would get about 1.8 picocuries per day intake. The 84th percentile is 5.1. You fit the same curve at the 84th percentile to get that value. And the GSD on this particular fit is 2.88.

You see the value that says adjusted GSD? That is the minimum geometric standard deviation that we will allow for an internal exposure, because there is a lot of uncertainty involved in internal dosimetry, and based on some references that we've obtained from the literature, it seemed to be 3 is about as low as you can go.

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So we won't assign any GSD less than 3 for internal exposures. So everyone will have that uncertainty associated with it.

And then you see the second period, 1991 to 2007, it's a little lower, 0.9 picocuries per day. Interesting, what you see here is the change in the out -- in the urinary output really is more of a function of the detection limit of the measurement system rather than changes in work -- necessarily changes in working conditions.

I think they probably went to alpha spectrometry back then, in 1991. Detection limits went down, and so you have a much lower median value, because many of the 50th percentile values that we calculate are usually right around the detection limit of the measurement system. And that's pretty much true in this case.

So, that's just a sort of a quick run-through of how a coworker model is

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established, just so everybody has a feel for what we've been doing for a long time now, at least in the internal dosimetry world. Is there any questions on that before I move on to the implementation guide?

CHAIRMAN MELIUS: Yes, Brad?

MEMBER CLAWSON: I just -- all the dots, they represent the whole spectrum of workers, or --

DR. NETON: In this particular case, this would be all the workers. Now it could be, if you decide to have some sort of a strata, it would represent the 50th percentile of all the urine values for that particular strata.

This is a general model for all the workers, you're right. And we're going to talk about how we might make some decisions about how to partition or stratify these in the different data sets. That's the, sort of the point.

MEMBER RICHARDSON: Can I ask you just a follow-up question.

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DR. NETON: Yes.

MEMBER RICHARDSON: A dot is not a worker but is --

DR. NETON: It's the 50th percentile of the urinary excretion of the workers in that year.

MEMBER RICHARDSON: A dot represents a year?

DR. NETON: Right.

MEMBER RICHARDSON: And it's --

DR. NETON: In this case --

MEMBER RICHARDSON: -- median value of excretion in a year.

DR. NETON: Right.

MEMBER RICHARDSON: And you had -- one slide back you had two colored dots.

DR. NETON: Right.

MEMBER RICHARDSON: And could you tell me once more the transition?

DR. NETON: Well, when you fit chronic exposure models, you like to fit intake

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regimes, as we call them, with -- that have similar excretion patterns. So the blue dots is Excretion Pattern 1, the red dots are Excretion Pattern 2. Those were fit as separate chronic intake exposure scenarios.

So the blue dots were fit all the way through whatever that number is, 12,000 days post start of the site, through 1990 -- I can't read it from here, 1990 it looks like. So the blue --

MEMBER RICHARDSON: Yes. So the origin was 1955?

DR. NETON: Right.

MEMBER RICHARDSON: And you've got, I think, 60 years of data, 20,000 --

DR. NETON: Right.

MEMBER RICHARDSON: -- days or something like that.

DR. NETON: Right.

MEMBER RICHARDSON: So you're going up. And so that the red, the transition from

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blue to red is not related to the two rows of your summary table, 1955 to 1990 and 1991 to 2007? That's something different?

DR. NETON: No. Well, the transition in 1990 was because you can see there was a -- there's a distinct, an abrupt decrease in the urinary output in 1990. So to fit a continuous chronic exposure model through all of those dots just doesn't seem reasonable.

MEMBER RICHARDSON: So, okay. So the -- again, the transition from blue dots to red dots is because of a change in monitoring practice. It's not -- because I thought you were describing it as an assumption about a particular exposure scenario.

DR. NETON: Well, it's not a change in monitoring. It's a change in the qualitative look of the plots. I mean, you can see there that there's a fairly abrupt change in the output of the urine. And so --

MEMBER RICHARDSON: Well, I mean, you

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might, or one might look at it and see that there's two dots, perhaps, that look like outliers and everything else looks like --

DR. NETON: Wait, wait. I'm -- now, I --

MEMBER RICHARDSON: Or two or three, yes, but I mean, they're -- but, you know, you see that in a lot of --

DR. NETON: Yes.

MEMBER RICHARDSON: -- quirky things in --

DR. NETON: But I'm saying, if you look at the red dots themselves, they are about an order of magnitude lower or about a factor of five, I can't tell from here, than the dot, the blue dots. So something happened there. Something is inherently different about the urinary excretion pattern in that second period.

This was a qualitative judgment here. This is not quantitative.

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MEMBER RICHARDSON: No, I know. I'm just trying -- I was just trying to understand the interpretation.

DR. NETON: Right.

MEMBER RICHARDSON: That was a post-hoc color coding. And then you assume that there's two different chronic intake patterns --

DR. NETON: Correct.

MEMBER RICHARDSON: -- in, among, on average, among the workers at the site.

DR. NETON: Right.

MEMBER RICHARDSON: Commencing -- one commencing in 1955 and the other commencing in 19 --

DR. NETON: 91.

MEMBER RICHARDSON: -- 91.

DR. NETON: Correct.

MEMBER RICHARDSON: Okay. How does that happen? I guess, you know, I think about an exposure pattern as happening for a worker

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but not for the median population.

DR. NETON: Yes, well this raises some issues with the model. Now remember, the 50th percentile is not the same person in every particular year.

MEMBER RICHARDSON: Right.

DR. NETON: So in some ways, I think it's fairly -- it's somewhat favorable, in a way, to pick the 50th percentile for every year. It's probably not the same person. You're picking the median value for every particular year.

Yes, it's -- this is the way we've been doing it. I'm not saying it's perfect. But again, you are applying this to unmonitored workers, not -- this is the experience of the monitored population. Now you're trying to apply this to people who had no monitoring data at all, and what is their exposure experience.

And if you think of the excretion dots as sort of representative of the air

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concentrations in the plant, I think you can see that -- in this case, it's a little different because I do believe that the red dots are lower because of a change in the technology.

They had a lower -- ability to measure lower levels of plutonium, therefore you're seeing lower values. It's very possible that some of these chronic exposure models, the 50th percentile is actually equal to the MDA or the detection limit.

MEMBER RICHARDSON: So some things, I mean, sometimes it's easier to see changes in monitoring by following an individual. And you would have workers who maybe were -- you would see the transition easier on an individual basis.

DR. NETON: Yes. That's -- but then, over this long period of time I'm not sure we can do that. You know, you're talking thousands and thousands of samples here. To find that individual thread that you can -- and

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then you have one individual for the whole site. Yes, I'm not sure that's possible.

MEMBER RICHARDSON: Okay.

MEMBER ZIEMER: Well, just a couple of comments. One, there is some subjectivity in looking at plots and saying these are two different ones.

DR. NETON: Right.

MEMBER ZIEMER: That's one comment. Number two, I think this could reflect either a change in work practices or change in detection abilities. There's several possibilities.

DR. NETON: Correct.

MEMBER ZIEMER: But --

DR. NETON: Yes.

MEMBER RICHARDSON: I've seen, at Savannah River, changes in recording just because recording practices of -- or, you know, data issues as well. I mean, so you could see the median dropped to zero because --

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DR. NETON: Right.

MEMBER RICHARDSON: -- zeros are recorded for detection limits.

DR. NETON: Well, yes. And that's another issue.

MEMBER ZIEMER: There=s some statistical analysis issues that we'll be getting into.

DR. NETON: Yes, and that's another issue.

MEMBER ZIEMER: I think it's important. You can't just take one individual and talk about the work practice change for --

DR. NETON: Right.

MEMBER ZIEMER: I think you're taking a large amount of data in these things, and looking at an overall effect.

DR. NETON: Yes.

CHAIRMAN MELIUS: But doesn't that sort of -- that sort of begs the question of well, should there be stratification within

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that large population --

DR. NETON: Well, and that's --

CHAIRMAN MELIUS: -- which I think is what, sort of what David was getting at, maybe not on an individual --

DR. NETON: Yes.

CHAIRMAN MELIUS: -- but that's one way you'd want to, you know, sort of examine that. But by group, there could be, and again, you got to sort of define what the plot is plus what you see in, you know, as the mix of workers or what -- I mean, there's lots of possibility.

And so I don't think you can look at any of this without sort of a pretty thorough knowledge of the site and --

DR. NETON: Right.

CHAIRMAN MELIUS: -- you know.

DR. NETON: I'm not trying to imply that this is the right way to go, or one size fits all here. I was just trying to say, if this were a stratified subset, and we knew, for

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instance, that these were maintenance workers, and they were stratified out, this is how we would go about trying to establish what their unmonitored colleagues' exposure experience was. I don't want to belabor this too much.

MEMBER KOTELCHUCK: Dave Kotelchuck. Let me ask you, this -- these data points are, of course, coming out from the IMBA program, right? These are --

DR. NETON: No. These are actually excretion data points that we received from the DOE, or AWE in some cases.

MEMBER KOTELCHUCK: Oh okay. So these are the excretion points?

DR. NETON: These are urinary excretion values we have in a database.

MEMBER KOTELCHUCK: Okay.

DR. NETON: Of the actual exposed workers, sorry.

MEMBER KOTELCHUCK: Suppose -- but suppose you were to follow, not one worker as

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a representative, but --

DR. NETON: Ball worker?

MEMBER KOTELCHUCK: Well, it could be a -- but just a few dozen, you should be able to, if you will, visually see that there is really a transition going on. There should be some kind of tailing off.

DR. NETON: It may be, but those would be more demonstrable in the higher exposure levels. And we're trying to get the 50th percentile established here, and those tend to be down into the weeds.

They'll monitor 300, 400 workers in a year, and you'll see that the 50th percentile worker, who was monitored, is already bouncing around the detection limit.

Yes, there's going to be workers up in the 95th percentile that were more heavily exposed, and you could do individual dose reconstructions, but in this particular case are going to be dose reconstructions using

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missed dose, for the most part.

We've been down this path before about --

MEMBER KOTELCHUCK: Yes.

DR. NETON: -- can we really use individual workers, and I'm pretty convinced, at least, that it's -- it would be almost impossible.

MEMBER KOTELCHUCK: Individual workers OPOS.

DR. NETON: Well to take OPOS data as an individual worker and reconstruct everybody's dose, individually, would be really, really difficult.

MEMBER KOTELCHUCK: Okay.

DR. NETON: Oftentimes you only have one sample a year on these people, and now you're saying well, I can do more with that than I really can.

You know, there's some substance here. Chronic exposure, the annual values

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that were taken can be used to bound those chronic exposure scenarios. I mean, you know, those are inherent assumptions but I think that we've sort of gotten through that in the past, and that part, I think, is okay.

What I'm going to talk about next is really, you know, how we determine which data points are used for which sets of workers. That's sort of the thrust of the talk. Maybe I complicated things a little more here than I expected to. But I just wanted people to be aware of, this is what we're talking about, how -- so. Okay. Any other questions? Henry?

MEMBER ANDERSON: Are you using the median value or are you using the mean value?

DR. NETON: Median.

MEMBER ANDERSON: Median?

DR. NETON: Median value.

MEMBER ANDERSON: Got it. Because that would help you adjust for the change of the limit of detection. Because although -- I

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mean, what I was going to say is if you have a change in the limit of detection, you could apply the same limit of detection from the earlier years to the later years.

You'd lose some data, but you'd see, does that change? Is this level that's going down that, starting in 1991, is that an artifact of detection? But if you're using medians --

DR. NETON: Yes. Well --

MEMBER ANDERSON: It -- as long as that median is above the limit of detection, I mean, if in a given --

DR. NETON: If it is, yes. Yes.

MEMBER ANDERSON: Is it? Is it typically, in the earlier years, also --

DR. NETON: In the very, very early years, it's above the detection limit. As you get more contemporary, maybe 1970s, 80s, it's almost very often about the detection limit, sometimes even below the detection limit.

MEMBER ANDERSON: So you artificially

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assign the limit of detection to the value? Or a square root of --

DR. NETON: Yes. We have techniques for accommodating for what we call a missed dose, right.

MEMBER ANDERSON: Because that --

DR. NETON: But remember, each of these values is going to have a geometric standard deviation of 3 associated with it anyways, so.

CHAIRMAN MELIUS: Okay. Any Board Members on the phone have questions, before we move on?

MEMBER FIELD: No, this is Bill. I thought this was a very helpful presentation. Appreciate it.

DR. NETON: Thanks.

CHAIRMAN MELIUS: Okay.

DR. NETON: Okay.

CHAIRMAN MELIUS: Next.

DR. NETON: All right. That being

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said, now we'll switch gears a little bit and talk about how we ended up with this coworker model draft -- again, I emphasize draft implementation guide.

It doesn't say even implementation guide yet, but the idea is that this will end up becoming NIOSH Implementation Guide, I think, 006. You know, we have one for covered exposure, we have one for surrogate data. So this will be the latest in our collection.

So I thought the best way, maybe, to go over --

MR. HINNEFELD: Excuse me just a minute, Jim. I just wanted to make sure people who are on the phone, we have just left Live Meeting on the presentations. So if you're following on Live Meeting on the phone, you won't see what's on the screen here in the room, but it is on the website.

It's called Draft Criteria for Evaluation of Coworker Data. I think it's Rev

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3. I think there's a rev -- it's coworker data and Rev 3 is in the title of the file. And that's what's on the screen here.

DR. NETON: I'm reasonably certain that it's on the website. At least I requested that it be put there, so. So yes, and the idea is, here, we're just going to scroll through, because I find it more comfortable to talk from something rather than speak in generalities.

So the idea was, we're up to Rev 3. We started off saying okay, we didn't have any such guidance in the past. I mean, we've built a lot of coworker models, and our approach, from the very beginning, has been, let's just take all the data, rank it and apply it, and not spend a lot of time thinking about where these little subsets may have been.

I mean, we've done some of that. We talked earlier about Report 52, or TIB-52. So we went back to the drawing board, said what really do we need to think about when we're

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doing these coworker models?

So there's four sections to this documents. I think it's up to about eight pages now. The first section is the introduction, which sort of gives us the basis of why we have coworker models in the first place.

The second section talks about, if you have a set of data, you need to look at it for data adequacy and completeness, and also the type of program that they were trying to implement with that data. So that's a data adequacy type thing.

The third section talks about if you -- once you decide that you can really use the data to establish coworkers, how do you analyze it. And that kind of gets into this 50th percentile, 84th percentile situation.

Then the fourth set, which is still sort of a little bit soft in my mind, is how you actually do a statistical analysis for

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stratification. And it'll become obvious as I talk why that's sort of still out there.

So if we could scroll through just the first section, and maybe stop at that quote there. It talks about individuals. The dose reconstruction regulation is directly out of that.

It says, "If individual monitoring data are not available or adequate, dose reconstructions may use monitoring results for groups of workers with" -- and this is where it gets tricky, for "comparable activities and relationships to the radiation environment."

That's right out of the regulation, so that's what we're obligated to do. Now oftentimes, you know, the level of granularity, though, how much you can get in the weeds about who that monitoring data was taken from and that sort of thing is not always as good as you'd like it to be.

And so we have, in the past, generated

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coworker models that pretty much are one size fits all, you know, a full distribution of data.

I'm going to go into some descriptions here, though, about what we should be considering up front, before we go, before we make that leap of faith. Okay.

So this next section, criteria for the evaluation adequacy and completeness -- go down a little further, Stu -- yes, just this section here. The data adequacy really speaks to the technical ability of the monitoring methods that were employed.

I mean, we have a lot of data that are taken all the way back from the 1940s to the current time. Clearly the technology has changed. And so you have to take the data set that you have in hand and establish, is this -- can this data really, reliably -- can it be reliably used to determine what the person's value was, excretion-wise or on their dosimeter? Is the technology there?

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I always use the example of measurement of neutrons in the early days using film. The film couldn't see neutrons, energies probably below say 500 keV.

So you've got to be aware of that and say well, these data -- we have these data but we need to consider what the heck was going on with the technology, and either adjust it or say it can't be used.

So this sets the stage for what type of data could be used in coworker models. We talk about using a bioassay, which we often, very often use. And bioassay, in our mind, also includes in vivo analyses, although we don't do that particularly often. But it can be a valid technique for a coworker model. We've done this.

And I also included as a footnote in there, it talks about you can use breathing zone air samples. We've never done that yet, I don't think, but it certainly would be a viable

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option if you could show the breathing zone data were pretty good, I mean, they were really lapel air sampling, that sort of thing.

And then of course, you need to talk about external dosimetry type measurements, that measure beta, gamma, neutron, that sort of thing.

So it outlines here sort of the criteria to look at, not all inclusive of what should be evaluated when you have in vitro measurements, in vivo measurements, that sort of thing. I won't read all the criteria, but they're in there. And then the last section talks about external.

So here we're just trying to vet the quality of the data. Is the data useful? The next step goes into the completeness of the data.

MEMBER LEMAN: Can I ask --

CHAIRMAN MELIUS: Yes, sure.

DR. NETON: Yes, maybe I should stop

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after each section.

MEMBER LEMAN: Is there --

MEMBER MUNN: Microphone.

MR. KATZ: Use the microphone please.

MEMBER LEMAN: Sorry. Is there good compatibility between the time frames the samples are taken? In other words, does the methodology of sampling techniques change from one decade to the next decade?

DR. NETON: It can, yes. Definitely.

MEMBER LEMAN: And how do you adjust for that?

DR. NETON: Yes, well that needs to be taken into consideration, the temporal nature of the quality of the data. And I think it's somewhere in here. Dr. Melius raised that same issue the last time. And you're right, you can't take a 1950s technology -- or, conversely, take a 1980s technology and say that applies all the way back.

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MEMBER LEMAN: Well, what I wanted to see was how you adjusted to that, and what you did, and if that's later on, why we --

DR. NETON: Well, actually, this is a --

CHAIRMAN MELIUS: I was going to say, it's always going to be applied case by case or site by site. So I think it -- we're just trying to get the general areas of consideration that need to be taken into account when developing the model.

But it's going to be a -- and certainly there's lots of examples that I can think of where we've taken -- we've either had an SEC because of a problem with an older monitoring method, from a lot of the early ones. There weren't monitoring methods available or they were very crude relative to what would be needed for dose reconstruction.

So I think we have a fairly -- a fair amount of experience with that. You know, if

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I remember, specifically with Fernald, but I think recently the partial -- the SEC was based on a problem with the --

DR. NETON: I think that was the in vivo data at Fernald.

CHAIRMAN MELIUS: Yes, right. In vivo data, right.

DR. NETON: So yes, this document, I think, it tends to talk about what you need to look at, and why, not necessarily exactly how to evaluate. It's a sort of a general guidance.

There is a section here at the end of that, that does talk about looking at the detection limit of the system. For example, oftentimes with thorium measurements you -- thorium urinalysis is a very poor measure of how much you expose. It has a very poor detection limit. And so you could inhale a lot of thorium and not be excreting much in your urine.

So in those cases, even if you have a

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lot of data, you might say well, does my coworker model provide me plausible values? I mean, you could say well it's less than X, which is a very high number, but is that really a reasonably accurate value?

So you need to take that into consideration as well. So that's the sort of -- it's sort of scripted out here. The in vivo section does talk about using the progeny, the -- not measuring the radionuclide directly because sometimes, like thorium doesn't have any usable photons, so you start using some of the daughter progenies.

And you have to think about the implications of that, and are they in equilibrium or are they not, and if they aren't, how do you adjust it, that sort of thing. So there's a lot of things that need to be considered.

And I wouldn't want to begin to cover each and every one of those in this document.

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So this is sort of a general road map. Okay. Any more questions on data adequacy?

Okay, data completeness, this is where you need to look at to see if the data actually measured -- had a reasonable handle on the measure -- on the exposed population. Did they monitor enough people, and enough people by job category, for example, of the people that were exposed?

I think I called this a gap analysis, looking for, you know, first temporally by years. Do you have data for every year? If not, there are years missing, you need to figure out why they're missing.

Maybe there's good reason for it, the plant was shut down. If not, maybe rethink about what you can do in those years. But then you need to go back and look and see, are the work categories that were represented in those facilities adequately monitored.

I have an example here that came out

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at one of the -- you have that table, I think, is down there. Yes. This is a good example I just threw in. I thought it was pretty appropriate. SC&A had mentioned this and I thought, yes, it makes some sense.

This is where an SEC was added at the Nevada Test Site. And we, you know, originally our contention was, well we have a lot of monitoring data. We have 290 samples here, of a lot of workers.

But when you really do an analysis of the job categories that were monitored, in this particular case more than 2/3 of the samples were taken on the rad safety staff, while the other workers were not very well represented.

Now, if one could argue, and make the case that the rad safety staff are the highest exposed, okay. But if that's not the case, now you got a problem.

And so that's all this section is trying to say, is you need to look at the data,

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and do so qualitatively and quantitatively and establish that, you know, you really can bound these different categories of exposed workers.

Okay. So that's pretty much that in a nutshell. I think the table does a good job, kind of driving that home. Of course, you know, there's language in there about looking at the magnitudes of the exposures.

Very small exposures, you might not see a lot of monitored workers, or if there were, you know, special considerations you need to consider. But in general, I think this is the way it should go. Okay Stu, you can keep moving down.

Yes, I kind of went over this, so you can read this again, but I just want to -- okay, the next section talks about, now that -- if we believe that we have enough monitored workers, and who were monitored in the different job categories, we also need to look and decide -- oh, sorry.

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CHAIRMAN MELIUS: Can we just stop for --

DR. NETON: Oh I'm sorry, yes.

CHAIRMAN MELIUS: -- comments or questions? Unfortunately some of us have been so close to this, and sort of, so I could recognize where you had updated it that --

DR. NETON: Yes.

CHAIRMAN MELIUS: -- so we could keep review. At least in my mind, this is sort of an important section that we need to be able to, you know, as part of our evaluation, sort of need to hear about when we're looking at a coworker model.

Because it -- by the time a coworker model comes out this is often hidden. I mean, this is hidden behind the model. And in terms of the judgment that goes into it, in -- I mean, and I think many of these factors have been evaluated and looked at.

I don't think, again, we've always

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looked at them ourselves during the process, and there have been problems. We've seen a number of SECs where, when we've sort of poked behind the model we've raised questions.

But it's -- you know, I think we need to urge the other Board Members to sort of look at this and sort of think about what other questions you might have if you were evaluating, you know, the presentation of a coworker model about the data.

I've got a few things I want to add here, and I think -- everybody to look at because again, I think it is an important part of this.

MEMBER RICHARDSON: Can I ask one question? That -- just a -- in that, in the table, the -- what's just an illustration of a problem, if you could scroll back up to that Table 1.

DR. NETON: Okay.

MEMBER RICHARDSON: Where just in the

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last period there are -- there's the bulk of the bioassay monitoring for people other than rad safety staff. It's the bottom right hand corner where all of a sudden 73 --

DR. NETON: Security?

MEMBER RICHARDSON: -- out of 74, is that all like exit bioassay? Is that -- or was it -- what drove that to happen, do you know?

DR. NETON: I honestly don't remember. I don't think it was exit bioassay, though. I think security just were added in the '81 to '92 period. I don't recall why, to be honest with you.

MEMBER RICHARDSON: Okay.

CHAIRMAN MELIUS: Yes. If you go back to the NTS report, there's a -- at least the SC&A review is a fairly extensive analysis of this. Because this took us a while to sort of get on top of and sort of understand, and there was a lot of back and forth as to, about the data set and was it appropriate.

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But as I recall, a fairly good analysis that those, that the rad safety workers really didn't, really were not representative of the other people doing the site. And it was more than just sort of a qualitative assessment, it was also looking at the data from a --

DR. NETON: Yes, there were other issues with the Nevada Test Site. They tended to be episodic samples versus routine, and we had a -- you know, when you develop a chronic exposure coworker model and these are episodic, incident-driven samples, how does that chronic model really fit the picture?

And we're going to talk about that. That's a good segue into this next section. You know, so now that you have the technical adequacy of the data, and you feel like you've got a fairly complete picture of who was monitored and why, and it seems okay, you still need to consider the type of monitoring

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programs that were applied to these workers.

We outline the three types that we can think of, which are the routine representative sampling of the workers, routine measurements of the workers with the highest exposure, or incident samples.

Those are the three major ways that monitoring programs sort of come about, and you need to look at each of those populations and say, were they all -- if you want to combine it into one coworker model, first of all, were they all routine samples, yes or no?

If, for example -- and this comes up very frequently, and right now we're discussing this at the Savannah River Site, where building trades workers only monitored on an incident basis whereas everyone else in the plant who were doing routine ops were monitored on a routine basis.

Well, it's hard to convince myself right now that you can actually combine those

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two into one general coworker model. That's what we're saying. So this section goes into that in some detail about how one needs to look at that.

A good way to, of course, reevaluate if there's a routine program is to go look at the radiological control program documentation. It should spell out who was monitored under what frequency and that sort of thing.

But then it's -- you have to do a little more than that. You also have to go and make sure that they actually did that. Some sites had very -- well, documents with very good intentions, because of funding or whatever, didn't actually end up following up and collecting the samples that they thought they were. So you need to get some indication that that occurred.

So that's all kind of spelled out here. There's a special category that we put

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in there, which I think is a special category of routine, although maybe not really, which is people that worked on very short duration campaigns or projects, where it was short enough where they would just take maybe a beginning and an end sample.

And those are probably routine in a way because the project was short enough you could use those data for that specific group of workers to reconstruct their exposures. So that's discussed in here to some extent.

And the last piece of this, applicability of the monitoring data, I think Stu, if you scroll down to the end, maybe I'm wrong. What else is in here? No, that's not -- I think I covered all that.

I meant to say, in the last section under completeness, you also needed to go and look -- we need to look at if you're using data sets provided by the site or epi studies or whatever, you need to kind of make sure that you

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have -- the data set has all the monitoring data in it.

I mean, if for some reason there are gaps, the computer program didn't collect all the data or it got lost, that needs to be evaluated. And that can be done by going back and looking at some of the original records, if you have them, or some reports that said, in 1955 we took 10,000 samples, or by month, it was this.

You go in your data base and get yourself a good feeling that you have those, that many samples in there, or the fact that incident samples were always collected separately and aren't in this data base. Well, you need to know that. So that's something that needs to be considered.

Okay, any questions on that? I think we're okay. The third section here is the analysis of the data, and this is basically what we just talked about, how one can generate these

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distributions using the 50th and 84th percentile to analyze the data. And we would use the 95th percentile of the data.

If you had coworker models, all routine, and you had construction workers in there that were routinely monitored, they would be given the 95th percentile of the exposure because they are presumably a much higher, more highly exposed than say a person who was intermittently present in the plant, during things like walk-arounds, security guards, clerks, that sort of thing. They would get the 50th percentile.

So that's -- this just speaks to that type of a scenario, how you -- what do you do with the data once it's all good to go, so to speak.

It talks about this OPOS scenario, where one person, one statistic for monitoring interval, and it refers, actually to Report 53, which is out there, that discusses this OPOS,

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has been updated to include this one person, one sample, and the fact that it's a time-weighted average that goes backwards in time, averaging, rather than forward in time, and a little bit about how to deal with negative values.

We don't -- we won't use negative values in doing these time-weighted averages. We've come to that conclusion. So that's what this section deals with. It's fairly straightforward.

Okay, the final section -- oh well, just one -- the time interval of the modeled data, we talked about this at some length during the Working Group meetings.

Oftentimes we have an annual sample on workers, and we'll be using that. But in some cases, when the data are sparse, can you lump some data together? And we feel that you need at least 30 samples in a monitored interval, that one monitored period for good statistical considerations.

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And if you're going to do that, you may be able to group years together, several years, as long as you can demonstrate that the work practices and processes remain the same over that time period.

This says here at the end that those intervals should not exceed a three year period, unless there's stringent justification for doing so, and that's where it remains.

I originally had five years, but I went and back and checked our original Report 53 and it did say three years. So that's -- at least we're now consistent with our own internal documentation. I can't remember all these numbers.

Okay. So any questions on that, the analysis section?

So now we get to Section 4, which I said is still a little soft. I'm not -- we're not done with this yet, at least in my opinion. You could tell by what I just described that

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there's a pretty good process of what needs to be considered on how to stratify the data.

And if any of those conditions are met, I think you just need to stratify. I mean, if you can show that trades workers were incident-driven samples and bioassay, and they were different than the routine process workers, you know, I think one needs to stratify no matter what statistic.

You know, you don't need a statistical analysis to do that, because you've decided, a priori, that these are different populations to begin with. So that leaves the question in my mind open about when one would actually go about doing statistical tests on these data sets.

And we left it at the Working Group discussion level that we would -- we're going to go back and do some example analyses to see. I think it's best accomplished looking at some examples.

I -- right, in my mind right now I'm

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not really sure how that's going to play out. So right now, this is written very much in line with what Report 53 says, which is this Monte Carlo permutation test or the Peto-Prentice test, it is a statistical test that can be used.

I'm 100 percent certain when this would actually, in fact, be appropriate. And so this section is sort of on hold right now until I -- we get some examples together and can talk a little more concretely about it.

I think that concludes my quick perusal through the document.

CHAIRMAN MELIUS: Are there comments or questions? Brad, Gen, Loretta?

MEMBER CLAWSON: Jim, I understand where you're getting at to this, but to me, this all comes back to the data that we have, and how good it is. This is correct, right?

DR. NETON: Yes.

MEMBER CLAWSON: I'm looking at that 30 percent there, and -- or 30 samples. And

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when you're looking at a workforce of maybe a thousand people there, that's -- I'm not the sharpest tool in the shed here, but it looks like there's some pretty big gaps in there.

DR. NETON: Well, and I think there's some caveats in there, that says 30 samples is a minimum but you need to look at the population of monitored --

MEMBER CLAWSON: Population, okay.

DR. NETON: -- workers and that sort of stuff. Yes, it wasn't the intent that no matter what you could use 30 samples. I agree with you. But again, 30 samples -- if you had 50 people working on a glovebox operation for a year, and you had 30 samples, and they were the highest exposed workers on the glovebox line and you could establish that somehow, maybe that's okay.

MEMBER CLAWSON: Okay.

DR. NETON: So that's all we're trying to convey there.

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CHAIRMAN MELIUS: Again, just -- I think I said this a little bit before, but I think what we've been trying to do is what do we need to look at up front before we get into stratification? What information do we need to have, and have evaluated, probably more qualitatively than quantitatively?

But -- and with, you know, a fair amount of judgment and a fair amount of information about the site. It's always going to be specific to the site.

But then I think if the -- when I was reviewing one of the earlier back-and-forth reviews from SC&A and, I think, NIOSH's response to it and so forth, I mean, I could come up -- I think they were both right and they were both wrong in the sense that you could come up with scenarios or situations where, you know, whether you could stratify and how you would handle that stratification would be quite different depending on the circumstances at a

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particular site.

And so I think if we can sort of systematize and get a better set of guidelines on what we need to look at, I think it becomes then easier to decide, is 30 the right number or, you know, and some of these other sort of more statistical issues.

At least we have sort of a --

MEMBER ROESSLER: You need a threshold.

CHAIRMAN MELIUS: You have a threshold but you also have sort of a factual background that you understand what's going on at that site. So that's what we're trying to do, and it's probably why we've more heavily weighted the beginning of this thing, report, and got the implementation guidelines.

And I think the other will follow from that. And I actually think, as the results of our Work Group discussions, some of those issues that we were going back and forth on, on

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OPOS and so forth have become less troublesome, so to speak, or less of an issue.

So I think it's the, sort of the right way to go. And again, many of these factors probably were considered in developing coworker models, they just weren't made explicit in terms of how it was presented to us. Gen?

MEMBER ROESSLER: We have a Board with a wide range of perspectives and background knowledge on this subject, and I think it's really important at this point to help move this forward, that Board Members do submit written comments to Jim in the next couple of weeks. I think that's the most important step in moving this forward.

CHAIRMAN MELIUS: Loretta?

MEMBER VALERIO: I guess my question is, the coworker models that we're looking at right now are based on chronic exposures, that's correct?

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DR. NETON: Yes.

MEMBER VALERIO: I would assume all of these sites had projects that were short duration, which you did address. At any point do you anticipate that a coworker model for acute exposures would be established?

DR. NETON: I didn't cover it in my discussion, but the document does allow for it. Incident-driven coworker models may be appropriate, particularly in the more current era, when you have very good workplace controls that are -- that can be demonstrated, where there are, you know, continuous air monitors, people frisked in and out of the area, that sort of thing.

And so if you're comfortable that you can believe that there were no upset conditions that occurred that weren't caught somehow, and if that's true, then I think you could use an incident-type model.

But you -- and I think it says in

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there, you have to be very careful about that. You know, your documentation has to be almost impeccable to be able to do that, but I think it's a -- could be allowed for, particularly post 1990, where, you know, you have, almost everybody is supposed to be on a monitoring program if they had a 100 millirem potential exposure for internal, those sort of things.

And, you know, but you always have to allow for some gaps and technology shortfalls and stuff, so you may be able to do an incident-based model in that scenario.

CHAIRMAN MELIUS: Other comments or questions? Any Board Members on the telephone have comments or questions at this point?

MEMBER FIELD: This is Bill. I don't have any questions. A lot of this is, has stayed relatively the same over the past year or so, hasn't it?

DR. NETON: What was that, Bill? I'm sorry.

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MEMBER FIELD: I said, most of this is relatively constant. There's not a whole lot new here, is there?

DR. NETON: There's a whole lot new in the sense that it's in writing now.

MEMBER FIELD: Okay. But this is the same concept that you had discussed previously?

DR. NETON: Yes, yes. They've crystallized a little more, and there's some more caveats in there, and maybe some scenarios that I wake up at night and think about --

MEMBER FIELD: Yes.

DR. NETON: -- and put in there, but in general, it's the same.

MEMBER FIELD: But it's nice having it down on paper that we can provide comments. Thanks.

DR. NETON: Yes, okay.

CHAIRMAN MELIUS: Yes. I think the -- I mean, the example of, evolution has been on some of the stratification issues between

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incidence-based and routine monitoring and, you know, when is that appropriate, when do they need to be separated and so forth.

So, but there's been some changes. But it's, again, getting it down in writing, I think, is what's -- you know, what, as Jim said, is what's most important.

DR. NETON: I think what's changed, most significantly, is if you recall early on, we were trying to come to grips with some practical level of significance and difference between models.

We were kind of approaching it from the backwards situation where we were looking at this 100 millirem dose, and then I proposed this model of using the full distribution versus the 95th.

That's all sort of by the wayside right now, because frankly, none of it seemed to work. And I like this approach better where you just identify, do you need to stratify, yay

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or nay, and then go ahead and do it if the conditions are such that it need be.

CHAIRMAN MELIUS: Any other Board Member comments and -- so the, I mean, I think the one thing I'd also mention is that, in terms of the, what do you call it, the rule of 30 or whatever is, it's also, I think we have to remember that when we have a situation where there's very low exposures, residual periods and so forth, I think those you sort of approach differently than you would a situation where you may have very high exposures within a site.

And so that has to be taken into account also. I think what -- as Jim was saying, we were -- we tried -- we started dealing with this on the sort of statistical level, so the problem we got hung up on was just, you know, and some of what we did on sufficient accuracy, what was helpful for us to understand, but it's just very hard to -- it gets very complicated.

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And I'm not sure that the situations are comparable enough at each site that a very statistical approach is going to be practical. I think that's sort of what we found. Every site is different enough, has a different set of records.

And I think the other thing we have to remember, take into account, is that even if sort of theoretically we can identify, stratify groups and so forth, we got to be able to place people within those strata. And very often the records just don't exist.

You know, employment records aren't such that you can tell. And, I mean, that's sort of something we need to take into account. But that's often been the problem we've had with a number of the other coworker models in the past.

They're fine, theoretically, and in general the data supports it, but when you go to then apply it to individuals, it just, the

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information isn't there. And I think we have to think -- I mean, it doesn't say we can't apply some of these in those situations, but we have to really think carefully how we do that. Yes, Dave?

MEMBER RICHARDSON: You know, the rule of 30 is sort of, I think it's -- the way that the approach is developed, I think it makes sense. And on the other hand you could argue the opposite, that as the data become more finely stratified you may not need as many observations.

And it seems like they -- I guess the extreme would be if you imagined two workers set out to do a task and only one of them was monitored. And that would be sometimes how you would describe coworker settings, that there was --

DR. NETON: Yes, for example, six workers. Yes.

MEMBER RICHARDSON: Right, where

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it's -- there was a lot of knowledge that there was similarity of the task and the work experience and the environment that they were going into, and you would issue one badged. So you wouldn't say you need 30 workers to be badged to, you know, to kind of protect or monitor the 31st.

You might have -- they might work as a team, and then have one observation measured and the other one -- right. But I -- so I mean, it's -- but the problem, as you're saying is, that would be the extreme, where you had a lot of knowledge to place those people into the same time and area and task. You wouldn't need very much information to be sort of confident about understanding their exposure.

And I guess what we're describing is we're using coworker monitoring, not the way that some people do in radiation protection, that would issue a badge to a group of workers who are going to be doing things, but turning

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the world on its head.

MEMBER ANDERSON: Like we did yesterday, when we had one badge for five slots. But then we loaned our badges --

CHAIRMAN MELIUS: I -- okay. I wasn't aware of that.

MEMBER ANDERSON: So we have personal experience.

DR. NETON: In our part we call that cohort badging.

CHAIRMAN MELIUS: Yes. I think the other factor that I have some trouble thinking how -- I'm not sure how important it always is, but I think we sort of have to take into account is what is the gap we're trying to fill and how much data do we have?

If we have really good data for every year but one, and, you know, it's a sort of a production workforce that's, you know, going to be there for a long period of time that we're looking at, I think we're more comfortable with

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a coworker model and what data that that's based on.

If we have, you know, we're missing lots of years on everybody, and a very small percentage of the workforce has been monitored, and there's a lot of variability, and there's high exposures and so forth, then I think we have to have more stringent criteria in terms of whether we -- how good is the coworker model, because, you know, to do that.

And in some ways it's a statistical judgment, but I just don't think we can get there very easily. I think it's more going to be judgment, but we need to be able to look at that. Andy?

MEMBER ANDERSON: Yes, I was just looking at this and thinking in terms of, do you see us being able to, in a general sense, convert this into a bit of a checklist?

I mean, when we get your SEC and you say, well, you know, here's how much data there

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is there, and we believe we can only do this, you know, we're denying an SEC because we can use a coworker model, then we have to start to try to qualify -- is that useful?

Can you convert this, in a general sense, into, you know, a checklist like we've done with some of the -- I mean, you can't, I think --

DR. NETON: Yes. I would certainly entertain any suggestions to do so.

MEMBER ANDERSON: Well, that's -- I don't know. I was -- but that's what I was talking to the --

DR. NETON: But yes, we talked about that earlier, you know, a table or something like that to -- and that's possible. I mean, it would be a general checklist because again, we're not trying to cover this --

MEMBER ANDERSON: A descriptive checklist, yes --

DR. NETON: We're not trying to cover

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this --

MEMBER ANDERSON: -- like the 30-number or what are the characteristics that you're hoping to fill here, rather than just saying we're going to -- and here's the model we're going to use, and we -- I mean, that's --

DR. NETON: Yes. It could be fairly easily converted to some sort of -- but it wouldn't be perfect, because again, it's a --

MEMBER ANDERSON: No, no. It wouldn't be --

DR. NETON: -- qualitative judgment.

MEMBER ANDERSON: -- you have to meet these, but it would be helpful as a descriptive thing when we're looking at these, to say you're going to -- I was looking at and I'm trying to -- I don't know if I could do that, but I'm asking you to do it.

DR. NETON: I think I -- it could be done.

MEMBER ANDERSON: Yes, okay.

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MEMBER ZIEMER: Yes, I don't think it's quite a checklist but we -- these are criteria, and I think we would expect NIOSH and SC&A both to look at data sets, and examine how each of these issues was addressed for a given situation or a given site. So if that's a checklist, it --

MEMBER ANDERSON: Well, that's what I meant.

DR. NETON: Follow -- yes.

MEMBER ZIEMER: We have other criteria that we use, like the surrogate data issue. And it's not quite a checklist, but you have to say, how did you evaluate against these criteria?

DR. NETON: That's true.

MEMBER ZIEMER: And then we have to examine whether or not we feel that that's met some sort of bar or a test level, you know.

DR. NETON: Not unlike what we do for surrogate data. I mean, there are four or five

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criteria, and we drill down through them and say, okay, this -- is this met, is this met, is that met, is --

MEMBER ANDERSON: I think your categories here fit that --

DR. NETON: They do.

MEMBER ANDERSON: -- process. So I don't think you're missing anything.

CHAIRMAN MELIUS: Okay. The heartburn question, or the one that'll keep Jim up at night, and Stu, is, well, we've come up with these criteria, guidelines, whatever we want to call them, what does this say about past coworker data sets?

DR. NETON: I've already thought about that.

CHAIRMAN MELIUS: Yes. And I think -- and again, it's -- you know, is it worth -- you know, when should we go back? Do we need to go back and, you know -- can we then -- because I suspect, as I'm pretty sure that a lot

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of these, you know, criteria or guidelines, whatever you want to call them, have been taken into account.

We may not have all -- may have been not documented to us, or the documentation may not be as explicit as we thought, but -- or might want now, but it's, it may still be there, and they may not. But we've changed, you know, the criteria on stratification, so to speak.

That may be more of an issue, but it may not. I don't know. I don't know what situations -- again, because often some of the practical issues about a site, particularly would the employment records support a differentiation between different types of workers, you know, may, you know, sort of have obviated stratification.

So, and they may already be SECs or whatever. But I think we can cross that bridge, and Jim will have a few sleepless nights.

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DR. NETON: That's one thing that I've been thinking about. You just mentioned it, Dr. Melius, is that many of the coworker models that we developed early on, the sites have become SECs for very large portions of where the models apply.

CHAIRMAN MELIUS: Yes.

DR. NETON: And then what does that mean in terms of sufficient accuracy, you know, that kind of thing for the non-presumptive cancers that we're reconstructing. I'm wrestling with that right now.

CHAIRMAN MELIUS: Yes, yes.

MEMBER MUNN: But it's still unlikely that there are any salient criteria that haven't been a part of the conversation. The fact that they aren't a part of our written documentation doesn't mean that they haven't been considered and addressed in some way. But -- yes, we still don't know what they are.

CHAIRMAN MELIUS: Yes. Yes, that's

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what I was saying. I think the, maybe the more relevant question is have they been consistently applied.

MEMBER MUNN: Yes.

CHAIRMAN MELIUS: And I think that's -- I think that's what we found, for example, I think, with surrogate data, was that we -- and even with the SEC evaluations, we -- there was nothing new in either of those documents, in terms of what had been done, but there were, you know, a few sites that, where those that there had been, you know, some pretty significant inconsistencies in our approach.

And some of that's just time. Some of it's, you know, information, what was available at one time and not at another and, you know, over the 102 meetings, we -- the Advisory Board's decision-making has certainly changed or evolved. Evolved, that's a better word for it.

MEMBER MUNN: Absolutely.

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CHAIRMAN MELIUS: Okay. Any other questions, comments? Okay. I saw you sitting on the edge of your seat there. We're in -- we've been so much trouble recently or something that we have two lawyers here today to keep an eye on us.

MS. LIN: So if any Board Member felt compelled to submit a written comment addressing this document or this, the application of it, please coordinate with Ted Katz so we can preserve the Board's deliberative process.

CHAIRMAN MELIUS: Well, that was easy. Yes. We've got a few minutes. Any items we can do, or work items we can do quickly? Meeting times?

MR. KATZ: Meeting times? We can do that. Yes, sir. So, let me just remind you all of what we have already scheduled. Yes, I'm sorry. Thank you.

So what we already have scheduled is,

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looking forward, January 6th, we have a teleconference. Then March 25th and 26th we have a meeting, place to be determined today.

And the next day, 27th -- I mean, NIOSH has said there may be a lot on the plate for that meeting, so that actually is -- that's a Wednesday and Thursday, 25th and 26th of March. I don't know whether, if we need to eat into, halfway into Friday, that might be possible for Board Members. We didn't really check about that at the time, but we'll see.

Then the next teleconference is June 9th, and then the next Board meeting July 23rd to 24th. So that's what we have --

MEMBER ANDERSON: What was your first meeting?

MR. KATZ: I'm sorry. January 6th is a teleconference, 11 a.m.

CHAIRMAN MELIUS: And the second teleconference?

MR. KATZ: The second is June 9th.

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MEMBER ANDERSON: Okay.

MEMBER VALERIO: And July is the 23rd and 24th?

MR. KATZ: July 24th -- right, for now, yes, 23rd through 24th, that's a Thursday, Friday, I believe, so that's as far as it would go. So --

CHAIRMAN MELIUS: And both of those -- the next two in-person Board meetings we have to decide on a location that --

MEMBER ANDERSON: Exactly, yes.

MR. KATZ: Right. Well, for the one in March, we should decide today.

CHAIRMAN MELIUS: Yes, definitely.

MR. KATZ: Right. So we talked about Richland is a possibility, for Hanford. I mean, the other two sites that come to mind, well at least one that may be right, I'm not sure. I'm always a little unsure, but I thought -- last I heard, Rocky Flats might be ready by March. Has that changed?

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MR. RUTHERFORD: I don't know that it's changed. We have four or five issues that are open, and we have papers out on three of those, with another paper coming out shortly, probably within a week or two weeks.

And the only issue that's outstanding is this data falsification issue, which we're waiting for formal release of documents by the FBI. And that's kind of up in the air, that one, you know, because I just don't know, you know, that's another agency, and how quickly they're going to get those released, so.

MR. KATZ: Okay. But then it sounds like there's plenty of -- be plenty of material for a Work Group meeting and --

MR. RUTHERFORD: Oh yes.

MR. KATZ: -- without that, and depending on what comes of that, there may be good fodder for the Board meeting.

And so anyway, we have those two. Kansas City, my sense is that that's -- there's

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still a lot of work ongoing and that's not going to be ready by then.

CHAIRMAN MELIUS: Hanford, my understanding is there's active data that has been gathered, and is in process, and there's potential for Board action.

MR. RUTHERFORD: Yes. Yes, in fact there's been interviews, data captured, and there's another data capture actually scheduled right now for early December. And there is an open issue that could drive some action for the March meeting.

MR. KATZ: So we have one bid from Brad for Hanford. Any reason -- anyone, any reason not to go to Richland?

We'll need to settle it today, because the process of making arrangements, that's got to get going.

CHAIRMAN MELIUS: Well, let's talk, throw Rocky into that. What I'm not sure about is how connected these issues are, in terms of

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decision-making. The Hanford one, the one I know about, is -- should be relatively straightforward.

MEMBER FIELD: Can your hear all that?

CHAIRMAN MELIUS: And it's a single issue, but the Rocky ones, I'm not sure where the data falls, but how that ties in to some of the other issues and what will be --

MR. RUTHERFORD: Well if you -- yes. If you look at the years associated with the potential falsification, I mean, it lines up with the years that we're looking at with other issues.

CHAIRMAN MELIUS: Oh, okay.

MR. RUTHERFORD: So, I mean, they're all roughly in the same time period that we're looking at, you know.

CHAIRMAN MELIUS: And I think the other, maybe another consideration is that where we hold the meeting doesn't preclude the

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Board taking action on the site. I think it's as much, do we need -- where have we been recently and where do we -- where would we, might benefit from further input.

We haven't been -- I think we've been to Rocky a lot more recently than Hanford.

MR. KATZ: Yes. It's been a few years for Hanford.

CHAIRMAN MELIUS: Yes. Since we've visited Wanda there.

MR. KATZ: Yes. And Josie, yes.

CHAIRMAN MELIUS: And I'm not sure which one is easier to get to at the end of March, or get out of, I guess is the --

MR. KATZ: Well, Wanda made assurances, previously, that Hanford would be fine, Richland would be fine in March.

CHAIRMAN MELIUS: Yes, well Brad claims it never snows in Idaho Falls either. Hanford? Yes, okay. Sounds good.

MR. KATZ: Okay. Let's do that,

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then. Very good. Thanks. That's helpful. So we've settled that. Now, just for scheduling further out, so I have, for the next teleconference, again, the last meeting now scheduled, the latest meeting is July 23rd through 24th.

We need a teleconference, and ballpark, you know, timing for that would be September 21st, that week. But it can fall on either side of that week, too. September 21st is about the right timing. So look at that week first. If that week's not good, then we can go before or after, too.

MEMBER MUNN: I suggest the previous week, the week of the 14th.

MR. KATZ: You're not available the week of the 21st, is that what you're saying, Wanda?

MEMBER MUNN: No, I could do it. Just September, but it seems the preceding week might be a little easier.

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CHAIRMAN MELIUS: Okay. Anybody have problems with either week, I guess is -- David, do you have issues with --

MEMBER KOTELCHUCK: No, I was looking --

CHAIRMAN MELIUS: The other David, but you should --

MEMBER KOTELCHUCK: Oh, excuse me.

CHAIRMAN MELIUS: Yes, but --

MEMBER KOTELCHUCK: I was looking at my -- the -- I was looking at Rosh Hashanah and Yom Kippur for some of us.

CHAIRMAN MELIUS: Yes, that's the week of the 14th. I've got it on my calendar.

MEMBER KOTELCHUCK: Thirteenth, 14th is Rosh Hashanah, so that Yom Kippur would occur, if somebody will help me --

MEMBER MUNN: On the 23rd.

MEMBER KOTELCHUCK: Pardon?

MEMBER MUNN: On the 22nd.

CHAIRMAN MELIUS: 22nd, 23rd.

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MEMBER KOTELCHUCK: Oh good. Okay.

MEMBER MUNN: One of the reasons I was suggesting the preceding week.

MEMBER KOTELCHUCK: 22nd, 23rd, yes there it is.

MR. KATZ: Okay. So recall, this just a teleconference. It's just that 11 a.m. call.

MEMBER KOTELCHUCK: Right. So Monday would certainly not -- Monday the 21st is not --

CHAIRMAN MELIUS: Yes.

MR. KATZ: Yes.

MEMBER MUNN: Yes, it is.

MR. KATZ: Yes. It's just a call, and it's -- we can either do it Wednesday, Monday, whatever.

MEMBER KOTELCHUCK: That's good.

MEMBER MUNN: Yes. Wednesday would be September 16th, the preceding day.

MR. KATZ: Well, the week of -- okay.

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MEMBER KOTELCHUCK: That would work, the 16th.

MR. KATZ: So is that good, the 16th?

MEMBER RICHARDSON: The 16th is not good for me.

MR. KATZ: No, no, not good. But what about the --

MEMBER RICHARDSON: I can do anything else, but --

MR. KATZ: -- following week, the 23rd?

MEMBER MUNN: 23rd?

MR. KATZ: Is that a --

CHAIRMAN MELIUS: Of September?

MR. KATZ: Yes. Teleconference. Is that good with everybody? Dave?

MEMBER KOTELCHUCK: One second. Looks good.

MR. KATZ: Looks good, he says.

CHAIRMAN MELIUS: Okay.

MR. KATZ: Okay. So let's do that.

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Bill Field, is that okay with you, too?

MEMBER FIELD: Yes, that works fine. Thanks.

MEMBER KOTELCHUCK: The usual time?

MR. KATZ: Yes, 11 a.m. Eastern time.

MEMBER KOTELCHUCK: Okay, so that's September 23rd, 11 a.m.

MR. KATZ: Okay. And then for the next in-person meeting, the right ballpark is a year from now, November 2nd, the week of the 2nd, the 9th, the 16th, that's the ballpark. Get it in before Thanksgiving for sure.

MEMBER ANDERSON: Not the first week.

MR. KATZ: Not the first week. So the week of the 9th, maybe?

CHAIRMAN MELIUS: We've got Veteran's day in the middle of that week, Wednesday.

MR. KATZ: Of the 9th?

CHAIRMAN MELIUS: Yes.

MR. KATZ: It's on a Wednesday?

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CHAIRMAN MELIUS: It's the 11th, yes. It's always on the 11th.

MR. KATZ: Always on -- okay.

CHAIRMAN MELIUS: It's one of the holidays we actually support on the actual day.

MR. KATZ: The actual day, right, regardless of what day of the week.

CHAIRMAN MELIUS: There's the 4th, and Christmas and a few others, but --

MR. KATZ: What about the week of the 16th?

MEMBER ANDERSON: Of November?

MR. KATZ: Yes.

MEMBER ANDERSON: That would work better for me. Towards the end of that week.

CHAIRMAN MELIUS: So 18th, 19th or, I mean --

MEMBER MUNN: Wednesday and Thursday.

CHAIRMAN MELIUS: Wednesday, Thursday or --

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MEMBER MUNN: Eighteenth and 19th, yes, that would be --

MR. KATZ: Eighteen, 19 are we saying? Okay. And Bill, on the phone? November 18th --

MEMBER FIELD: That sounds good.

MR. KATZ: Okay, super.

MEMBER KOTELCHUCK: Now this is the -- are we talking about --

MR. KATZ: This is an in-person meeting, November 18th and 19th of next year. Okay. Okay, that takes care of scheduling.

CHAIRMAN MELIUS: It's also the September, you know, may be, I mean -- not to predict anything politically, or not to let politics intrude on our efforts. Okay.

MEMBER KOTELCHUCK: This meeting's going to be done for --

CHAIRMAN MELIUS: Absolutely. Absolutely. It's -- that's -- I mean, will last for a whole fiscal year. I mean, I'll be

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meeting through the following September before we get out of there.

MR. KATZ: Okay. That's -- we've run out of time.

CHAIRMAN MELIUS: When I was in NIOSH, I had somebody who was trying to get out to the crab processing places out in Kodiak, and I think spent about a month in Alaska trying to do the -- make the trip.

Okay, why don't we take a break? A reminder, we do have, if you have nothing more to do after you eat your lunch, you can look at the public comments from the last meeting, because we'll be going over those.

And then also prepare your Work Group report, and any -- or reports, and Subcommittee reports, and also you might want to look at both the NIOSH schedule for reports that they -- that went around from what, with what Ted sent out.

And then SC&A sent out their updated scheduling and so forth as a separate email,

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that I believe everybody's --

MR. KATZ: Right.

CHAIRMAN MELIUS: -- gotten. So we can try to be prepared. And -- but the highlight of the afternoon, get all prepared, the highlight will be the first -- at 1:30, so be on time, LaVon Rutherford will give us his SEC update.

MEMBER MUNN: Cliffhanger.

CHAIRMAN MELIUS: Cliffhanger, lots of questions, should be a very volatile session so be prepared. You don't want to miss it.

MR. KATZ: Sharpen your knives.

(Whereupon, the above-entitled matter went off the record at 11:56 a.m. and resumed at 1:36 p.m.)

CHAIRMAN MELIUS: Welcome back and we'll now move on with our agenda. Let me check on people on the line. Okay.

MR. KATZ: I'm getting to you.

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CHAIRMAN MELIUS: I'm only doing it, he said like it was good advice. And I'll now let the Designated Federal Official do his designated duties.

MR. KATZ: Thank you. Thank you very much. Just checking, first, roll call. I know who's in the room. Everyone's in the room who was here before. But on the line, Bill, are you with us again?

DR. FIELD: I'm present --

MR. KATZ: Dr. Bill?

DR. FIELD: -- and attending.

MR. KATZ: Super. And we were missing before Mr. Griffin, is he still missing? Is he on the line? Okay. And how about Dr. Poston? Okay. So that takes care for roll call then.

CHAIRMAN MELIUS: Is Dr. Lockey here?

MR. KATZ: Lockey, we knew.

CHAIRMAN MELIUS: Yes, but if you do the roll call --

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MR. KATZ: Okay. And Dr. Lockey, are you on the line?

No Dr. Lockey either.

CHAIRMAN MELIUS: Okay.

MR. KATZ: And let me just a couple other things. Remind folks who've joined us on the phone to mute your phones. Press *6 if you don't have a mute button, that'll mute your phone. And press *6 again to take it off of mute. But please keep it on mute except when you're addressing the group.

CHAIRMAN MELIUS: Public comment.

MR. KATZ: And one other thing. Exactly, public comment. Thank you, Dr. Melius. We have a public comment session that begins at 4:30 and goes at least until 5:30 or, well, until 5:30 or until we run out of public comments. That comes before.

So for people who've joined us in the room, there's a sign-up book outside. If you want to make public comment during the public

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comment session, please sign the book.

For people on the line, you don't need to sign in. We will get to folks on the line after we've gotten through everyone who's in the room here during public comment session. And that's it. Thank you. Dr. Melius.

CHAIRMAN MELIUS: Yes. And just one more thing on public comment. I'm not sure we'll do it today, but there will be a presentation on Santa Susana at 4:00 and immediately following that presentation we will start the public comment period. So if it starts a little early, that would be fine.

MR. KATZ: Yes.

CHAIRMAN MELIUS: Yes. Good. And now I'd like to introduce the highlight of the meeting, the SEC petitions status update. LaVon Rutherford, I believe it is.

MR. KATZ: Yes.

MR. RUTHERFORD: Thank you. It's nice to be the highlight, that's for sure. I'm

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going to give you a Special Exposure Cohort update and then I'm going to take all the drillings and the questions that you guys are going to have afterwards.

All right. The purpose, obviously, as we do the -- I'm usually loud enough anyway, but that's okay. We do this at every Advisory Board meeting. We give the update of upcoming SEC petitions and existing petitions, petitions that are in different phases. This gives the Board updates and allows them to prepare Work Group meetings and other Advisory Board meetings.

Okay. As of October 28th, we had a little bit of an increase here in the number of petitions we received. We're up to 222. We have four petitions in qualification process.

If you recognize that we went quite some time without receiving a petition and here recently we've gotten, I think, about six in the last four or five months. And you can see the

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status on the existing petitions. We have two that are in the evaluation process right now.

The petitions that are in qualification: Westinghouse Electric Corporation, Bloomfield -- this is for the residual period at Westinghouse. It is going to qualify. I will let you know that. And there is some, you know, we have found some issues with, not the petition, but in our early reviews of documentation, we actually found indication there may have been work involved at Westinghouse Electric Corporation. During this residual period they did some work for Fernald.

And so we have actually provided that documentation to the Department of Labor so they can evaluate if those actually should be covered operational years instead of residual years.

SEC 220 is for Y-12. This is 1944 to '45. You guys, I think everybody knows that we

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already have an SEC for 1944 and '45 period. Therefore, it's highly unlikely this petition's going to qualify. The only way this petition would qualify is if they presented evidence that incidents such that, you know, exposure -- I mean, so -- I can't think of the word. What's the right word I'm looking for? Presence. There. It's such a heavy word, presence. If we had a incident, such as criticality or something like that, that ultimately we could move from the 250 days to presence. They haven't provided that on this one, so it's unlikely that it would qualify.

Lawrence Livermore National Lab, this is the post-SEC years at Lawrence Livermore. This is in the early stages of qualification, but it does look like it will qualify.

And then we just recently got a Grand Junction Operations Office. We're just now going through that. Most of you will remember we're already evaluating those years at this

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time anyway.

Two petitions that have qualified and we're moving forward with the evaluation: Dow Chemical Corporation. This is actually here in California, 1947 to '57. We are almost finished with this evaluation at this time. We did get slowed up a little bit with some funding issues at OSTI, you know, to look at some of the documents that Dow had there.

But this Evaluation Report should be out within the next month or two. Anyway, it says January 2015, but that's -- you know, hopefully we'll get those documents sooner than that.

Idaho National Laboratory, this evaluation's been ongoing. There's been a lot of work going on both with the Site Profile work and concurrently the SEC evaluation that's going on at the same time. We expect to complete that evaluation by February 2015. There's still, obviously, going to be a lot of work going on with that one.

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And then Kansas City Plant, we presented that some time ago. The Board has been reviewing that, and the Board Work Group and SC&A. There's been a lot of activity with that one was well: interviews, on-sites and data captures and such.

We have a number of sites that have portions of their petition evaluation that are open. They still need to be resolved. Fernald, we have 1984 to 1989. I think they're getting very close to closing things out at Fernald.

Grand Junction's Operations Office, the '75 to 2006. This one will be presented. We are going to present an addendum or revision depending on how that lays out at the March Board meeting.

Hanford, as mentioned earlier in the meeting, there's been a lot of work going on with the '84 to '90 period at Hanford. And we hope to be able to take some action on that one

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as well at the March meeting.

Los Alamos National Lab, this one's been a struggle. We really tried to -- the post-1994 period, '95 period, we've taken an approach of this is a 10 CFR 835 era, and we've taken the approach to see how the site is implementing 10 CFR 835. We're struggling a little bit getting the documentation from them on that. We went back and forth and we decided to take a project or something that was going on during that period, maybe an exotic, and look how they were complying with 835 just to see that, you know, that they were following 835 and that dose reconstruction would be feasible.

We did just recently get some information from them and hopefully we'll be able to move forward with that.

Rocky Flats Plant, as I mentioned earlier today, we have roughly five items, open issues. And of those, we've completed papers on three. Another paper will be out very

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shortly and we should be able to have a Work Group meeting. After SC&A's had a period of time to review that neptunium report, we ought to be able to have a Work Group meeting.

Sandia National Lab-Albuquerque, this, again, we're looking at the 10 CFR 835 implementation at the site. It has slipped somewhat, mainly because of the priorities that we have with other activities. Obviously, new SEC petition evaluations, because of the 180 days, are going to take precedence. And so certain things, we adjust priorities based on that, based on what the Board is currently really wanting or looking at. And so the post-'94 period at Sandia has slipped a little bit.

Santa Susana Field Laboratory, I think I will let Dr. Hughes handle this one later on.

And Savannah River Site, continues to be a lot of activity at Savannah River. We were

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slowed down considerably because of classification reviews on documents. I think we've got that issue -- or at least we've got a path forward worked out. And we should get some of the documents and things released here soon so we can start making some progress there.

St. Louis Airport Storage Site, this one's kind of in limbo, mainly because we presented our evaluation. And maybe what we ought to do is, you know, we indicated the '72-'73 period, 1984-'98 period, we felt dose reconstruction was feasible.

It might be appropriate at the next Board meeting or, you know, if there's too much on the Board meeting, maybe during the Board conference call, that I provide a status update, you know, and basically get things moving on that period again.

And potential 83.14s, again, these have been on the plate for a while, mainly waiting on a litmus claim that we could move

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them forward. There's really no claims that are being negatively affected by this, us waiting, because there are no claims, you know, in that period. 1945 to 1948, that was the old Z Division at LANL. It's now Sandia-Albuquerque. And as soon as we get a litmus claim, we'll move that forward.

The Dayton Project was a facility designation change so we had a limbo period of nine months. However, currently all the claims are covered by another, existing SEC, so we have no litmus claims there as well. And that's it. Questions?

CHAIRMAN MELIUS: Yeah, Paul.

MEMBER ZIEMER: LaVon, on St. Louis, can you remind us when the original petition came to us and what action did we take?

MR. RUTHERFORD: Yeah, I can do a brief reminder on that because I don't --

MEMBER ZIEMER: I don't need all the details but --

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MR. RUTHERFORD: I was the one who presented it, so I know a lot of it. That actually -- it's probably been, I don't know, four or five years ago that it was presented originally. We recommended adding a Class during the operational period. There was a period of time, basically, the site was a storage site. They had some of the K-65 materials, the African ores that were stored out there for a very brief time. Some worker was doing some raffinates. We ultimately added a Class for that operational period.

Then there went to a stagnant period where it was basically closed down, and then they went through a clean-up period in the 1972-'73, I think, timeframe. And then there is additional clean-up work that went on later on, if I remember correctly. That may not be totally, you know, accurate, but it's generally in that manner.

And what we found was, during the

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'72-'73 time period, or during, you know, those later years, we had additional information. We had monitoring data that allowed us to dose reconstruction. But there was never a formal recommendation by the Board on that period.

MEMBER ZIEMER: Okay. That was really what my question was. Maybe Dr. Melius remembers. So it was that latter period, and did we send it back for some review or did we do anything?

MR. RUTHERFORD: No.

MEMBER ZIEMER: We didn't take action?

MR. RUTHERFORD: Yeah, there was a period of time, you know, that we didn't take action on some of the residual periods and things like that. And this was kind of a residual period. And there was never really a follow-on on that one.

CHAIRMAN MELIUS: What's a Akind of a residual period@?

MR. RUTHERFORD: Well, when I say

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Akind of a residual period,@ I mean, because there was some remediation work that went on in that period as well, in addition to that residual period.

CHAIRMAN MELIUS: Okay. And have we had SC&A review that?

MR. RUTHERFORD: I do not believe so.

CHAIRMAN MELIUS: Okay. So, maybe it's not appropriate to do it today, but if you think you have enough information, maybe we can get this moving ahead.

MR. RUTHERFORD: Okay.

CHAIRMAN MELIUS: Is there enough information in the Evaluation Report to form the basis for evaluating the residual period, or is there additional information that's not in the report?

MR. RUTHERFORD: No, I think it's all there. I think. And all the supporting documents are referenced and such.

CHAIRMAN MELIUS: Okay.

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MR. RUTHERFORD: If you would like, I could put --

MEMBER ZIEMER: Well, I was wondering if there was an actual recommendation from NIOSH and if we just chose not to act. And did we specifically choose not to act?

MR. KATZ: I think we just covered --

MEMBER ZIEMER: Or did we just forget to act or what happened? I just don't remember, but I can attribute that to my age. But somebody needs to know what happened.

CHAIRMAN MELIUS: Well, LaVon is fairly young.

MEMBER ZIEMER: I don't need to know today, but I'd like a follow up on --

CHAIRMAN MELIUS: When he was a high school senior, he went to the same football games I was going to in Cincinnati, in '83.

(Laughter.)

MR. RUTHERFORD: What I can do is provide the Board and SC&A, basically, a

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summary of, you know, where we were when and, you know, the dates and also point to --

MR. KATZ: The transcript.

MR. RUTHERFORD: -- the documents and such.

MR. KATZ: Well, and the transcript from the Board meeting.

MR. RUTHERFORD: Oh yes, exactly.

MR. KATZ: But basically the transcript -- so it wasn't set aside to be addressed later, but the Board only specifically took the action that was being recommended, which was to add the Class for the operational period. And it just wasn't spoken to.

MR. RUTHERFORD: Right. Okay.

MEMBER ZIEMER: But there was another recommendation. That's --

MR. KATZ: Well, there was a recommendation, but it wasn't spoken to, is what I'm saying. The Board didn't speak to it.

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CHAIRMAN MELIUS: So, what I would suggest is that for the Board call, the next call, can you put together a short presentation on the residual period?

MR. RUTHERFORD: Yes, I can.

CHAIRMAN MELIUS: And then we'll do that and we can either take action at the Board call or we can refer it on for additional --

MR. RUTHERFORD: Yes.

CHAIRMAN MELIUS: We can either accept the recommendation or we can refer it on for further review. And I think that would probably be a better way of doing it. Does everybody agree?

MR. RUTHERFORD: Yes.

MEMBER ZIEMER: Thank you.

CHAIRMAN MELIUS: Okay. Yes, thank you on that.

Other questions for LaVon? So LaVon, could you just sort of go over what is going to be available for the March meetings?

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MR. RUTHERFORD: Yes.

CHAIRMAN MELIUS: And I hope the transcriber --

MR. RUTHERFORD: Can you pull that back up, please?

CHAIRMAN MELIUS: -- listens very carefully here and keeps track of this.

MR. RUTHERFORD: I'm waiting for my presentation to come back up again so I can go back. No, actually, we will be presenting Dow Chemical Walnut Creek Petition Evaluation Report. We will plan to present the Idaho National Lab Evaluation Report. The Grand Junction Operations Office, we plan to present that as well.

Then I expect action to be taken on Hanford. Some kind of action at least. I believe so, anyway.

There potentially could be action on Rocky Flats, just depends on the release of documents and where the Work Group goes on that

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one. So there's four or five, anyway.

CHAIRMAN MELIUS: Okay. What is the timing on Grand Junction?

MR. RUTHERFORD: When will the addendum or the evaluation revision, whichever way we end up going, when will that be out?

CHAIRMAN MELIUS: Yeah.

MR. RUTHERFORD: January/February timeframe.

CHAIRMAN MELIUS: Okay.

MR. RUTHERFORD: That --

CHAIRMAN MELIUS: Go ahead.

MR. RUTHERFORD: I was going to say, that report actually would've been out earlier, but in our additional reviews we found some thorium sources that were not previously recognized that we need to look at that.

CHAIRMAN MELIUS: I'm just trying to determine are there any of these that are straightforward enough that would be done in time for our January conference call?

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MR. RUTHERFORD: Well, I'll see if Jim agrees with me. I think Dow Walnut Creek would be pretty -- yeah, I think Dow Walnut Creek would be pretty straightforward enough. I think it'll be ready.

CHAIRMAN MELIUS: Well, when? Because our call is early in January. That's --

MR. KATZ: Very early in January.

CHAIRMAN MELIUS: Yes. So it would have to be before the holidays.

MR. RUTHERFORD: No, that's not going to work.

MR. KATZ: Yeah, I don't think so.

CHAIRMAN MELIUS: Okay. That's fine. Just checking. So, Dow, Idaho, Grand Junction and Hanford, okay.

Any other questions for LaVon, here, now that he's got us confused? Okay. You're off the hook for now.

Okay. We now have our Board work

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session. And we've completed part of it. So we will start with the public comment session from our last Board meeting.

And you all should have gotten two documents, one is the summary spreadsheet and the other is the transcripts that sort of back that up and provide a little bit more detail on that.

And I will go through this relatively briefly, but feel free to interrupt me or if you have questions and so forth. There were a number of first comments had to do with Simonds Saw and Steel. And there was some questions about the basis for the dose reconstruction and the follow-up clean-up there. Those have been addressed and responded to.

MR. KATZ: Which document?

CHAIRMAN MELIUS: It's a spreadsheet.

MR. KATZ: A spreadsheet, Excel.

CHAIRMAN MELIUS: And it's got a

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funny name to it. Yes, what is BPCP? Board --

MR. KATZ: Board public comment session, or whatever the -- comment presentation.

MEMBER ZIEMER: Oh, it's a spreadsheet. I've got it.

CHAIRMAN MELIUS: Okay. Then we have a set of three comments regarding the Santa Susana site. And those have all been addressed, including some follow-up I think we=ll probably hear about a little bit later today.

There's some questions on the INL site and comments from one of the people at that meeting. And, again, I think these are all straightforward in terms of being addressed.

There's actually a whole series of comments on INL that we heard, which were, as I recall, very helpful in terms of further background on that site. And we'll probably be talking more about it. It was quite a long

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comment, as you may remember.

Okay. Then we have some general comments, some comments on Hooker, General Steel Industries and on Dow Madison. And these are being followed up on or in the process of being followed up on.

Some comments on the Blockson site, which was more of an issue having to do with DOL and sort of a facility designation. There was another comment on the Blockson site and, again, sort of a what-if, procedural issue, which, again, I think was addressed actually right at the meeting by LaVon.

And there was some additional follow-up reported from the April Board meeting. It was something new. You're adding Boulder, Ted?

MR. KATZ: It was probably commented on that we would follow-up on that.

CHAIRMAN MELIUS: Oh, okay. Okay. That's the first I've seen. Longer term

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follow-up. But, again, there was a follow-up to some comments made at the April Board meeting and a conference call and NIOSH and ORAU had followed up and addressed that.

So any Board Members questions or comments on that? I think the level of documentation's good and -- okay. I don=t think we need any further action on that.

Now we'll move onto Subcommittee and Work Group reports. Josie's not here. The first one I have on my list, which was off the website, is on Brookhaven. I don't think there's much going on there. Henry, do you --

MEMBER ANDERSON: Nothing.

CHAIRMAN MELIUS: Nothing. I think it's --

MEMBER MUNN: -- there's no meeting.

MEMBER ANDERSON: No.

CHAIRMAN MELIUS: Fernald, Brad?

MEMBER CLAWSON: On Fernald, we've really got one outstanding issue that we're

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still working on. That's the thorium. That's in SC&A=s hands. They're supposed to have a paper for us in about a month or so.

CHAIRMAN MELIUS: Okay. And that's on schedule, John?

MR. STIVER: Yes, it is.

CHAIRMAN MELIUS: Okay. Well, Hanford, we've talked about there's some active evaluation going on and data gathering regarding some issues out at Hanford. And we will be doing a follow-up there.

So we can expect a Work Group meeting before the March meeting. And I expect we'll be in a place to take action at the March meeting on that. I think that I understand from both Sam and from talking to Arjun about that. Thank Sam for his communication on that one.

Idaho, Phil?

MEMBER SCHOFIELD: There are --

MR. KATZ: Use the mic, please.

MEMBER SCHOFIELD: Oh, okay. There

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are more worker interviews scheduled in about a week and a half that will hopefully shed a lot more light on some of the areas that we're kind of weak on. And that's really where we stand at this point.

CHAIRMAN MELIUS: Okay. And then we have the SEC Evaluation Report for March, so that will pull that together. Okay. And we've been assured that that's on schedule?

MR. RUTHERFORD: Yes.

CHAIRMAN MELIUS: Okay.

MR. RUTHERFORD: But it's on schedule now. There's always things we can come up with. I would like to point out this is a very unique situation in that we have a Site Profile review going on at the same time that an SEC evaluation is going on. So it has been a coordination trick, I can tell you.

CHAIRMAN MELIUS: Well, and it's also combining two sites and --

MR. RUTHERFORD: Yes.

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CHAIRMAN MELIUS: Yeah, which were initially evaluated as separate sites and now have been combined.

MR. RUTHERFORD: Actually, we have to separate them from -- initially, the idea was that they thought they were going to be able to do it as one petition. It's going to be two petition evaluations. The second petition evaluation will be for the Argonne Lab itself because, regulation-wise, we can only do it by site, you know, for a single site.

So we've got a petitioner providing a second petition for that separate site, which will qualify and we'll move it forward. So I guess I should have mentioned that earlier.

CHAIRMAN MELIUS: Yeah. Yeah.

(Laughter.)

MR. RUTHERFORD: I apologize for that. I forgot about that, I guess.

CHAIRMAN MELIUS: Okay. Got me confused. So what's the timeframe on the

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second petition?

MR. RUTHERFORD: It will not be ready for the March meeting, but it should be shortly thereafter just because we're doing data gathering for both sites.

So, the interviews, the data captures and all are going on concurrently. I just don't think that, from a schedule standpoint, we'll be able to produce both of them at the same time in order for the March meeting.

CHAIRMAN MELIUS: Okay. So, don't go away.

MR. RUTHERFORD: I'm not.

CHAIRMAN MELIUS: Do they overlap? What extent do the petition evaluations overlap, in terms of --

MR. RUTHERFORD: Years, are you talking about or --

CHAIRMAN MELIUS: Years, operations?

MR. RUTHERFORD: Well, it's not clear yet. And this is, again, this is really

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difficult because this facility sits inside of the main facility --

CHAIRMAN MELIUS: Yeah, right.

MR. RUTHERFORD: And also this is very similar to Y-12. If you remember back when we did the early years at Y-12, we had facilities at Y-12 that were turned over to Oak Ridge National Lab and they were doing work with calutrons and cyclotrons.

And, so, in this situation, you've got working going on at Idaho that it's actually being done by the Argonne crew, but at the Idaho facility. So there's a lot of little nuances that are going to make it difficult.

CHAIRMAN MELIUS: Okay. Yeah. I'm also thinking, in terms of the review, where we've essentially combined the Site Profile reviews, and now we're separating them out again.

MR. RUTHERFORD: Yeah, right.

CHAIRMAN MELIUS: Yes. Yes.

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Thank you, LaVon. K-20, gaseous diffusion plants. Phil, anything to report on them?

MEMBER SCHOFIELD: Nothing to report this time. We're kind of a little in the dark here for recently, but we need to get a meeting put together and try and get those closed out if at all possible.

CHAIRMAN MELIUS: Yeah, it's the Site Profile.

MEMBER SCHOFIELD: This is the Site Profile issues.

CHAIRMAN MELIUS: Kansas City, Josie's not here. Brad, do you want to?

MEMBER CLAWSON: Yeah, we've had quite a bit of data capture up through there. Matter of fact, it was just a little while ago. We're proceeding on with the work on it. We're waiting kind of, and it's in NIOSH's court to respond that they have to put their mark in the sand, but we've had some good data capture up

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there and we'll go on from there.

CHAIRMAN MELIUS: Good. Timeframe, do we have one?

MR. RUTHERFORD: Well, unless I'm wrong here, I mean, we provided our evaluation. It's now in the Board and Work Group=s hands to provide a response to the evaluation.

Now, there is a lot of work that's going on to gather interviews and such, but we have committed to now products beyond -- because we haven't gotten anything from SC&A or anything to review at this point.

MEMBER CLAWSON: Okay. Well, I was understood from Pete that since we've dove into this a little bit that there's -- the ER is being revised.

MR. RUTHERFORD: Okay. Pete has not said anything to me about that.

MEMBER CLAWSON: Okay. Well --

MR. RUTHERFORD: And this is the very first time I've ever heard. I'll talk to Pete.

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MEMBER CLAWSON: No, I could be wrong on that but, you know, we're proceeding on, so we're trying to get into where we can get into a Work Group and then move on from there.

CHAIRMAN MELIUS: And does SC&A have anything to add or -- Joe?

MR. FITZGERALD: Yeah, we're still in the issue resolution. I mean, we're identifying issues as we go. There's new issues that weren't covered in the ER that we have now identified.

So, this is a transition period where we've gone from the ER to one of actually the Work Group and SC&A identifying issues, bringing them to the floor. It's being done in conjunction with NIOSH, so there's a lot of interchange. But, how should I put it, the dust hasn't really settled on what the issue slate is, but we're getting close to having that. So we should be able to --

CHAIRMAN MELIUS: And as you're

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identifying issues, are you sort of separating out SEC issues from Site Profile issues?

MR. FITZGERALD: That's, I mean, that's the process. I think, really, in a lot of the research and interviews and everything, we've done a lot. It's directed to sifting out what may have been Site Profile issues earlier in the year to ones that are standing as potential SEC issues.

CHAIRMAN MELIUS: Okay.

MR. FITZGERALD: And that potential part is taking some time to really get a feel for it.

CHAIRMAN MELIUS: And some of the potential ones may not be fully addressed in the SEC Evaluation Reports?

MR. FITZGERALD: That's right. And that means you're doing fundamental research onsite. So this is new stuff that's really being looked at.

CHAIRMAN MELIUS: Okay.

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MR. KATZ: So the next product will be an SC&A evaluation review.

CHAIRMAN MELIUS: Right. And, yeah, so there'll be an SEC evaluation review and that'll be the basis for a Work Group meeting. Okay. Good. Lawrence Berkeley?

MEMBER ZIEMER: NIOSH is still reviewing information from the most recent data captures there. And I was just checking my emails, and I didn't get to the right one, but Dr. Hughes is here. But I believe she indicated to me that it will probably be early next year, maybe January, before NIOSH finishes the last White Paper. And she's nodding yes, that that's correct.

Now, we have several White Papers already that have been prepared earlier and those have actually been also reviewed by SC&A, but we're waiting for this final group of White Papers so we have all the issues from Lawrence Berkeley. And then we'll have an opportunity

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for SC&A to review those and then we will meet.

CHAIRMAN MELIUS: Okay. Thank you, Paul.

Linde. Gen, is there anything? We're done, right? So that should be inactive?

MR. KATZ: Yes.

CHAIRMAN MELIUS: Okay.

MR. KATZ: It's inactive.

CHAIRMAN MELIUS: It doesn't say so on the website.

Okay. LANL? Mark's not here. I don't know if there's any -- yeah. You had it on your --

MR. RUTHERFORD: Yeah, I think I provided the update. We're working that 10 CFR. 835 implementation with this site and we just got all the information from them back in, I think, October.

And so we should be able to move forward here and provide something to the Work Group. You know, I don't know, I don't want to

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commit to a date, but it'll be soon because they're still reviewing how much information we got. Okay.

CHAIRMAN MELIUS: How about an, you know, an estimate?

MR. RUTHERFORD: A couple months.

CHAIRMAN MELIUS: Okay. It's in the transcript.

MR. KATZ: I think we got him.

CHAIRMAN MELIUS: We'll remember.

Okay. Mound. Josie's not here also. Brad, do you have any update? I'm not sure there's much activity there.

MEMBER CLAWSON: There hasn't been much activity at all on that.

CHAIRMAN MELIUS: Have we completed the Site Profile? I don't recall.

MEMBER CLAWSON: No, we --

CHAIRMAN MELIUS: Oh, here, Jim has --

DR. NETON: There's still a hold up on

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our issuance of the review of the external dose section of the Site Profile due to neutron-photon ratio issues.

CHAIRMAN MELIUS: Oh, right.

DR. NETON: Dr. Taulbee's working on that and his schedule's been pretty full, but I think it's high on his priority list right now.

CHAIRMAN MELIUS: Okay. Nevada Test Site. Brad?

MEMBER CLAWSON: Yeah, we've got a Work Group meeting coming up on that, I believe, December 3rd. And all of these are Site Profile issues.

SC&A has reviewed the matrix. We've just got to sit down with NIOSH and basically close out the Site Profile issues. That should be it for Nevada Test Site.

CHAIRMAN MELIUS: Good. Thank you. When I saw the announcement on the Work Group meeting, I expected it to get recalled, that it

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had the wrong name on it. We hadn't seen Nevada Test Site for a while, so thanks for keeping that moving, Brad, and everybody involved in that.

X-10, Oak Ridge National Laboratories. Gen?

MEMBER ROESSLER: Dr. Taulbee's not here and I've been waiting for word from NIOSH. Does anybody else have any update on that?

MR. RUTHERFORD: Yeah, we completed everything with the petition evaluation before. This is now, there was a post period after the SEC period that we were looking at additional works and exotics and things.

And we went and retrieved a number of log books that identified air sampling and such. We've been working through those. We also got into the difficulty of getting the documents released from a classification standpoint, so that slowed us down. But we have all the documents now and we can move

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forward with that.

The problem we got is, to be honest, is resources. We're balancing priorities right now. And, you know, if we see something that's clearly looks like it's going to be an SEC issue, we'll move that to the forefront.

But right now, we're working through all those documents and, hopefully, we'll have something to the Work Group. I'm not going to commit more than in the next six months.

CHAIRMAN MELIUS: Okay.

MR. RUTHERFORD: I just looked and November, December, January are rough right now.

CHAIRMAN MELIUS: Okay. No, I think, as I recall, when we did the original SEC evaluation there was uncertainty as to whether there was uncertainty as to whether there would be other ones sort of going forward there. I'm not sure I'm remembering the competing priorities discussion, but at least the general

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basis for it, you said. Gen, do you have anything to add or is that --

MEMBER ROESSLER: Thank you. No, we're just waiting.

CHAIRMAN MELIUS: Okay. Pacific Proving Ground, Dr. Lockey isn't here. I don't believe there's been a meeting or --

MR. KATZ: No.

CHAIRMAN MELIUS: Okay. All I do is keep getting emails about when is the site visit. I'll probably get more of those.

MEMBER MUNN: You know, we all want to go.

CHAIRMAN MELIUS: Dr. Lemen's going to be out in that general area later this month, Australia and Indonesia. So maybe you can take a sail over them.

MEMBER LEMEN: I may just drop by.

CHAIRMAN MELIUS: Yes.

MEMBER LEMEN: Then they won't have to have a site visit. I'll just go over.

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CHAIRMAN MELIUS: No, well --

(Simultaneous speaking.)

CHAIRMAN MELIUS: Okay. I skipped over Pantex.

MEMBER CLAWSON: Yeah, we had a Work Group meeting, along with Fernald here, about a month, month-and-a-half ago. Everything on Pantex is pretty well taken care of, the Site Profile issues.

But we still have the neutron-photon ratio issue that, I believe, has been our overarching issue several times. And that's the only thing that we have left on that.

DR. NETON: Actually, we decided not to use the neutron-photon ratio approach at Pantex because of some issues that we had with that. And we're now redeveloping a coworker model just based on the actual neutron dose distributions. And that's in the works. It's a couple months out. Yeah, and these are for non-SEC cancers because Pantex is an SEC --

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after a certain period of duration of the covered period.

CHAIRMAN MELIUS: Okay.

MEMBER CLAWSON: So once we have that paper, we'll finish up Pantex.

CHAIRMAN MELIUS: Okay. Good. Thank you both. And, Jim, we'll also remember a couple months out.

Pinellas?

MEMBER SCHOFIELD: We haven't done much on Pinellas right now. It's kind of like, just like the gaseous diffusion plants, and we'll hopefully get together and close that one out. I don't think there's a whole lot left on that that we have.

CHAIRMAN MELIUS: Jim's going to complicate things.

DR. NETON: Well, this is going to sound like a broken record about Pinellas, but there's only issue remaining at Pinellas,

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outstanding, and that's the reconstruction of tritide doses. And we're still trying to figure out whether they filtered the smears before they measured them or not, which, if they did, causes some issues with trying to reconstruct the tritide exposures.

That's a little bit out, though, on the schedule and that's one of those prioritization-type issues. I think it's out into January next year. So early next year, it's on schedule, is my recollection.

CHAIRMAN MELIUS: What's involved in finding that out?

DR. NETON: I think there's some more interviews that have to be done. They're searching through the health physics documentation, the records. Because we just have one indication that they did filter these samples. But there's got to be some other health physics documentation to substantiate that somewhere, why they did that in the first

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place, you know, or maybe they didn't and there's other documentation to address that.

CHAIRMAN MELIUS: Okay. Thanks for the explanation.

Rocky Flats I think we've already pretty much addressed. Probably should have a Work Group meeting between now and the --

MEMBER MUNN: Meeting in December.

CHAIRMAN MELIUS: Oh, it's already scheduled. Okay. Good.

Sandia, Dr. Lemen?

MEMBER LEMEN: I don't have anything new to report. I'm waiting for Sam. Does Sam got anything new?

MR. RUTHERFORD: Yeah, I think I actually talked about that a little earlier, that we did get a number of documents from Sandia, actually, back in September.

We are actually supposed to get more documents later on this month. But I think our schedule right now doesn't have us really

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completing things until sometime in April of next year.

MEMBER LEMEN: So we haven't planned any Board Working Group meetings until after we get data back from them.

CHAIRMAN MELIUS: Right.

MR. KATZ: Can we go back to Rocky Flats? Is that Rocky Flats you said we have a meeting in December? No, we have a Dose Reconstruction meeting in December.

MR. RUTHERFORD: Nevada Test Site.

MR. KATZ: Nevada Test Site and Fernald. Those are in December. No Rocky Flats meeting in December. We have not schedule a Rocky Flats, because I've not contacted Mark about this.

MEMBER MUNN: I thought he had scheduled.

MR. KATZ: No. We have NTS on the 3rd, Fernald on the 4th and Dose Reconstruction on the 8th. That's it.

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CHAIRMAN MELIUS: Okay.

MR. KATZ: Anyway. I just wanted to get that straight.

CHAIRMAN MELIUS: Savannah River, Mark isn't here. And I think we're waiting for some NIOSH reports?

MR. KATZ: I think so. Yes, we're waiting on NIOSH. Well, SC&A's been working on matters too. I don't know whether they have a report coming out too.

CHAIRMAN MELIUS: Yes, we have an SC&A report that we're waiting for for the SEC evaluation, which is a coworker.

MR. KATZ: Exactly.

MR. RUTHERFORD: And we were waiting for a number of documents to be released from the site from classification review. Now that those documents are slowly coming out, we'll be able to finish up some other papers that we're working on.

CHAIRMAN MELIUS: Timeframe?

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MR. RUTHERFORD: Let's see what Dr. Taulbee has in here. I don't see an update on any. I'll have to get back with the Board on that one.

CHAIRMAN MELIUS: Do you have one?

MR. RUTHERFORD: I don't see it.

MEMBER ZIEMER: There's a date of March 2015 up there.

MR. RUTHERFORD: Oh yeah, March of 2015.

CHAIRMAN MELIUS: And I also think our sort of coworker guideline issue may impact on this also.

Scientific Issues Work Group. David.

MEMBER RICHARDSON: Since the last meeting I had a chance to talk with NCRP about -- we had a topic that we were interested in which was biological effectiveness of low-energy photons and tritium. And the NCRP was working on a report on that.

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I had some back and forth with them about whether we could get a draft of that report, or at least the first chapters of it, to review. And, unfortunately, they have a new executive director who said that they're not going to release any of the material until publication.

They're behind on publication and it had been intended to be out by now. But hopefully by early 2015 there will be a report that's available for us to review on that.

And the suggestion, again, had been to get maybe David Kocher to come and at least introduce the report and present sections of it for us.

CHAIRMAN MELIUS: Okay. Do we want to do that for a Board meeting or for a Work Group meeting?

MEMBER RICHARDSON: I think for a Work Group meeting.

CHAIRMAN MELIUS: Okay. Jim, you're

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shaking your head. Is it we=re doing it for a Board meeting or --

DR. NETON: Well, I think it could start as a Board meeting and then eventually escalate it through a Work Group.

CHAIRMAN MELIUS: Okay.

MEMBER RICHARDSON: Yes, I was hoping we could digest it some and then maybe --

CHAIRMAN MELIUS: Okay. SEC Work Group. I think we've got three things underway, if I remember correctly. One is the coworker sufficient accuracy issue which we're already talking about today. And I think you have a pretty good idea where that is.

Secondly, we have a SC&A review of a Savannah River coworker issue that I think is -- I can't remember if it's just out from DOE review or where. It's very close. Just got it, okay. I'm still on the bad list for my CDC email. So I will get it when I get back to the office next week.

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And then the third issue we have. Once upon a time a long time ago the SEC evaluation group looked at the Dow Madison SEC and so forth. And we now have a follow-up. We have a Site Profile and we have also a PER.

So if this is okay with my fellow Subcommittee chair, Work Groups, I think we would like to task SC&A to really review both, the PER and the Site Profile.

And my understanding, one, that this is sort of a priority, available resources issue also. And my understanding is that NIOSH now has the timing appropriate, is that true, Stu? At least that's what Ted tells me after talking to you.

MR. HINNEFELD: Right. The Site Profile has been revised. So there's a revised Site Profile published, so that's certainly available to review. PER is underway now.

MR. KATZ: It's about the come out.

MR. HINNEFELD: I mean, we haven't

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actually considered all of those. So certainly the Site Profile revision is available for review.

CHAIRMAN MELIUS: It seems sensible to me to combine the two. Is that -- I'm not familiar with the PER.

MR. HINNEFELD: Well, the PER review typically kind of does the revised Site Profile review anyway. You know, they kind of look at the changes that were done and were the changes to the Site Profile appropriate? I think that's one of the tasks, isn't it?

And so to our way of thinking, whether they're combined or not, you know, is kind of irrelevant to us. So I suppose it could be combined as one assignment and then if the PER cases aren't completely worked they would, you know, SC&A would just have to wait until they get that sub-task until the cases are worked.

CHAIRMAN MELIUS: Yeah, why don't we get it assigned? Dr. McKeel will rest easier

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and we can get this going. And then face this when the review is done, at the appropriate timing we can then decide if all this Site Profile issues, sort of new issues, revolve around the PER. Then, you know, the chair of the Work Group would be glad to send this all over to the Procedures Subcommittee for action.

But if there are others, we can sort of work that out when we get to that point.

MEMBER MUNN: We're looking forward to your action.

CHAIRMAN MELIUS: Our actions. It=s a group decision. Okay. I hope we haven't confused everybody by that.

Paul, maybe our hardest working Work Group, TBD-6000.

MEMBER ZIEMER: Well, TBD-6000, I want to report on two different facilities. First of all, General Steel Industries. You may recall that Appendix BB, which is, basically, what you might call the Site Profile

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for General Steel Industries, Revision 1 of that was issued this past summer.

SC&A was tasked to review the revision and they have just completed that review. We just got the review within the last few days, actually. And I believe once NIOSH has a chance to review that and respond, the Work Group will meet.

Now, this does also raise the issue of the process of a PER, as well, because there's not a PER for this one yet, either. It was my understanding that NIOSH may be wanting to await the review of this one before they actually issue a PER in case there is an additional revision or two.

I'm not sure which is the best way to do this because in the past some of these PER reviews were actually reviews of the revisions themselves.

But we have the revision. I think we'll be prepared fairly soon. Although, I

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didn't see it on the NIOSH worksheet yet when they would have a chance to respond.

My early review of the SC&A report, and I haven't had a chance to review it in complete detail, a lot of the comments were wording things in there, but there is one thing, at least, that's a little more substantial. So the Work Group will have to take a look at that.

But at the moment, we're proceeding just with what we have before us. And it will be up to NIOSH how they want to proceed with the PER in the process.

But that's where we are in GSI. And, personally, I'd like to get the comments closed as quickly as we can because this has been a long process and we want to make sure that there's a sooner rather than later opportunity for any revised dose reconstructions to be handled. Most of them have already been done and many of them, I'm sure, will have to be redone. So we'll need to come to closure on that.

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The other thing I'll report on is Simonds Saw, which is also a TBD-6000. Just within the last few days, I think late last week, we received Rev 2 of what constitutes their TBD. This is not an SEC issued Site Profile and we just received that from NIOSH a few days ago. SC&A will have to review that yet. But just to let you know that that is in the works and at some point we'll have to see if there's any issues yet on Simonds Saw on the Site Profile.

CHAIRMAN MELIUS: Okay. Good. TBD-6001, otherwise known as the Uranium Refining Atomic Weapons Employers Work Group, nothing to report?

MEMBER ANDERSON: Nothing to report.

CHAIRMAN MELIUS: Okay.

MEMBER ANDERSON: We've got additional assignment sites, but they're not, I don't think, ready for us to look at yet.

CHAIRMAN MELIUS: Okay. Surrogate

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Data is in the same position. We have nothing thing active for that. We're not expecting anything to be active about, but you never know. Weldon Spring?

MEMBER LEMEN: I have nothing new to report on that.

CHAIRMAN MELIUS: What do we have that's old? I don't --

MEMBER LEMEN: I don't have anything that's old either, unless NIOSH does.

CHAIRMAN MELIUS: We haven't done a Site Profile review there, have we?

MEMBER LEMEN: I think everything just kind of stopped after the SEC.

MR. HINNEFELD: No, I don't recall any Site Profile issues being open from the SEC process.

MEMBER LEMEN: That's correct.

MR. HINNEFELD: When we finished the SEC process, I didn't think there were any Site Profile issues left. That's my recollection

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anyway.

CHAIRMAN MELIUS: Is there a Site Profile review or was it just an SEC review?

MR. HINNEFELD: Well, there was --

MR. KATZ: Combined maybe.

MR. HINNEFELD: Yeah, when an SEC review is done, you know, and the collection of issues are made, sometimes those are parceled into Site Profile issues and SEC issues.

And sometimes we'll resolve the SEC or add an SEC Class and get rid of the SEC issues and still have Site Profile issues remaining. But I don't recall that there were any Site Profile issues remaining from the Weldon Springs work.

CHAIRMAN MELIUS: But if SC&A, and this is a hypothetical, if SC&A has not done a Site Profile review, then there might be SEC issues. They may have focused just on SEC issues and not focused at all on Site Profile issues, which is why we do separate Site Profile

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reviews. And I just don't recall on this one what was done.

MR. HINNEFELD: I don't recall either. I don't know that --

CHAIRMAN MELIUS: Well, maybe John Stiver has some.

MR. STIVER: After the SEC was closed out, I believe we had a meeting in September of 2012. And then all the TBDs were revised after that, in 2013, and we have not looked at those yet.

I think it's probably, mainly, some of the superficial changes to incorporate the SEC, but I don't know because we haven't really checked on that yet.

CHAIRMAN MELIUS: Okay. Should we task or --

MR. KATZ: Why not? Why not just to confirm that. If it's superficial, it'll be easy.

MR. STIVER: Yes, I mean, it's a

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matter of an afternoon. One afternoon looking at it and see if there's anything on it.

MEMBER LEMEN: So if you task the SC&A, does that mean should we have another Working Group meeting after that?

MEMBER MUNN: It depends.

MR. STIVER: In any case there are TBD revisions out there that we have not seen yet.

CHAIRMAN MELIUS: Okay. So we'll task SC&A to review those. Okay.

MEMBER LEMEN: And then should the Working Group wait until SC&A reviews it and then take action after that?

CHAIRMAN MELIUS: Yeah, yeah, NIOSH is going to have to respond to their reviews. And this is down the road a bit, but that --

MEMBER LEMEN: I just want to make sure there's nothing from the Working Group you're expecting.

MR. KATZ: Nothing yet.

CHAIRMAN MELIUS: Nothing yet.

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And Worker Outreach, Josie's not here, so I think we'll put that off until the next meeting. And there is some follow-up that we need to do in that, but Josie needs to should be present for that.

And then we have our two Subcommittees. Dose Reconstruction Reviews. David?

MEMBER KOTELCHUCK: Okay. Well, our last --

CHAIRMAN MELIUS: Can you speak into the microphone --

MEMBER KOTELCHUCK: Our last teleconference meeting was October 29th, which Wanda kindly chaired in my absence, and much was done. We almost finished 10 through 13.

Actually, we have 14 findings remaining in the so-called DCAS sites file. We have a next meeting, as Ted noted, on December 8th. And we will finish up the findings at that time and then begin, finally, the 14th set.

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And that will allow us also to begin working on the audit report, finally, for 10 through 13.

And work is going on on the blind cases and work is continuing on NIOSH work on the 9th up through the 19th set. So that's the report and we're moving along.

CHAIRMAN MELIUS: Paul.

MEMBER ZIEMER: I'd like to ask my periodic question. And that is, what are the plans to report to the Secretary on the scientific validity? Is that what you were talking about?

MEMBER KOTELCHUCK: Yes, that's what I was talking about, the audit.

MEMBER ZIEMER: Okay.

MEMBER KOTELCHUCK: Oh yes, absolutely. We're behind.

MEMBER ZIEMER: Yes. That's okay.

MEMBER KOTELCHUCK: We had hoped to begin earlier, but we will do it now and try to expedite it.

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MEMBER ZIEMER: I just wanted to make sure I understood that.

CHAIRMAN MELIUS: And I will ask my periodic question, which is what about the blind reviews?

MEMBER KOTELCHUCK: The blind reviews, we've gone over, I believe, four out of the six. It's been put back on our schedule because we want to get 10 through 13 completed so we can do the report to the Secretary.

The blind reviews, as you remember from earlier meetings, for the four cases that we reviewed, the blind reviews were identical or compatible. We haven't moved ahead on the others. We will now be able to, however, when we finish 13.

CHAIRMAN MELIUS: Okay. Any other questions, comments, anything from NIOSH or SC&A on that? Okay.

MR. KATZ: Well, just to update you, SC&A has been assigned. They're doing six plan

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reviews now, additional ones. And they've also been assigned their 21st set of dose reconstructions, which will take them through March. So that's also happened in this interim.

CHAIRMAN MELIUS: Procedures Review.

MEMBER MUNN: Procedures has not met since I gave you a fairly concise report during our September Board teleconference. We are scheduled for Tuesday, November 25. So we will be meeting later this month.

At our last meeting, we had a number of PERs that we looked at and we have a gaggle more that's coming up for us. We also took a look at several OTIBS that we were attempting to close out last time, some of which we did.

They included ingestion, inhalation of plutonium and internal dosimetry issues, including some internal doses related to gross alpha and gross beta. But most of our focus, I think, will probably be on PERs during this

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upcoming Procedures meeting later this month.

CHAIRMAN MELIUS: Any questions or comments? Yes, Paul.

MEMBER ZIEMER: Actually, if I might be permitted to ask a question of David on the previous report. We have 21 total reviews we will have finished with this last group, 21 groups of dose reconstruction reviews. Is it 21?

MEMBER KOTELCHUCK: No, we've been working on 10 through 13 sets --

MEMBER ZIEMER: Yes, but which ones -- which group is ready for SC&A's completing or --

MR. STIVER: Well, we have delivered up through set 19 now. Set 17 were the six additional blinds that Dr. Kotelchuck was talking about that. And since then we've been tasked to do Set 20, which are another additional set of blinds.

MEMBER ZIEMER: Okay. But --

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MR. STIVER: And then 21 through 30 are standard dose reconstructions.

MEMBER ZIEMER: Okay. So with those, how many total cases have we reviewed? Is it somewhere around four to 500?

MEMBER KOTELCHUCK: Let's see. Total? You mean from the beginning?

MEMBER ZIEMER: Yeah.

MR. STIVER: The table I put in there --

MEMBER KOTELCHUCK: Over 200. I'm just looking at the --

MR. KATZ: No, no, no. David, John has the numbers. We talked about this recently.

MR. STIVER: Yeah, in the review that I sent out to you guys, there's a table on Page 15. And the total number of cases up through Set 19 is 468. Findings are nearing completion through Set 13. That still leaves 14 through 19 including --

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MR. KATZ: So though Set 21 it'll be about 500. That's correct.

MEMBER ZIEMER: Okay. So about 500, what I'm trying to get at is to get an update on what percent of the total cases that have been reconstructed have we been able to review and whether our original goal of two-and-a-half percent was even realistic. I have a feeling it wasn't and I don't know if we'll be able to achieve, ever, what we thought we could ten years ago, or more than ten years ago, twelve years ago, and whether or not we should.

I don't think we need to do it today, but I'm wondering if the Dose Reconstruction Subcommittee might advise us as to what is realistic, so that we have on record --

MEMBER KOTELCHUCK: Sure.

MEMBER ZIEMER: Maybe we need a new goal or we have to do more or change the goal.

MEMBER KOTELCHUCK: Yeah. I mean, to respond just to what you're saying, I mean,

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I've looked at the numbers and we're really running around one percent. Maybe one-point-something, at least half of two-and-a-half-percent. And that's what we've been running and it's been very slow.

CHAIRMAN MELIUS: But, I mean, well, we've all talked about this, but it's not a static methodology and it's very complicated. So the methods that were used for the first hundred were different than the last hundred.

MR. KATZ: But are we doing it any faster? I don't --

CHAIRMAN MELIUS: No. Well, and so I guess the follow-up, and reason for my question was about the blind reviews is, is there a better method that we could be using or a different methodology we should be using that might be more efficient? Or a mix of methodologies and approaches that might be more efficient in terms of assuring the quality of that, but also identifying any remaining

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problems.

I think most of our problems have been -- at least my estimate is just sort of this fact that you've separated the dose reconstruction reviews from the Site Profile, SEC issues and so forth. We go at them sort of differently. And Procedures and so forth. But is there some way of taking that into account? Is there something else we should be able to do in methodology.

But I think to get to that, I think, when we last talked about this, which is probably a couple years ago, was the issue of, one, we needed to have a report to the Secretary or something like that would summarize this, at least for the more recent reviews to be able to evaluate it.

And, secondly, the blind reviews would also be helpful in terms of helping to evaluate what other methodologies might be used. Not that we could ever do, you know,

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two-and-a-half percent blind reviews, but might point to issues that would come up.

So I think we could try to aim for, you know, pulling our -- so really looking at our methodology again as we're doing this audit.

MEMBER KOTELCHUCK: Well, as both the chair and also a new person on the Committee, we have not had, with the blind reviews that have been completed and that we've looked at, there seems to be no problem, that we're doing a good job, there is agreement.

And the Sets 10 through 13 have been very, very slow. And at least from my point of view, that's most of the time I've been on the group and the Subcommittee, we've been discussing those.

And so the push has really been to get those out so that we can begin to work on the audit. I believe we can come back onto the blind review cases fairly quickly. They're small in number and there hasn't been a problem.

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So with respect to what the Chairman is saying, we will go back to blind reviews, but we just had to get 10 through 13 off our plate. And that has been, I felt, an imperative, because we could not even begin to talk about the report to the Secretary, which has a high priority.

CHAIRMAN MELIUS: I'm not being critical of both the priorities. I was just trying to address how do we address the bigger issue, which Paul raised also. Is there some change? And not to reflect on the work that you've done or the Subcommittee or the people involved in the reviews, but it's been a long time and we need to look at that. And we recognize that we need to at least get that 10 to 13 audit, whatever we're calling it, completed as a priority and then be able to move on.

MEMBER KOTELCHUCK: I'm not feeling that you're attacking the Committee or

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anything --

CHAIRMAN MELIUS: Yeah, yeah. Okay.

MEMBER KOTELCHUCK: -- but just trying to say how we sort of established priorities ongoing. And getting something to the Secretary, as I've said, is a high priority.

CHAIRMAN MELIUS: Yeah.

MR. KATZ: And if I could just add something related to Paul's point, to put a very fine point on it. We're falling, despite the fact that we've really thrown ourselves at this harder since -- although we've had some quorum issues at times that have gotten in the way, we're actually losing ground in terms of the difference between where the Subcommittee is in reviewing cases and the SC&A's production reviews.

CHAIRMAN MELIUS: Right.

MR. KATZ: So we definitely have to have this sort of better thinking about how we go about this in a big sense, so I totally

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concur.

CHAIRMAN MELIUS: Stu.

MR. HINNEFELD: I was going to offer one thing to keep in mind when you talk about the original objective of two-and-a-half percent, or whatever, is that for many years now the Subcommittee has selected cases with PoCs over 40 percent or over 45 percent, which is a very tiny minority of the total cases.

I bet that=s far less than two-and-a-half percent of the dose reconstructions we do. And so, you know, based on those facts, that we are only selecting this top tier, if you selected them all, I bet you wouldn't be at two-and-a-half percent.

So there's a really fundamental reason here why the Subcommittee, I think, could come back and say it's not realistic, beyond the fact that it's an awful lot of work, it's just not realistic because they're not two-and-a-half percent in the range we want to

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look at.

CHAIRMAN MELIUS: Yeah, but another take on that would be that because they're, you know, over 40 percent, they probably are more difficult to review. And since you were already prioritized, we're already selected to try to address the problems, but it also makes the work load bigger.

MR. KATZ: Right.

MR. HINNEFELD: Yeah.

CHAIRMAN MELIUS: Yeah, yeah. If it was a random sample, I think we would probably have a lot more done because it would be a lot quicker to do. And that's not to fault the selection criteria, but, again, I think we need to sort of look at what comes out of the audit and what our past experience has been beside this. Are there other approaches we can use? Yes, David.

MEMBER RICHARDSON: Well, I mean, I=m going to play the devil's advocate. I mean, I

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can't go back 12 years, but I can go back a number of years when we talked about that logic of sampling. And we recognized we were doing stratified sampling, over-sampling certain types of cases, but nonetheless we had our sites set at at least sampling a couple percent of the cases in order to get some coherent picture of the information. And we're well below that target.

I mean, so that does force us to kind of reflect about how we can characterize the whole process based on, let's say, one-half of a percent or a one percent sample.

The second part was some of the problems we find would be, and these are more difficult cases in a sense, but some of the problems we find seem to be still sporadic, episodic, quality control, sort of, you know, quality assurance issues that I'm not sure, you know, would be uninformative if we would sample other parts. And we just don't know right now.

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So there seem to be some of those QA/QC issues.

And the third one is we had set our sites at this couple percent sampling issue, but since the ten year review, NIOSH has taken on sampling some cases as well. And I don't remember what your goal was or how many blind reviews or basically reconstructions NIOSH was going to run through, but in a sense there's a shadow program running and also doing this.

MR. HINNEFELD: I've forgotten now, but it's maybe one percent. It's not a very big percent.

MEMBER RICHARDSON: But it's in some sense we have now, we have two one percent programs going on and that may help us.

CHAIRMAN MELIUS: And it might be helpful, when we're ready, is to get a report on the NIOSH review process also when we're ready to be talking about the audit and what should we be doing in terms of methodology. So you could be able to summarize, you know, your

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experience, Stu, with doing these reviews and so forth. Okay.

MEMBER KOTELCHUCK: I mean, I'm counting on the review for the Secretary as informing us. I mean, I'm looking forward to that, to learn, not just that I have to report to somebody else above me but that it will give us a picture, finally, of where things are slowing down or can be changed to speed things up.

CHAIRMAN MELIUS: Yes. Okay. Any other comments on that issue? Okay. Do we have any other Board --

MEMBER KOTELCHUCK: Yes, two more. Do you want something on Ames?

MR. KATZ: Ames.

CHAIRMAN MELIUS: Ames?

MR. KATZ: You skipped it.

CHAIRMAN MELIUS: Did I skip Ames?

MEMBER KOTELCHUCK: We have an Ames Working Group. You skipped us.

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MR. KATZ: I was going to catch you. It's all right. It wasn't on the website, I, guess.

MEMBER KOTELCHUCK: Right. I'll be glad to report it.

CHAIRMAN MELIUS: Ames is missing from the website. No respect. Unless it's been renamed.

MEMBER KOTELCHUCK: Right. Well, it has not even had its first meeting yet. But it is getting organized and --

CHAIRMAN MELIUS: Well, that's why the website hasn't been alerted yet.

MEMBER KOTELCHUCK: Right. For the record, then, let me say that the Ames Work Group is Dr. Roessler, Loretta Valerio, Brad Clawson and myself.

I've been in touch with Tom Tomes. He has sent us background files which many folks have been looking at and I've been in discussions with him trying to basically get a

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better orientation as to quite where we are.

He envisions that we need four more White Papers, which he is talking about doing next summer, of 2015. We have not met as a group and we will be having an organizing conference call sometime either in December or January. That's when I'd like to have it.

And then we'll proceed in discussions with Tom. I'll share the discussions that I had with him with the rest of the Working Group and we'll see.

Obviously, if it will take him until next summer, then we're not going to be able to do very much between now and then, regrettably.

CHAIRMAN MELIUS: My recollection is that there was a Site Profile review from SC&A. And so are these White Papers in response to that? That's what I'm trying to --

MEMBER KOTELCHUCK: Yes.

MR. STIVER: Yeah, I was going to say that we turned in or delivered our review in

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August of 2013, our 22 findings on that. So I'm assuming is what is our response. This is non-SEC.

CHAIRMAN MELIUS: Yes, yes. They're Site Profile issues that --

MR. HINNEFELD: These are for things that are for -- this is in SEC for much of its period and so many of these issues are related to the non-SEC cancer claim dose reconstructions.

CHAIRMAN MELIUS: And one of the reasons we held up to do the Site Profile review was so NIOSH could then focus some resources on being able to address these Site Profile issues. So that I think the schedule makes sense in those terms, so. I just wanted to get that on the record.

MR. KATZ: Okay.

CHAIRMAN MELIUS: Did I miss anybody else? Did the website have any other failures?

MR. KATZ: No, that's good.

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CHAIRMAN MELIUS: Yes.

MR. KATZ: Blockson, there's no activity right now.

CHAIRMAN MELIUS: Yeah. I'm not sure if Blockson needs activity does it?

MR. KATZ: There'll probably be a PER at some point, which is why I'm not making it inactive.

CHAIRMAN MELIUS: Okay. We'll wait. Good. Any other things Board needs to do?

MR. KATZ: No, I think that does it.

CHAIRMAN MELIUS: Okay. Then we will break until 4 o'clock.

I'm reluctant to try to move up the Santa Susana because we have people scheduled to come in and I don't want to -- though some people are here, I'm concerned that other people might come in around 4 o'clock given --

MEMBER SCHOFIELD: And some are going to call in later.

CHAIRMAN MELIUS: Yes. We have

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people later, so, yes. Because I think our presentations, I think, will go on a little longer, at least a half-hour, but just a guess. So we will start back up here promptly at 4 o'clock.

(Whereupon, the above-entitled matter went off the record at 3:00 p.m. and resumed at 4:02 p.m.)

CHAIRMAN MELIUS: Okay. We'll reconvene now. And my schedule here. So I'm not sure. Phil, do you have anything you want to say to start or should we just go into -- I could use his --

MEMBER SCHOFIELD: I think we should just go ahead and get started.

CHAIRMAN MELIUS: Okay.

MEMBER SCHOFIELD: The only think I do have is just one brief thing. I really appreciate DOE and all the people at the facility yesterday for arranging the tour. I think that was very educational for us.

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CHAIRMAN MELIUS: So what we'll do is we'll start. Dr. Hughes will do a presentation from NIOSH. Then we'll hear from SC&A, John Stiver, and then we'll hear from the petitioner.

And at some points there may be after presentations, some questions from the Board Members, but then we will, after that, after hearing from the petitioner, we will go into the public comment period. So let's do that. So we'll start with you, Lara. Welcome. Haven't seen you for a while, so --

DR. HUGHES: Yes.

CHAIRMAN MELIUS: -- good to see you.

DR. HUGHES: Thank you, Dr. Melius.

CHAIRMAN MELIUS: Yes.

DR. HUGHES: This is the Santa Susana Special Exposure Cohort Site Profile update. Okay. When we say Santa Susana in the context of this program, we really talk about four separate covered sites.

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We kind of treat them as one thing because all the sites share the same operator over the course of time and also share the workforce and most importantly for our program, their dosimetry program, the issues affecting the dosimetry program are shared between all these sites.

The first site, the largest, is Area IV of the Santa Susana field laboratory which is covered from 1955 to the present. There are currently two Special Exposure Cohort classes from 1955 through 1964, the Canoga Avenue Facility which is covered 1955 through '60, the entire period as an SEC Class.

The DeSoto Avenue facility has a covered period of 1959 through 1995 as well as 1998. And it is currently in SEC Class from 1959 through 1964.

And the Downey Facility has a covered period of 1948 through 1955 and the entire covered period is an SEC Class currently.

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Now, those of us who went on the tour yesterday got a nice detailed history of the site. The contractor history is somewhat complicated and I don't want to go into it.

All of these sites were non-weapons facilities that did research into nuclear reactors and other nuclear materials. So they were reactor operations.

There were about ten different reactors that were built and tested as well as a number of critical test facilities which is kind of, it was a small reactor.

And there was a number of nuclear support operations. There was a hot lab facility. There was a small accelerator facility. There was radioactive material handling facility. There were waste handling facilities and so forth.

The Work Group for Santa Susana was established in 2008 in response to the Board contractor doing a review of the NIOSH TBD on

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the sites. That was done in 2008. There were two SEC Evaluation Reports for Area IV that were delivered to the Board in 2009 and 2010.

The first SEC Evaluation Report on Area IV was also reviewed by the Board contractor and the TBD issues and the SEC issues resulting from those reviews were the discussion points in front of the Work Group.

The Work Group has met in 2008 and 2009 and 2010. And just recently, in 2014, the very last meeting last month was mainly to touch base and kind of reestablish the Work Group.

So the issues that were discussed in the past in front of the Work Group included things like the site definition and operations timeline of all four sites, incidents, internal monitoring issues, internal coworker model feasibility and necessity.

I forgot to mention with all of the SECs that were established for these sites, were based on defining of internal

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infeasibility. So the internal data was a big discussion issue.

There was also issues with the external monitoring data, the neutron data, the environmental approach that is outlined in the TBD as well as how we deal with the tritium plumes that are on site and potential work exposures.

Currently, the Work Group is discussing the neutron/photon ratio White Paper that was sent to the Work Group in 2010, but that was kind of on hold pending some other issues.

What needs to be discussed is the internal coworker model that has been completed by NIOSH in March of 2014. And since I prepared this presentation, the Board contractor has also issued their review of the neutron/photon ratio White Paper. So that's also in front of the Work Group to be discussed soon.

There are several NIOSH draft

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documents that are ready to release. The external coworker model is in a pending status pending the resolution of issues regarding neutrons. And there's several TBD revisions that are pending resolution of issues and they will be released as soon as those are resolved.

So since 2010, NIOSH has done considerable work on the site, although the Work Group has not met. In the last Work Group meeting in 2010 there was discussion on the internal and external coworker model. So ever since then NIOSH has continued the discussion and issue resolution affecting the internal data.

Back in 2010 we have been working with a database that was received from Santa Susana from Boeing that we attempted to work into an internal coworker model, however, there were numerous problems.

The reason being that this database was not developed for the purposes NIOSH

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needed. It was developed for an epidemiological study, so there was some issues with that.

So NIOSH has been negotiating with Boeing trying to obtain scanned worker dosimetry records so we could do the data entry ourselves.

Also in 2010, NIOSH prepared the neutron/photon White Paper and revised the internal/external and environmental TBDs mainly to include the SEC language.

In 2011, the negotiations with Boeing about the worker records continued. And we also, at the same time, tried to resolve issues with the, what we call the Boice database because it was developed for the epidemiological study by Dr. Boice.

We found some issues that we decided that we cannot use it for NIOSH purposes of developing internal coworker model.

And also in 2011 another iteration of

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TBD revisions were completed, but they remain pending resolution of issues with the coworker studies.

2012, finally Boeing decided to release the scanned worker records to NIOSH. Those were received in March of 2012 and it consisted of 14,000 files that had to be sifted through and classified.

So the data entry from those lasted from May 2012 to January 2013. And the internal and external coworker models as a result of those records were completed and reviewed in 2013.

The external model is currently pending and waiting approval once we decided how to approach the issues on neutrons which is something we've been working on in the past few months.

So this year the internal coworker model was approved and released in March. And once we decided that the internal model was

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feasible, we picked up the issue resolution on the external because that was kind of on a holding pattern pending to see if the internal was going to happen.

So the internal coworker model will be known as OTIB-80. It's a plutonium model, uranium model and a gross beta model starting in 1965 which is the end of the SEC Class up until the modern day period.

The external coworker model will be known as OTIB-77, currently in draft status. It is a result of an analysis of about 175,000 data points and it will consist of a site wide model addressing photon, electron and neutron doses. It will also have a separate model for Area IV and a separate model for the DeSoto facility.

The neutron/photon ratio White Paper was developed to provide a bounding approach for unmonitored neutrons for the time span of 1956 to 1987.

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To do this, we analyzed over 1,000 paired neutron and photon measurements around the reactor facilities. There was a lognormal fit data involved which resulted in a neutron/photon ratio of 1.73.

The neutron approach that's to be done with the neutron/photon ratio is that it's to be used for a worker that was either employed site wide or had an unknown work location.

We've also found that the accelerator, there was a small accelerator facility operated at site only for a short period of time and in cases where a worker could be placed at this facility, the NTA film with a correction factor would actually be useable. But it's not anticipated to be a large part of the neutron approach.

As indicated in the NIOSH White Paper, the reactor exposure is to use an N/P ratio and some additional research has indicated that for a situation such as fuel handling or other

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nuclear procedures that were done at the site that the reactor N/P ratio is most likely bounding.

So our current path forward is to issue the external coworker model to incorporate the neutron guidance and revise TBDs to continue issue resolution with SC&A regarding the coworker models and the neutron approach and address remaining SEC issues and remaining Site Profile issues which regarding to the SEC I think that was mentioned earlier in the SEC updates.

There's a question of the year 1965 because that was a year that initially qualified for evaluation, however, the Class was only recommended through 1964.

So we still owe the Board some kind of decision on what's going to happen with 1965. And with that my presentation is complete. So if you have any questions?

CHAIRMAN MELIUS: Okay. Questions?

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Yes, Gen?

MEMBER ROESSLER: You mentioned not being able to use the Boice database and I can understand why NIOSH data that's put together for dose reconstruction cannot be used for epidemiology. But remind me why it can't be done the other way.

DR. HUGHES: Well, we received the Boice database from Boeing and as far as I'm remembering correctly, we were assured that this database was a complete database of all workers, of all internal dosimetry data that there was.

However, we also have in our database from the 1960s what's called annual exposure reports. It was reports written by the site that indicated how many workers were monitored, how many urine bioassays they did, how many were positive.

And we actually did some kind of quality assurance and we found some

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discrepancies that we were not able to resolve. So at this point we were saying that we do not have enough confidence that the Boice database is actually complete.

Now, I'm not in the position to judge the epidemiological study that Dr. Boice did, it's just for our purposes, we found some issues that we just said, well, we cannot use this because we're not confident that it's complete.

CHAIRMAN MELIUS: Okay. Other -- yes. Henry, you had --

MEMBER ANDERSON: No, no.

CHAIRMAN MELIUS: Oh, okay. Other questions?

MEMBER RICHARDSON: And now that you, if I understand correctly, you received a file which you described as scanned records. And you contracted ORAU to keypunch those records?

DR. HUGHES: Well, they were entered into a database format. Each worker at the site had a paper folder that contained the

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dosimetry records, the batch readings, the urine bioassay reports from the labs that did the analyses.

And during the course of the Boice study, actually, this was all scanned and digitized and it was available in electronic format. So what we got was the scanned raw records of each single worker and that's what we used to extract the internal/external data.

It's very much the same thing that we receive for an individual worker during dose reconstruction from the site, except that we receive the entirety of the monitored workforce at Santa Susana.

MEMBER RICHARDSON: And when you described it as 14,000 files, is it one file per worker or what makes it 14,000 --

DR. HUGHES: Yes.

MEMBER RICHARDSON: -- files?

DR. HUGHES: Yes. Now, not all of these workers were actually monitored, but

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there were that many files. So we had to pull out. Some workers were not actually monitored, but they might have been employed. I'm not exactly sure. There are that many files and each represents a worker, but not all of these did actually contain monitoring records.

MEMBER RICHARDSON: Some files were empty?

DR. HUGHES: That's correct.

MEMBER RICHARDSON: So the contention is that the workforce of radiation monitored workers at the site is 14,000 people?

DR. HUGHES: No, it's more on the order of 5,000, I believe. I don't want to say anything wrong. I would have to check my numbers.

MEMBER RICHARDSON: And then when you compared that to the annual reports summarizing the number of people who are bioassayed and were radiation monitored in this case now, with the

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ORAU data, does it correspond to the expectation?

DR. HUGHES: I actually have not done that comparison. However, we do know this is all the site has.

MEMBER RICHARDSON: But it's, I mean, I --

CHAIRMAN MELIUS: But has it completed?

DR. HUGHES: Yes.

MEMBER RICHARDSON: Because basically you went back to the scanned files that had been used for the epidemiological analysis which --

DR. HUGHES: Yes.

MEMBER RICHARDSON: -- your records --

DR. HUGHES: Correct.

MEMBER RICHARDSON: -- to be incomplete and you reentered them and I guess, it leaves the question now, are they complete?

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DR. HUGHES: We hope so, yes. Well, we actually have not gone back and done the comparison. However, what we've done, we've done a comparison with the NOCTS claim files that we received and have --

MEMBER RICHARDSON: I mean, it's been -- I mean if some were even --

DR. HUGHES: Which is a subset --

MEMBER RICHARDSON: -- passed. One is --

DR. HUGHES: -- of it, but there was no discrepancy with that, so.

MEMBER RICHARDSON: Yes. I mean, one of them is, it's interesting to know whether the effort paid off. Another one that=s --

DR. HUGHES: Yes.

MEMBER RICHARDSON: -- just interesting. I mean, there have been examples in the past where we thought we had complete data and then we realized that there were gaps and we said there appear to be gaps. And then

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further effort went into locating files and there was more, so. I would just, it might be worth --

DR. HUGHES: Okay. Yes, the --

MEMBER RICHARDSON: Wherever possible trying to reconcile the --

DR. HUGHES: Yes, that can certainly be done.

CHAIRMAN MELIUS: Okay. Any other questions?

MEMBER RICHARDSON: I had a --

CHAIRMAN MELIUS: Oh, go ahead.

MEMBER RICHARDSON: -- another question. Because the external file had 175,000 data points and the neutron to photon ratio was derived from 1,180 paired measurements. So is my understanding that of the 175,000 --

DR. HUGHES: No, sorry. That's two completely different things. The 175,000 is dosimetry readings, batch readings, that sort

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of thing. The 1,100 neutron/photon, this is survey data, hand held survey meter data --

MEMBER RICHARDSON: Oh.

DR. HUGHES: -- that was --

MEMBER RICHARDSON: Oh --

DR. HUGHES: -- collected --

MEMBER RICHARDSON: -- these are --

DR. HUGHES: -- around the reactors.

MEMBER RICHARDSON: -- area monitors. Oh --

DR. HUGHES: Yes.

MEMBER RICHARDSON: -- then those aren't monitors. Okay. I got you.

DR. HUGHES: Yes. It's not personnel dosimetry, it's area data.

MEMBER RICHARDSON: Okay. Now, within the file, the monitoring file there's for a subject in a badging period, they have potentially estimates of their photon dose and their neutron dose as well. Is that right?

DR. HUGHES: That's correct. If

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they were wearing the NTA film badge and if it had a reading, it would be reported in their file. That is correct.

MEMBER RICHARDSON: Okay.

CHAIRMAN MELIUS: You set? Okay. I couldn't tell if you were writing something down earlier or had another question. That's why I interrupted anyway. Any other Board Members with questioning? Board Members on the phone?

If not, I have one comment. First of all, thank you for a very good succinct summary of a long period of time. So it was helpful.

One thing I'd say, since, as you know, we're as a Board and NIOSH are dealing with the evaluation of coworker models, and I think it would be helpful as the Work Group and SC&A and NIOSH address these coworker models here, at least keep in mind the kind of implementation guidelines we have.

So I just don't want to have to

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backtrack on this. So, again, I don't want to sort of hold you to criteria that you haven't seen yet.

DR. HUGHES: I have been warned, so.

CHAIRMAN MELIUS: Okay. Okay. Okay. Well, not as much a warning as a request.

DR. HUGHES: Yes.

CHAIRMAN MELIUS: Do the best that you can without having to -- I don't think it affects it, it's as much as I think what you present going forward and so forth. So thank you. Okay. Now, we'll hear from John Stiver from SC&A.

MR. STIVER: Thanks. Good afternoon, everybody. I'm John Stiver from SC&A and I'm going to be giving our and the Board's perspective on the various activities that have taken place since the initiation of the TBDs and the reviews and the SEC petitions and so forth since 2006.

The first half of the slides really

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deal with kind of a timeline of the activities that have happened. It's a very convoluted set of findings and activities, as anybody who's tried to wade through the transcripts from the meetings would attest to.

And then after that, I'm going to go ahead and just kind of give you an idea and let you know where we are and how we got there. Kind of give you a thumbnail sketch of what we really believe the issues to be and then where we're headed from there.

Lara had given you some of this information. 2006 and 2007, the Technical Basis Documents were first issued. In January through April of 2006 there were a series of five worker outreach meetings. Those have been incorporated into our Site Profile review.

And then in June of 2007, SEC Petition 93, which was a 83.13, I believe the initial period was from 1955 through the present, basically, including the post-1987 remediation

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period.

The report was sent to the advisory Board in February of 2008, discussed by the Board in April and June of 2008 and then in August of 2008, we submitted our review of the Santa Susana Site Profile.

And, so, this is somewhat unique in that the Site Profile review was conducted in the midst of ongoing SEC deliberations in the petition process.

Our review uncovered a total of 39 findings. You can see how they're parsed out in the slides based on the different TBDs with most of the findings associated with the internal dose TBD, Number 5.

On August 26th of 2008, ten days after we released our review we had the first Santa Susana Work Group meeting. And it's important to note that all the Site Profile findings were discussed, but none were officially closed.

Obviously, within a ten day period,

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the petitioners hadn't had time to review and comment on our review. There was the issue of ongoing SEC deliberations.

And so the findings really discussed in terms, the potential SEC impact. And those that were determined to be Site Profile issues at that meeting were pended until the SEC issues could be resolved. Excuse me, I've got a little problem with my voice here.

The Work Group agreed that SC&A should go ahead and combine some of the closely related findings. This was kind of situation where NIOSH was getting hit from several different angles on one given issue. And so we went ahead and prepared a new SEC issues matrix and condensed everything down into a total of 13 findings.

These are really a mixture of petitioner concerns, issues that were identified by NIOSH and then some of the combined SC&A findings.

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And on April 17th of 2009, we had the second Work Group meeting. Oh by the way, this is the issues matrix, it's the 13 findings are the ones that are still in the issues matrix that we're working from today.

NIOSH was tasked with several action items for the next meeting which was held in April of 2010. And during that intervening period there was a great deal of SEC activity that took place.

Basically, the Board recommended a Class be added to the SEC based on Petition 93 which was from January of '55 through December of '58.

And then, in November of 2009, Petition 156, which was an 83.14, which was from NIOSH was kind of fast-tracked. It was, obviously, qualified very quickly. January 15th, 2010, sent to the advisory Board. It was discussed at the February 9th, 2010, Board meeting that I believe was here at Manhattan

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Beach.

And then in March the Board recommended another second class be added to the SEC which was from January 1st, '59 through December 31st, 1964.

So the combined SEC's basically cover the period of January 1st, '55 through December 31st of 1964. And, obviously, the outstanding SEC issues may impact that 1964 end date.

April 2010, a third Work Group meeting, the 13 issues were discussed in context of NIOSH's actions from 2009. Also we presented review of the Rev 0, OTIB 77, which was the external dose coworker data set and coworker model.

We found five main issues all related to the appropriateness of the Boice database for coworker modeling. NIOSH had some tasking, obviously, to complete the external and internal dose coworker models and to provide updates to the environmental TBDs.

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And we were to review those products as they were made available.

And in June of 2014, as Lara's mentioned, NIOSH released their White Paper on neutron dosimetry. We began reviewing that and in October of 2010 we were pretty close to completion.

However, that was never finished up because of competing priorities regarding some of the other sites that we're dealing with. And let me get to the next -- here we go. Hang on, I think we missed one.

Okay. Basically, although NIOSH was busy, you know, collecting data and putting together these coworker models, there was really no SC&A or Work Group activity since 2010 until 2014.

And in March, NIOSH released OTIB 80 which was the internal dosimetry data set. And this used the Boeing database and abandoned the Boice data set. We commenced our review in

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July of this year and we're not getting to the point where we're close to completing that review.

There were some brief discussions at the April and July 2014 Board meetings and then the fourth Work Group meeting was a teleconference meeting on October 16th, 2014, in which we kind of tried to jump start the SEC finding resolution process, get reacquainted with everything and NIOSH provided some of their updates on the forthcoming work products, OTIB 77 and the environmental TBD revisions.

Where do we stand, the issue matrix, the September 24th update of that that was used at meetings posted on the DCAS website at the URL that's listed here.

Only one finding was closed. This was Number 9, which is the question of which areas, whether it was going to be Area IV, Canoga Park, DeSoto and Downey, how we should be considered in the SEC and what were the start

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dates for the SEC.

And our research, Boeing is up here 2005, made it pretty clear that before 1955 there really were no radiological activities taking place. It was mostly design and construction.

And, obviously, the petition was for Santa Susana, Area IV, so the Work Group felt that we could go ahead and close this one out.

There's one open combined finding that depends on the internal coworker model. This is Number 10. The adequacy of the internal monitoring program really subsumes five sub-issues related to the completeness of the bioassay data set and how well it correlates to specific radionuclides.

The issue of missing radionuclides, those are really the big ones, and then the fact that there was really no internal coworker model. You've got to keep in mind that some of these findings really date back from 2009, so.

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There were four open findings that depended on the review of external coworker models. This is Number 1 and the sodium reactor experience incident in 1959. This issue of maybe a technical shortfall in the external radiation monitoring badges.

Number 7, identification of workers with blank radiation exposure records. This is a NIOSH generated issue. Those previous 2 were petitioner issues.

Number 13, this was a combined SC&A finding and this is all related to the external dose coworker model. Mainly, it subsumes three areas of concern, one that there was no coworker model developed at this point.

There was the issue of low energy in thermal neutrons and that was really below about the 500 keV cut off the NTA film. And there were some questions regarding the dosimetry response to low energy photons.

There are four findings that are open

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that depend on revisions to both the internal and the external coworker models. Now, this is the petitioner issue of uranium fires and how those are going to be treated.

The sodium burn pit, this is another petitioner issue, whether the facility was adequately monitored and the records are missing.

Number 8 was a NIOSH issue. This was about monitoring of firemen who might have been involved with fires or been around the sodium burn pit when activities were going on there.

And then Number 11 is kind of broad-based finding, another combined SC&A finding about incidents in general. So there's going to be some overlap here with the sodium reactor experiment and the sodium burn pit.

Three findings dependent on the environmental TBDs. This is the issue Number 3 of tritium plumes. The workers may have been

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exposed to contaminated drinking water on site.

The petitioner issue of insufficient air monitoring, and another combined SC&A finding, Number 12, lack of information on environmental exposures in general.

This just kind of subsumes two issues, one being the back extrapolation of stack emission data for the years 1971 to 1999 when the measurements were taken to earlier periods from, in this case, would be '64 through 1970.

And then also the contaminated ground water impacting onsite drinking water, which is kind of overlapping a bit with petitioner issue Number 3.

Where do we stand now? Our review of the June 2010 White Paper on neutron/photon ratios was submitted on October 23rd. So I think NIOSH has had some time to start looking at that.

Now, we're just about done with our review of TIB-80. We'll have that probably in

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DOE review within another week or two. We're still awaiting the release of TIB-77 and the environmental TBDs. And so, obviously, the open SEC issues are contingent upon complete reviews of all three of these documents.

Our next Work Group meeting is going to be happening, I believe, back to back with the Kansas City plant meeting in January of 2015. And that really completes my update. If there are questions, I'll entertain those.

CHAIRMAN MELIUS: Board Member questions? Oh, Paul.

MEMBER ZIEMER: Sorry. John, has SC&A, to your knowledge, examined any data that tells us where the tritium plume is located and where it's migrated to or has NIOSH?

MR. STIVER: That's pretty well --

MEMBER ZIEMER: Well, actually --

MR. STIVER: -- established.

MEMBER ZIEMER: -- it was in the report, but I don't recall seeing it.

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MR. STIVER: Yes, it's in the TBDs. It's been pretty well-established where the pluming has -- it's really a matter of were workers monitored for that and who --

MEMBER ZIEMER: Well, you mentioned --

MR. STIVER: -- might expect --

MEMBER ZIEMER: -- the drinking water. I'm really asking what evidence there is that it may or may not have?

MR. STIVER: Well, we were --

MEMBER ZIEMER: Where does the drinking come from on the --

MR. STIVER: Well, there's --

MEMBER ZIEMER: -- site and where's the plume?

MR. STIVER: To my understanding, there was some of the monitoring wells showed contamination.

The ones that were kind of downgraded from the reactors or, basically, a neutron

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activation with water would produce the tritium and then that would, you know, flow down grade.

However, the drinking water wells, to my knowledge, never really showed any contamination. NIOSH, and you guys can correct me if I'm wrong, but I believe this was sort of a kind of a high-sighted approximation to account for the possibility that there was some intermixing with the aquifers that could have contaminated the drinking water wells.

And so there was a great deal of discussion about this, I believe, in 2009 in a Work Group meeting. And we were kind of in agreement with them at the time that the well, I think it was Number 34, was a pretty solid estimate to be used in this.

But, you know, once again, until we see the revised TBDs, we really can't comment on the adequacy of that.

CHAIRMAN MELIUS: Thanks. Any other Board Member questions? David.

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MEMBER RICHARDSON: I just had a few clarifying questions. On one of your slides you said one of the open issues that was related to internal coworker models was insufficient correlation of bioassay data to specific radionuclides. What did that mean?

MR. STIVER: Well, and I think that was mainly regarding the gross beta and how that would then be correlated to the fission products. This is an issue, I believe, that was raised back in the Site Profile review.

But there was that and I think the bigger issue there was the missing radionuclides. You know, the new model basically looks at plutonium, uranium and then, you know, basically mixed fission products. And so that still leaves some others that really are not accounted for --

MEMBER RICHARDSON: Okay.

MR. STIVER: -- so.

MEMBER RICHARDSON: And then on a

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subsequent slide, there were four open findings about the external coworker model and one of them was a Tiger Team report indicating inadequate radiation badges. What do you mean by inadequate?

MR. STIVER: I think this was related to, I think, it was post-1987 when there was DOELAP accreditation for the film badge dosimetry programs.

And I believe this is a petitioner issue that they were concerned that that might have rendered some of the dosimetry questionable.

And we were kind of under the impression at the time that we discussed this that at least, you know, during the previous period that probably wouldn't be an issue really because, you know, it was really more about DOELAP accreditation as opposed to whether the badges had some sort of a technological shortfall.

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MEMBER RICHARDSON: Okay.

MR. STIVER: But once again, until the --

MEMBER RICHARDSON: So this --

MR. STIVER: -- TBD's released, we can't really close this out.

MEMBER RICHARDSON: Okay. So it wasn't a judgment about adequacy or inadequacy of coverage of the badging program --

MR. STIVER: Right.

MEMBER RICHARDSON: -- but it was a question about the performance of the badges.

MR. STIVER: It was more of a performance issue, you know, with the badges.

MEMBER RICHARDSON: Okay.

CHAIRMAN MELIUS: Okay. Any other Board Members with questions? I have one. I'm not sure if it's for John or for NIOSH, but I just want to make sure I understand the issue of the 1965 SEC, sort of how that fits into this schedule. It's sort of in the background here.

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MR. RUTHERFORD: Yes.

CHAIRMAN MELIUS: I can't quite tell.

MR. RUTHERFORD: Okay. Well, I wanted to, actually, make a clarification anyway. John said that the qualified period actually extended much farther than that. The actual qualified period for the petition ended in 1965. And so, that's why the remaining year that's open is 1965.

CHAIRMAN MELIUS: Yes.

MR. RUTHERFORD: Okay. And right now, we don't have an SEC issue that would move that forward to extend that Class or we haven't identified one as of yet.

And, so, our position was at the time when we added the Class was up through 1964, we made the recommendation to add the Class, but we'd seen nothing at that time beyond 1964.

CHAIRMAN MELIUS: It's sort of bureaucratic, but did we actually close out for '65 and --

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MR. RUTHERFORD: No, that's, again, another one of the one's that --

CHAIRMAN MELIUS: Okay.

MR. RUTHERFORD: Yes.

CHAIRMAN MELIUS: Okay.

MR. RUTHERFORD: All right.

CHAIRMAN MELIUS: Okay. But we're expecting that the work that's ongoing --

MR. STIVER: Yes.

CHAIRMAN MELIUS: -- with the coworker models, I suspect would address that '65 and I think also if we found issues that would extend beyond '65 as part of the Site Profile review, there are other ways of addressing that through the SEC process, 83.14s and so forth. So it wouldn't be ignored, but we do have to address '65 at some point. Okay. Good. Any other questions? Yes, David. Yes.

MEMBER RICHARDSON: Can I? And this is, again, just to help me wrap my head around

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the -- there were roughly 14,000 electronic images of paper files with radiation dosimetry data provided and that would be either external or internal dosimetry information.

Of those there were five or 6,000 of them which were not blank folders, if I'm understanding this correctly.

And this pertains to the radiation dosimetry information for workers at all four sites of which the Boice report says there's maybe five or 6,000 people radiation monitored and maybe 42,000 people also employed at those four sites who are not radiation monitored?

DR. HUGHES: I'm sorry. I'm having trouble following. Yes, 14,000 files is what we received, each file representing a worker. Not every worker was monitored at all.

Some were only monitored for external, and I think the 5,000 might be the internal number. Some were monitored for external and internal --

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MEMBER RICHARDSON: Yes.

DR. HUGHES: -- exposure. So depending on the worker, there were a lot of workers where you just would have a card with somebody's name in the file, but no dosimetry entries.

And I would have to go back check my numbers because there's so many numbers, I simply just don't --

MEMBER RICHARDSON: But then --

DR. HUGHES: -- remember.

MEMBER RICHARDSON: -- the total workforce population --

DR. HUGHES: The --

MEMBER RICHARDSON: -- at these four sites --

DR. HUGHES: -- 40,000 --

MEMBER RICHARDSON: -- is --

DR. HUGHES: -- I think is the Rocketdyne. Yes, that's the --

MEMBER RICHARDSON: Yes.

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DR. HUGHES: -- entirety of the four sites and the --

MEMBER RICHARDSON: So the importance of the coworker models as they've been highlighted as issue here, partly relates to the fact that radiation dosimetry information maybe is available for 5,000 out of 48,000 or --

DR. HUGHES: Well, not all of these 40,000 would be covered under this program. This is the entire workforce that was looked at by Boice who did the entire Rocketdyne, Rockwell International workforce at the time, so --

MEMBER RICHARDSON: So that might --

DR. HUGHES: -- this is one of the issues that currently only Area IV is covered, but there's also Area I, II and III which, you know, the workforce was in all of these areas.

But, however, currently, what's covered under this program is only Area IV, so

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you would only look at the workers from Area IV follow-up program. So the 40,000 encompasses all workers at all sites, so.

MEMBER RICHARDSON: But going back you had described covered periods, I think, at all four.

DR. HUGHES: That is correct.

MEMBER RICHARDSON: And so it's not possible that you would need to reconstruct doses for somebody who had a non-covered cancer at any of those --

DR. HUGHES: Yes.

MEMBER RICHARDSON: -- four?

DR. HUGHES: Yes.

MEMBER RICHARDSON: Okay. I'm sorry. You know, it's --

DR. HUGHES: It's --

MEMBER RICHARDSON: -- not easy and I'm trying to catch --

DR. HUGHES: -- a complicated --

MEMBER RICHARDSON: -- myself up --

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DR. HUGHES: -- site --

MEMBER RICHARDSON: -- on it.

DR. HUGHES: -- and with the different areas, it gets very complicated.

CHAIRMAN MELIUS: Okay. Phil, then Brad.

MEMBER SCHOFIELD: You know, if you read some of the interviews and stuff, people talk about coming up for Canoga, DeSoto and going into Area IV and back and forth between the different facilities.

My question is what kind of documentation? Do they have a guard gate with a very good documentation system to know who was coming into Area IV, who wasn't, where they were coming from or in some cases even where they were going?

Because you have these people going to these different facilities, including Area IV, but they might have been stationed out of Area II, DeSoto, Canoga. We don't know how some of

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these people went back and forth, but according to their interviews, they did go back and forth.

DR. HUGHES: Yes, we're aware of that and as far as a I know the dose reconstruction, if there is such a situation, tries to address. But, however, mainly we go by the dosimetry records that are available for the worker.

Since we don't assign area monitoring, we assign the dose based on internal/external monitoring or in cases where that's not available, using the coworker models.

CHAIRMAN MELIUS: Okay. Brad.

MEMBER CLAWSON: I'm trying to understand, a little bit like Phil, the area there because as we saw yesterday how everything kind of runs downhill and I'm pretty sure that the contamination that from some of these went elsewhere.

How are we able to just look at Area IV? They had other DOE things going on in Area

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I. I'm trying to figure out how we're able to just put our hands around Area IV. What's --

MR. HINNEFELD: Well, I can just offer that Area IV, if you're talking about Santa Susana Field Laboratory, Area IV is the covered facility. And we didn't make that decision. And so we reconstruct doses that occur on the covered facility. That's what the statute says.

Reconstruct doses that occurred on the covered facility. If that covered facility affected a neighbor, the way the statute stands now, that neighbor has no remedy under our program.

MEMBER CLAWSON: Okay. But if you were in Area I doing work for DOE, then that tells me that you've got a problem with the covered area. So how do we remedy that?

MR. HINNEFELD: That's another agency's decision.

MEMBER CLAWSON: Okay. So that's

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the Department of Labor?

MR. HINNEFELD: Yes, I guess. I think that's Labor.

MR. RUTHERFORD: Let me. And recognize, if we have information that there was DOE work going on, I mean, real information documents that there's DOE work going on, we would provide that to the Department of Labor and Department of Labor would make that decision. We've done that I don't know how many times in the past --

MEMBER CLAWSON: Okay.

MR. RUTHERFORD: -- so.

MEMBER CLAWSON: Right. I'm just wanting to understand how we can parcel that up. Thanks.

CHAIRMAN MELIUS: Wanda and then I'm going to close comments because we need to move along here. Wanda, do you have a question or comment?

MEMBER MUNN: My comment has to do

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with how easy it is to confuse what we're talking about when we speak about this site. When people talk about there being four areas, in my mind I'm thinking four areas are Area IV, DeSoto, Downey, et cetera, Canoga and other people who are talking about four areas are talking about Area I, II, III and IV.

And I would hope that we'd be very careful in distinguishing that in the way we talk about these things because it's very easy, I think, to find yourself talking about an area on top of a mountain when someone else is thinking you're talking about an area down in the flats at Downey or someplace.

CHAIRMAN MELIUS: Thank you. Now, we'd like to hear from the petitioner, Bonnie Klea.

MS. KLEA: Is there anyone here who did not go on the site tour?

CHAIRMAN MELIUS: Oh --

MS. KLEA: Okay.

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CHAIRMAN MELIUS: -- lots of us.

MS. KLEA: Anyway, my name is Bonnie Klea and I've met some of you before. And I so appreciate you taking another look at Santa Susana. We have so many workers that have not been paid, a lot of families without fathers, a lot of widows.

Anyway, I wanted to tell you a little story. I've been working with EPA for 20 years since I was diagnosed with cancer in 1995.

I worked at the SRE and I worked in the nuclear area. Wasn't told what they were doing up there, didn't know anything about nuclear because I was so young. But I was diagnosed with bladder cancer 25 to 30 years after I was up there. And that's second only to lung cancer. Lung is number one, bladder is number two.

But I just wanted to tell you a little story from the EPA's historical site review. Anyway, this is the reservoir. Here's Area IV.

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The reservoir was built in 1919 to capture the water from Area IV, 1919. There was a burrow, flat -- what am I trying to say, fault. There's a fault that runs from here to fill the reservoir and it was built in 1919.

In 1954, we found a memo written by the company saying well, they'll build the reactors there and there's no problem if there's an accident, they'll just divert the water.

That's what they did. We had, of course, you know, the partial meltdown in 1959. By 1962 we have records of monitors put in the reservoir with high levels of radiation. We have those records.

By 1968, they built big concrete diversion paths for all the drainage from Santa Susana to go directly into the river instead of into the reservoir.

By 1969 the reservoir was closed. And that reservoir was water served to everyone in the San Fernando Valley. I don't know how

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many millions of people there were.

We have a little community right over here called Hidden Lake. In the earthquake of '94, the lake was smelly and dirty and they called in a remediation company to clean it. And they said we can't clean it because your sediment is all full of TCE. So we know stuff got off site.

And in the 1959 sodium reactor experiment accident, the workers in Area I all had to have their cars repainted. And we have historical interviews with the workers that EPA did and many comments in there about having their cars repainted.

And we just had a meeting, just a few weeks ago, with John Pace, who was one of the operators trying to shut down the reactor. And he said they knew the wind data and they knew the releases were going to go all over the San Fernando Valley and Eastern Simi Valley.

And they had to release the gases or

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blow up the reactor. And so they released the gases for two to three weeks before they could shut it down.

But, anyway, I'm grateful that you're here taking another look at the situation. I'm the one that turned in the drinking water data, went to the Health Department and then to our County and found their records that, indeed, Ventura County and Rocketdyne knowingly at that time, gave us water that was contaminated and they knew it, from the wells.

And we were in a drought and also during that drought they started recapturing the Area IV water run-off. This is all the nuclear area. And they piped it up to these tanks up here and used it for every rocket engine test.

So not only was that water contaminated, it was storm water run-off, it was used to cool down the rocket test and so whatever was in it was airborne again.

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Many of the workers are sick, who worked in other areas. And this is Area IV, across the street was Area III. We had all the maintenance workers over here who would come over and clean up spills and fires.

In our audience today we have one of the auxiliary fireman's widow who is here and she'll be talking about how her husband was called into the SRE during the accident.

And he went in with a fire extinguisher to put out spot fires, didn't know and he had to decontaminate and bury his clothes. And he's died of cancer.

So we have that worker who is not getting compensated because he was an engineer over in Area I. And we had DOE operations everywhere.

Over here in Area I we had an oil rig that was a drop tower to test the fuel rods so they could practice dropping them into the reactor. We had DOE workers everywhere.

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And I worked up here. I don't remember going through a gate. Once I came in through the main entrance I don't remember any other place where we had to show ID to get into Area IV.

And during the SRE accident the workers were all sent home. They were heavily contaminated and so they pulled in workers from all the other areas to come in and to help them shut down the reactor.

And they threw all the debris from the SRE out in the back lot. And John Pace should be on the phone today to talk about that.

So I can't think of anything else that I'm missing. It's a very toxic site. And we found in one of the canyons, somebody used it as a dump and they had barrels that look to similar to what I've seen at Santa Susana where they took barrels of waste and got behind a board and blew them up.

They did that in the burn pit. We

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found 55-gallon drums in a canyon right off site that all had high powered rifle holes in them. So there's a lot of history and we're still trying to find out everything.

But, anyway, thank you again for coming. I can't think of anything else I'm forgetting. And like I say the workers came from everywhere --

CHAIRMAN MELIUS: Yes.

MS. KLEA: -- the maintenance workers, the fire department was over here, the cafeteria was here. I have a lady whose mother worked for one of the cafeteria companies who provided food. And so the cafeteria was right next to Area IV.

And that company's out of business, so her mom who died of lung cancer can't get compensated for that because they can't find the subcontractor. So I'm hoping that you'll get that SEC moved forward. I'm hoping through the whole DOE period, I think it was '89, not

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'87.

I even know clean-up workers who are sick just from doing the remediation up there. So thank you and I'm hoping and I'm praying --

CHAIRMAN MELIUS: Okay, ma'am.

MS. KLEA: -- to help some of the widows. Thank you.

CHAIRMAN MELIUS: Thank you. Okay.

MS. KLEA: Do you have any questions? No?

CHAIRMAN MELIUS: I don't think right --

MS. KLEA: Okay.

CHAIRMAN MELIUS: -- now. Thanks. Okay. Now, we go into a formal public comment period and so I will have Ted tell you the rules.

MR. KATZ: Yes, just --

CHAIRMAN MELIUS: These are pretty simple, so.

MR. KATZ: Yes, very simple. It's just for those of you who have comment, your

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comments -- all of the proceedings of these meetings, including this today, are transcribed and published in a transcript on the NIOSH website.

So everything you say, verbatim, will be repeated there on the NIOSH website, so if you have private things you talk about about yourself or about another party, all of those will be captured.

The material you give about yourself will be published just as you say it without any kind of redaction and without any editing.

If you talk about another person, though, that's not here speaking for him or herself, the things you say about another person may be edited, redacted to the extent they need to be to protect that person's privacy because they're not here to state that they actually want this information released to the public. So just to let you know, that's how the transcript for this will be handled.

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CHAIRMAN MELIUS: And I would just add, if there's some private personal information or otherwise that you, or you prefer not to talk about certain issues in front of the group, there are people from NIOSH and from SC&A here who would be glad to talk to you or follow-up and so forth.

We're not limited to just what people say in the public comment period. And what we get later can be as valuable and is considered as important in terms of what applies to helping address the issues at that site as what's said in the public comment period. So it's not weighed any differently or treated any differently onto that.

How we do this is we do go through and I have a listing and I'm going to go in sort of an initial order of what people did. We will first deal with people that are in the room and then we will go on. We take comments over the phone also and we have some people that are

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signed up to do that. But first I'll start with people in the room and the first person I have listed is Charlene Roesch.

MS. ROESCH: My husband wrote his occupational history before he passed away.

My name is Charlene. I'm the widow of James Roesch who worked at Rocketdyne for Santa Susana for over ten years. He died in 1998.

The details of his employment, he did many things up there as are listed in his occupational thing that he did. There was a tab that shows where they have the nuclear contamination and so let me just kind of paraphrase or read a little bit. It's kind of hard, so bear with me.

In approximately 1957 he was assigned and trained as an auxiliary fireman. His badge number's 219 which I have with me. They had training sessions monthly and he really felt that he benefitted from that.

And moving on to 1959, you all know

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about the partial meltdown of the nuclear reactor. He was called in as an auxiliary fireman. He was given a hard hat and a fire extinguisher and told to go extinguish spot fires.

He went in the building. He described it as being smoky and twisted and the fire was basically out. He saw a little room with a closed door inside the reactor building and went inside. And there were, he called them like tech guys in lab coats and they were doing something feverishly around this area.

He thought so maybe later on, maybe something with the fuel rods, he wasn't sure. But when he went in they yelled at him and said what are you doing in here? And he said, well, I'm looking for spot fires. So they said get out of here, there's no fire here.

And he left and he continued his job. And then after the fire was all done, they took the boys to the firehouse and had them shower

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and shampoo. He said it was creepy because they watched him do it, gave him coveralls to come home in and told us to wash his clothes, which I did.

He was diagnosed with multiple myeloma in 1996. I remember him asking the doctor how do you get this, and they said well, one of the ways you get it is nuclear radiation. And he went oh. And that is one of the covered illnesses that we know about.

He had tumors all up and down his spine. It was really advanced by the time they caught it on him. And the X-rays, there were a few vertebrae on his neck, especially, that were just shadows on the X-ray.

And they didn't know why he wasn't dead or paralyzed at that point. But he went through major chemo, radiation and then a drug called Aredia, which helped to rebuild bones.

And for a while he was basically kind of cancer free for a little bit, but they don't

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call it really remission. And then it came back with a vengeance and he died in February of '98.

And, basically, been denied compensation because he didn't normally work in Area IV. He was a mechanic in Area I, if I remember. And so every time it would come up again, they'd say oh, you have a wonderful case, you know, no problem, you'll get compensation. And then because he's not an Area IV, it was denied.

So I thank you for listening. If anybody has any questions. He wrote his history down and he did a lot of things up there. Then the last page shows an article that was done years ago with me holding his auxiliary fireman's badge which I brought if you want to see it. But it's not contaminated. He didn't have it on that day.

And so thank you for your attention to this matter. And I certainly hope that things

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happen, not only from me, but I've heard a lot of sad stories from other fireman families as we've gone to many of these meetings and it's hard every time we do it.

But if people get compensated or at least get recognized for what they did, it would be nice. So I thank you. Any questions?

CHAIRMAN MELIUS: Okay. Thank you for --

MS. ROESCH: Thank you.

CHAIRMAN MELIUS: -- sharing. And the next person I have listed is Lorraine Kurowsky, is it?

MS. KUROWSKY: Kurowsky.

CHAIRMAN MELIUS: Yes.

MS. KUROWSKY: I have a similar story. My husband started to work in the --

CHAIRMAN MELIUS: Well --

MS. KUROWSKY: -- area quite --

CHAIRMAN MELIUS: -- can you get up to the mic and then start over again. I'm --

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MS. KUROWSKY: My husband started working at Canoga Park 12/11/78, and they refused my application for recognition for what he did. And they said, well, he didn't work with radioactive material enough. He was only 22.78 percent.

And then they said that he wasn't really working with radioactive material, but yet he told me two stories that stayed in my mind.

One was that there was a deer struggling walking up in that area in IV at Santa Susana. And he says it was struggling and it was collapsing and it would try to get back up. And he said after a while it just expired.

And someone said, hey, you guys in this area go clean it up. And my husband was a blue collar worker and he did crating and packing. So he says go clean it up and let's pack it up and get rid of it, whatever get rid

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of meant. I don't know.

Then also they were dispersing a truck and my husband worked with this little guy. Just my husband, he's a big guy, 6'5" and he worked with this little guy who was, what, about 5-foot.

And my husband was going on the back of the truck lifting these, what they called pigs to take them off of the truck, and making sure that it wasn't too heavy for his coworker.

So he says, hey, he says you can handle some of these, but I'll stay up here. And he was handling these pigs that I don't even know what they were.

But anyway, he would hand them to him. And when he handed it to his co-worker who was this little guy, he handed it to him and it just went off.

And then grabbed this Mr. Waco and took him off the site and washed him down and took his clothes and gave him coveralls and sent

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him home.

And he did get cancer and die of cancer. But they never touched my husband. They never said anything to him. He says, you know, just go on your business and that was it.

And yet they said because he had 22.78 he wasn't qualified. Well, he died in '01 -- in '03, I'm sorry. He had '01 in cancer in his pancreas and they said it wasn't part of what the cancer they were looking for, but then again, they said, well, it could have been, but it was always not here not there.

And as the other lady that stepped up, we feel sorry for the people that weren't compensated because we did lose our husbands. My children lost their father.

And it's just hard. And just thinking we should have been recognized in some way. Thank you.

CHAIRMAN MELIUS: Okay. Yes. Again, just if you want to talk to some of the

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people here from NIOSH and may be able to do some follow-up on the individual case if there was. I'm not sure how much information they had when they were doing the dose reconstruction. It may be helpful. But thank you. D'Lanie Blaze, is it?

MS. BLAZE: D'Lanie.

CHAIRMAN MELIUS: D'Lanie, I'm sorry.

MS. BLAZE: Yes.

CHAIRMAN MELIUS: It's not your writing, it's my eyes.

MS. BLAZE: The acknowledgment of Santa Susana Field Laboratories complete site history on behalf of Area I, II and III personnel has been a passion of mine since 2007.

I'm very happy that the Presidential Advisory Board on Radiation and Worker Health has come back to Santa Susana Field Lab with an interest in touring Areas I, II and III and that, at last, an extension to the Area IV SEC

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is moving forward.

We are grateful for your presence and your efforts on behalf of Santa Susana Field Lab personnel. Worker advocates and SEC petitioner and former worker and a site historian were not permitted to go on yesterday's tour of the facility.

In lieu of our absence, it was requested that we provide a list of things that we'd have liked to point out to the Advisory Board if we had been on the tour.

Each of you were provided with a copy to your guide to sightseeing hot spots of the Santa Susana Field Lab which features a detailed fold-out map of Atomic Energy Commission and Department of Energy activities throughout Areas I, II and III.

This guidebook is based on historical documents that were published by Department of Energy, its contractors and other agencies.

All information is cited. All

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resources are included in their entirety on an accompanying disk. And over 300 worker interviews that were conducted by Department of Energy and the Environmental Protection Agency in 2009 are also included.

Upon your review, we are confident that you will find that Areas I, II, and III satisfy legislative criteria that is used to determine a Department of Energy facility under the statute.

Currently, Santa Susana Field Lab claimants are denied EEOICPA compensation at a rate of nearly 90 percent, often based solely on an Area I, II or III work location.

However, Area I, II and III workers, employees of a DOE contractor, were rotated to Canoga and DeSoto facility regularly.

Those are both SEC facilities wherein the SEC covers all workers. It is therefore illogical to exclude Area I, II and III personnel from EEOICPA.

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Further, as illustrated in the guidebooks, Atomic Energy Commission and Department of Energy's engagement in nuclear laser and coal gasification research, waste, storage and disposal of Area IV material, personnel who were monitored for radiation exposure, accidents and spills involving DOE waste and construction, modification and integration of new and existing facilities for use by or on behalf of Department of Energy throughout Areas I, II and III of SSFL is very well documented.

Again, this documentation has been provided in DOE's own words, from their own published documents. There is no denying any documented history by this agency and its predecessors.

And Department of Energy may have put it best in their statement that, "Historically, great benefits have been obtained by separating growing and diverse programs and test

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facilities at the Santa Susana Field Lab."

It is my sincere hope that you will ardently support and argue for the inclusion of Area I, II and III personnel to EEOICPA in accordance with the legislation and in the spirit of the Act as it was intended by Congress.

I wanted to address the question on the tritium plume that was raised after SC&A's presentation. The tritium plume would be underneath the SNAP Area IV Number 59.

And Department of Energy acknowledged transport of contamination and tritium to the site wide reclaimed water system and stated in the guidebooks, that you guys have, that the drainage from SNAP Building 59 reached the Silvernail pond in Area III which was the entry point to the site wide water reclaim system.

Now tritium has also been discovered in Areas I and II. And there are two documents, specifically, on the disk that you were

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provided yesterday that speak to the tritium plume, one by the EPA, the Rocketdyne Santa Susana Field Lab sample analysis report from 1989 and the document, Radiation Protection and Health Physics Services, tritium production and release to groundwater at Santa Susana Field Lab. That's on your disks.

I thank you very much for coming to Santa Susana and for the opportunity to comment.

CHAIRMAN MELIUS: Okay. Thank you. Okay. Is there anybody else in the audience here, who wishes to speak to the Santa Susana site before I go to the phone? Okay. Good. Is there anybody on the phone who wishes to speak to the Santa Susana site or offer comments?

MR. PACE: This is John Pace. Can you hear me?

CHAIRMAN MELIUS: Yes, we can. Thank you, Mr. Pace. I had you --

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MR. PACE: Okay.

CHAIRMAN MELIUS: -- on the list here. Go ahead.

MR. PACE: Okay. Well, I would like to help Mrs. Roesch out there. She spoke, one of the first speakers. Her husband was a fireman and I was, when she told the story, I was there at the time and at the SRE reactor when her husband through the door to help put out the fire that we had.

We had a fire and explosion in the high bay area at the time, pulling out the sodium pump which caused the reactor to go down in 1959.

And we were trying to replace it. As we was gotten it all lose and a man come out of the down the floor where it was at, came up. And we had a kind of a tent we had covered over to keep the oxygen out.

And then when he came through, somehow it allow oxygen in the area where that sodium

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was at with the sodium pump and it had a big explosion and a fire on top of that.

And that's when Mr. Roesch came with the, you know, fire department to see if he could help us out. And he come through a small room that we had there and into the high bay area.

And we yelled at him to get out of the building or out of the deal just exactly like his wife just had told you. And because we was worried because with the explosion and all the radiation that came out of the pump area, it was only three feet from the reactor where we was working.

And we was worrying about having other fires here, of more radiation coming up out of the reactor core. So what she tells you is actually true and I'm a witness to that.

And I was there on that. That was an incident that I've talked about many times and NIOSH knows about it. It's on the record with

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them. But I haven't had anything for evidence to prove to them that this occurred.

And I got exposed to a lot of radiation myself on that. Me and three other men, we got blown clear across the room on our tippy toes there trying to keep from falling down.

With that explosion we ended up all having about four showers apiece trying to get that radiation and contamination off us when it happened.

And then most of them went home in the coveralls, we call redlines, what we wear for protection. And I happened to be lucky and have clothes in my locker I was able to wear home.

But I just wanted to be of verification to Mrs. Roesch that I was there and I'll be glad to help her on anything. And I would like to make one, just real quick point, is the radiation that came out of the SRE reactor, and I was there, I was there at the time

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of the nuclear accident and afterwards.

I was there and my crew had started the reactor up and ran the reactor for the two weeks. That's all everybody talks about. They ran a broken reactor, a reactor that wasn't suitable for running, but we was told to start it back up again.

But during that time, a lot of radiation leaked out of that reactor through the fuel elements, the seals around there. The reactor had gotten so hot before we was able to get it shut down on the 13th that it damaged that it was leaking out into the high bay area.

So there's lots there that NIOSH needs to learn about and I've already spoke on this before. I don't want to do a lot of talk on it because there's records of it already, but key thing was just for Mrs. Roesch there.

I was there and I'll be glad to work with her and help her out on that incident there with her husband. So if there's any questions

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anybody would like to ask me that would be fine. And anybody have a question at all or B-

CHAIRMAN MELIUS: I don't think right now. But thank you very much, Mr. Pace, for --

MR. PACE: Okay. And thank you. You --

CHAIRMAN MELIUS: Yes.

MR. PACE: And bye, now.

CHAIRMAN MELIUS: Sir. Anybody else on the phone that would like to make comments on Santa Susana? Okay. If not, I'm going to go -- I have at least three people that have wanted to make comments, I believe, on other sites.

The first one is Terrie Barrie. Terrie, are you on the line? Okay. Terrie, do you maybe have a phone on mute or are we off?

MS. BARRIE: All right. Can you hear me?

CHAIRMAN MELIUS: Oh, now we can. There you are. Okay.

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MS. BARRIE: Okay. Do you hear me now?

CHAIRMAN MELIUS: Yes, we can. Yes.

MS. BARRIE: Okay. I'll start all over again. Good evening, Dr. Melius and Members of the Board. This is Terrie Barrie of the Alliance of Nuclear Worker Advocacy Groups and I thank you for allowing me to call in my comments.

Part of my comment does concern Santa Susana. So I was happy to hear that some of the Board Members and members of the community questioned why Areas I, II and III are not covered under this program.

From the oral history I've heard from the workers and their advocates and apparently attested to tonight, it was not uncommon for the workers from Santa Susana to be detailed from one area and assigned to another.

It seems common practice with all DOE workers. And as you know, workers assigned to

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Areas I, II and III have been denied classification as a DOE worker and are not covered under this program.

A month or so ago, I found a Department of Labor final decision which spells out the criteria necessary for which DOL will designate a site as a covered DOE facility.

The test needed to overcome is that the claimant or advocate must prove that Department of Energy had use of or controlled the site. I need to emphasize the word or. It appears that Department of Labor has a tendency to ignore that word in the statute.

The law states the DOE must have proprietary interest in the facility or have a certain type of contract with that facility. The law does not state DOE must have proprietary interest and a service contract.

The final decision states quite clearly what is needed to prove proprietary interest. And I quote, "The evidence must

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establish that the MED, Manhattan Engineering District (Department of Energy), had rights of ownership, use or control of the buildings in which the employee worked."

D'Lanie Blaze just prepared an excellent guidebook for the Board which gives many examples of the Department of Energy's use of Areas I, II and III.

It is my hope that the Board and the affected claimants petition the Department of Labor to designate Areas I, II and III as a covered DOE facility. And I'd be happy to supply the link to that final decision.

I'd like to turn now to the issues with the Rocky Flats SEC petition. I want to thank LaVon Rutherford for his offer to discuss the issues and I'm looking forward to our call next week.

For those of you who are not familiar with this, here's a brief summary. A man who was assisting a family member with cancer who

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worked at the Rocky Flats facility after 1993, which is the end of the current SEC Class, alerted me to a recent release of NIOSH's occupational internal dose document for the Rocky Flats facility.

The document states, and I quote, "Because of data issues and limitations, no specific methods to bound doses from 233 uranium and 232 uranium had been determined. Therefore, doses to unmonitored RFP workers from neptunium, thorium and 233 uranium and its associated 232 uranium and 228 thorium contaminates cannot be reconstructed."

One would think that means since NIOSH cannot reconstruct dose for these elements, that the SEC Class should be extended.

Please note there is no qualifying statement that limits the years NIOSH cannot reconstruct those in that document. But apparently, this statement is not enough for NIOSH to recommend to the Board to withstand the

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SEC Class for Rocky Flats.

It is my understanding that for some reason NIOSH needs to release the White Paper on neptunium, and I might be wrong about this, before making any kind of recommendation to the Board.

But if they already know they can't reconstruct dose for these elements, why is it necessary to wait for the release of this paper.

I must remind everyone that time is something many sick workers do not have an abundance of. A friend of mine passed away this summer. He did not fall within the current SEC Class.

And as for the worker I mentioned earlier tonight, even if the Board recommends tomorrow to expand the Class for the Rocky Flats facility, outside of a miracle that worker will not live to receive the deserved compensation because of the aggressive nature of the cancer.

Please keep the deteriorating health

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of the workers in the forefront of this process. Thank you again, for allowing me to call in these comments and I look forward to my conversation with LaVon.

CHAIRMAN MELIUS: Okay. Thank you. For those of you that weren't part of the emails, there was -- Terrie Barrie and LaVon scheduled a conference call for next week sometime. I can't remember the date, but --

MR. RUTHERFORD: Next Wednesday at 1:00.

CHAIRMAN MELIUS: Next Wednesday to try to clarify that particular issue. Anyway, thank you. The next person I have to be listed is Jeff Schultz. Jeff, are you on the line?

MR. SCHULTZ: Yes, I'm here.

CHAIRMAN MELIUS: Oh, okay. Go ahead.

MR. SCHULTZ: Thank you for the opportunity, everybody, to speak tonight. My name is Jeff Schultz and I'm in Westminster,

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Colorado.

I'd like to comment tonight on the SEC Petition 192 regarding neptunium-237 exposure at the Rocky Flats plant. My document's recently been made available on the internet.

The title of the document is Validation of Rocky Flats Plant Radionuclide Inventory and the Historic Data Using the SWEPP Assay Data and it's dated August 2004.

The abstract document states that, "This report presents the results of a descriptive statistical analysis of isotopic characteristics of radioactive waste stored at the Idaho National Engineering and Environmental Laboratories Radioactive Waste Management Complex."

In the body of the document there's a section 4.1.4 neptunium. And the document states, "At least some of the SWEPP waste drums contained neptunium-237. However, neptunium quantities are not measured or calculated by

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the PAN/gamma system. Neptunium data are only available when the SGRS absolute system is used.

Of the SWEPP graphite waste drums, only four were assayed using the absolute gamma system, hence, data on neptunium is very limited."

Section 4.2.4 states that, "Measurable quantities of neptunium-237 were found in all but four waste drums for which there was SGRS data."

Section 4.3.4 states, "Since there were only neptunium data for 14 mixed metal waste drums, plotting of the histograms is not useful."

Section 4.5.4 states no neptunium data were available for organic setup waste. Section 4.6.4, "no neptunium data were available for special setups weight."

From this document it's clear that waste shipments to INL were being scrutinized

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for the content of neptunium-237 in this 2004 document.

Further, they were using a statistical approach to guess what amount of neptunium-237 was used from a fraction of data sampled from the drums that were surveyed with the SGRS system.

A coworker of ours on a crew in Building 371, who was assigned to survey drums with a Canberra SGS system in 2002, [identifying information redacted] task was to survey legacy drums which had been in storage for many years in the plant.

By [identifying information redacted] account some of the drums had no labels, other had labels that deteriorated making them illegible. Some drums were re-labeled with information as to what they thought was in those drums at that time.

In the process of surveying the drums with this SGS system, they did a step where they

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actually opened the lid of the drum and took a gas sample from inside the drum.

During one of those tests, [identifying information redacted].

The fumes from the drum had caused [identifying information redacted]. The fumes were probably generated from radiolytic decay of the plastic bags, the chemicals and the radiation all doing their work in the waste drum over that period of time.

[Identifying information redacted].

But [identifying information redacted] does remember operating the SGA system and finding neptunium-237 in some of the drums that [identifying information redacted] surveyed. And [identifying information redacted] has one document in [identifying information redacted] possession that shows the survey of a drum and neptunium-237 was present in that drum in that 2002 period.

[Identifying information redacted]

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also commented that some of the drums [identifying information redacted] surveyed and repacked contained waste from the 1969 Mother's Day fire that occurred in Building 776 and Building 777.

And this is a testament that waste was store in these drums at the Rocky Flats Plant for a very long time. 1969 waste was still sitting in drums.

Our workers contend that detection of neptunium at the site was largely missed since this is very weak gamma and it's merely lumped in with the other gamma signatures and it shows up in the total plutonium count.

And that they weren't really tasked with looking for neptunium. There was no reason to look for it. Only the real modern SGS equipment that was brought to the site around the year 2000 could distinguish between plutonium and neptunium. Reliable neptunium detection in the old days would have required

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the use of a spectrometer.

The Rocky Flats plant had many barrel storage areas. Drums were constantly moved around by workers between 90-day satellite storage areas.

A shell game was conducted, so that drums in these storage areas wouldn't violate the storage time limit of 90 days in these so-called temporary storage areas.

So when the 90 days was up drums would start being moved from one area to another. Materials in suspect corroded drums were repacked into new drums over the years.

When a new requirement was instituted to install carbon filters on all the drums to relieve a possible problem of hydrogen build-up in the drums and possible explosions, a project was started and around 10,000 drums were re-lidded with new lids that had a threaded opening where they could install the carbon filter.

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Many drums had to be surveyed and repacked over the years to comply with plutonium limits dictated by the waste sites to allow our shipments. So the drums were handled a lot.

As we ran out of space in the designated storage areas and because of extended periods of waiting for the website to open and a period of time where shipments to the INL area were curtailed by the governor of Idaho new drum storage areas had to be created because the main drum storage areas were full.

So drum storage started being pushed into the process rooms where the people were. And as workers, we had to work around these hot drums and we had to be shined by these drums on a daily basis.

This caused a lot of exposure to employees. Some of these drums contained neptunium as proven by the fact that neptunium is showing up at the waste sites.

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I'm in the process of trying to find another coworker who works at the Savannah River plant. He was quoted by another employee as saying that waste shipments received at the Savannah River plant from the Rocky Flats plant were surveyed at Savannah River and they were found to have neptunium in them.

And this occurred in the time period of the early 2000s when Rocky Flats was closing and shipping their waste around. When the plant finally closed, the equipment used for the pre-1984 time period when neptunium work was done, that equipment was demolished and removed.

In the process of removing this equipment, ventilation duct work that went to this equipment and the work of the equipment itself exposed our workers to neptunium contamination that was left behind.

This equipment went into waste crates or into cargo containers ultimately shipped to

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the Nevada Test Site. And this material is really only surveyed for plutonium, uranium, and americium. They, again, did not count the neptunium present.

I just wanted to ask the Board Members to consider this evidence that Rocky Flats workers were exposed to neptunium-237 well into the 2000s when the plant was closed and demolished and consider extending our SEC further out to the closing date. And thank you again for the opportunity to comment this evening.

CHAIRMAN MELIUS: Okay. Thank you. And we will follow-up on this and, obviously, NIOSH is here in the audience, too, and they're actively evaluating Rocky Flats. And also our contractor is here, so this information will be available, obviously, to them for follow-up also. So again --

MR. SCHULTZ: Thank you.

CHAIRMAN MELIUS: -- we appreciate

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the thoroughness of your follow-up. That was --

MR. SCHULTZ: Thank you.

CHAIRMAN MELIUS: -- helpful. Good. The other person I have listed who wanted to make comments on the phone is Dr. Dan McKeel. Dr. McKeel, are you on the line?

DR. MCKEEL: Yes, I am. Can you hear me?

CHAIRMAN MELIUS: Yes, we can very well.

DR. MCKEEL: All right. Well, good afternoon to the Board Members and all assembled. I'm Dan McKeel. I'm the General Steel Industries and Dow Madison SEC co-petitioner.

First off, I certainly will sincerely thank the Board for tasking SC&A to review the Dow Madison Appendix C Revision Number 1 that was issued on April 3rd of 2014.

I'd ask that this be done twice and I

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certainly appreciate that it now is going to be done. As was stated this SC&A review is absolutely necessary, the first step toward NIOSH issuing a Program Evaluation Report for Dow even though Director Hinnefeld tells me that the PER for that site is being prepared. I don't know how far along it is.

But my remarks tonight mainly address processing of a revised GSI Site Profile, which is Appendix BB, Rev 1 that Dr. Ziemer mentioned in his TBD-6000 Work Group report earlier this afternoon.

I would note that a GSI Program Evaluation Report based on GSI Appendix BB, Rev 1, which was issued June 6, 2014, has been stopped pending release of SC&A's review which was just released a few days ago for Appendix BB, Rev 1.

The dose reconstruction Subcommittee at its 10/29/14 meeting declined to make a detailed review of four completed GSI dose

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reconstruction cases based primarily on the future availability which was said to be tomorrow by Mr. Mauro of SC&A's review of Appendix BB, Rev 1.

So that document was not available for the Subcommittee Members to review. The SC&A memo we're talking about was drafted by Drs. Robert Anigstein and John Mauro of SC&A.

The dose reconstruction Subcommittee Members on October the 29th were assured by John Mauro that the SC&A finds were minor and would not require changes in dose reconstruction practices for GSI. SC&A stated the main changes involved language tweaking primarily. And this was also suggested today by Dr. Ziemer.

Acting chair Wanda Munn, for the dose reconstruction Subcommittee assured the Members that all dose reconstructions shortcomings and NIOSH four methods had been dealt with from the previous Rev 0 of Appendix BB which came out in June of 2007.

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The Board DFO, Ted Katz, admitted that these older methods were now outmoded. And he declared, and I'm quoting him, "This committee is done with these cases."

Should this unfortunate decision stand, no GSI completed dose reconstruction will have been reviewed by the DRSC. All of this was really shocking to me because I'd been asking Ted Katz and DRSC chairs for years about these GSI case reviews with completed dose reconstructions without getting any satisfactory answers on why no cases had been reviewed, what the case numbers were et cetera.

Anyway, I want to now turn to the comment about my part in Appendix BB, Rev 1. The SC&A review of the revision of Appendix BB also address in part, an extensive critique dated July the 16th, 2014, that I had made of the revised DCAS GSI Site Profile.

I received my copy of the Anigstein-Mauro SC&A memo on November the 3rd

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and then wrote an eight-point initial reaction memo to all Board and TBD-6000 Work Group Members the same day.

My concerns were initially, besides some of the content and the findings of the SC&A report that even though SC&A was reviewing my work as well as that of Dave Allen and NIOSH, my name was not actually mentioned in the report title, the body text or in the references of the SC&A memo.

However, they did quote findings of mine, but they refer to me as the GSI co-petitioner throughout.

So despite these allusions to my work, my White Paper, which was 87 pages, critiquing Appendix BB, Rev 1, which was posted on the DCAS website for three-and-a-half months before the SC&A review was released was not cited in the text of in the references in their 10/29 GSI Site Profiles review memo.

I observed in reading through the

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content of the body of the report that SC&A had cherry-picked and briefly mentioned a few of my many objections to the Allen DCAS 6/16/14 Appendix BB paper.

I equated this tactic to DCAS's Dave Allen's throw them a bone technique. Mr. Allen admitted using this strategy as demonstrated by email for the Hooker Electrochemical site that was obtained by the site petitioner through a FOIA request. DCAS director Hinnefeld later apologized to the Board for these actions on the part of his DCAS personnel.

Further review of the 10/29 Anigstein-Mauro Appendix BB, Rev 1 review memo, and this is the most important thing I'll say to you tonight, showed that there were eight new SC&A findings.

Several of which will require extensive new modeling and dose recalculation by NIOSH. An example, which I also pointed out in my Appendix BB, Rev 1 review was that GSI

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radiographers during the radium 226 area were also exposed to the betatron beam and activated high nickel steel castings with respect to photons and betatron beam neutrons.

NIOSH had not included those important doses from the betatron to GSI radiographers during the radium 226 era. So SC&A noted they had to be added.

Also SC&A differed with NIOSH and Dave Allen on skin beta doses from the betatron and said that those doses needed to be resolved as well, and so on.

The remedies and resolution of these eight new SC&A findings on Appendix BB, Rev 1, would likely occupy several more meetings and White Papers to be resolved completely.

Please recall the 13 SC&A findings on Appendix BB, Rev 0 from 2007 took seven years until January of 2014 to be considered to be completely resolved by the TBD-6000 chair as stated in his report to the Board earlier this

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year.

For the record, the correct full citation from my White Paper dealing with Appendix BB, Rev 1 is as follows. The URL, the link to it is http/www.cdc.gov/NIOSH/ocas/gsi.html. And this is part of NIOSH docket 140 for the GSI AWE Illinois site.

The full citation on the DCAS web page is submission by Daniel W. McKeel, Jr., M.D., GSI SEC 1005 co-petitioner. And the title is Critique of GSI, Appendix BB, Rev 1 by Dave Allen, DCAS, 6/6/14 and it's a pdf two megabyte 87 page file.

In light of all this, I feel even more strongly that the Board has been seriously misled by the TBD-6000 Work Group including the SC&A and NIOSH members on the finality of resolution of the original 13 findings of Appendix BB, Rev 0, both leading up to and during the final nine to eight vote for GSI SEC

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105 on 12/11/12.

And this misleading has continued even afterwards. Even today it is abundantly clear that all GSI Site Profile dose reconstruction findings from the Rev 0 June 2007 version are not fully resolved.

NIOSH and DCAS have more details to work through. And for the same reasons, I believe the D.R. Subcommittee Members were misled on October 29th by SC&A and John Mauro. The new findings are not all minor and cosmetic, far from it. More dose calculations are required by NIOSH.

Finally, I note the SC&A memo was included as a discussion paper for this meeting. During the Work Group reports, Dr. Ziemer mentioned he had seen the SC&A Appendix BB, Rev 1 review.

He did not mention that SC&A was tasked by the Board and the DFO to also review my detailed White Paper on that same Rev 1,

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Appendix BB document.

Finally, I sincerely and humbly ask all Board Members to please read all three papers, Appendix BB, Rev 1 issued 6/6/14, the Dan McKeel critique of Appendix BB, Rev 1 issued on July the 16th, 2014 and the Anigstein-Mauro SC&A memo about Appendix BB, Rev 1 that was issued on October the 29th, 2014.

Thank you very much and I appreciate you're letting me address you. Thank you.

CHAIRMAN MELIUS: Thank you. Is there anybody else on the line that wishes to make public comments? Okay. If not, I believe that concludes our public comment session and concludes our meeting. So we will talk to everybody again after the holidays.

MR. KATZ: Thank you, everyone, for a productive meeting.

(Whereupon, the above-entitled matter went off the record at 5:46 p.m.)

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