

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL  
NATIONAL INSTITUTE FOR OCCUPATIONAL  
SAFETY AND HEALTH

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ADVISORY BOARD ON RADIATION  
WORKER HEALTH

+ + + + +

KANSAS CITY PLANT WORK GROUP

+ + + + +

MONDAY  
OCTOBER 26, 2015

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The Work Group convened via teleconference at 1:00 p.m. Eastern Time, Josie Beach, Chair, presiding.

PRESENT:

- JOSIE BEACH, Chair
- BRADLEY P. CLAWSON, Member
- JAMES E. LOCKEY, Member
- JOHN W. POSTON, Member
- LORETTA R. VALERIO, Member

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## ALSO PRESENT:

TED KATZ, Designated Federal Official  
RON BUCHANAN, SC&A  
PETE DARNELL, DCAS  
JOE FITZGERALD, SC&A  
JOSH KINMAN, DCAS  
WAYNE KNOX, Petitioner  
JENNY LIN, HHS  
JOYCE LIPSZTEIN, SC&A  
JOHN MAURO, SC&A  
PAT MCCLOSKEY, ORAU Team  
JIM NETON, DCAS  
MUTTY SHARFI, ORAU Team  
JOHN STIVER, SC&A

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

2 (1:00 p.m.)

3 MR. KATZ: So good afternoon,  
4 everybody. This is the Advisory Board on  
5 Radiation and Worker Health, the Kansas City Plant  
6 Work Group.

7 Let's get rolling with the roll call,  
8 not to pun. Since we're speaking about a sight for  
9 Board Members and agency-related staff, please  
10 speak to conflict of interest. And let's get going  
11 with Board Members first, beginning with the Chair.

12 (Roll call.)

13 Okay. Just to note, there is a comment  
14 period for Petitioners, and I have statements from  
15 the two Petitioners to read into the record when  
16 we get to that point.

17 Okay, materials. Now last I looked,  
18 there were no materials posted other than the  
19 agenda. Though, I'm not sure --

20 CHAIR BEACH: That's correct.

21 MR. KATZ: -- if that's still the case,  
22 but I looked this morning and that was the case.

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1 But if somebody wants to see the agenda, they can  
2 see it there. It's pretty simple.

3 And otherwise, just let me ask everyone  
4 to mute their phones except when you're addressing  
5 the group. Press \*6 if you don't have a mute button  
6 and then \*6 again to take your phone off of mute.

7 And please, nobody put the phone call  
8 on hold at any point. But hang up and dial back  
9 in if you need to leave for a period. And, Josie,  
10 it's your meeting.

11 CHAIR BEACH: Okay. Thank you. We do  
12 have an agenda posted. We'll just systematically  
13 go through it. There are some documents that I  
14 might mention once we get to those topics. The  
15 first couple are some informational pieces with no  
16 memos or White Papers associated with it.

17 And it looks like NIOSH is going to talk  
18 to us about some new personnel at Kansas City Plant  
19 and then some updated information on mag-thorium  
20 ops. So we'll go ahead and let you do that. Pete,  
21 if you're going to do that.

22 MR. DARNELL: Actually, Josie, I've

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1 asked Pat to do that since, he was responsible.

2 CHAIR BEACH: Oh, Pat. Okay.

3 MR. MCCLOSKEY: Okay, hi. This is Pat  
4 McCloskey.

5 CHAIR BEACH: Good morning, Pat.

6 MR. MCCLOSKEY: Good morning. Really  
7 afternoon for me.

8 CHAIR BEACH: Oh, okay.

9 MR. MCCLOSKEY: So prior, we did some  
10 interviews two weeks ago on the phone with a few  
11 people we missed when we were doing a site visit  
12 there. And prior to setting that up, I spoke with  
13 Lynn Ayers about, you know, finding out how to get  
14 that set up. And there was some back and forth.

15 And in the end, she said, you know, the  
16 whole key to this was figuring out who the players  
17 were, knowing who to talk to. And so, with that  
18 in mind, I thought, well, maybe we should share with  
19 everyone what we know.

20 So Brent Nasca has been a health  
21 physicist there since '89. Well, actually, no.  
22 He was there in '90. He got there after the

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1 promethium incident.

2 But he's moved on to sunnier pastures  
3 in Florida. Still with Honeywell. It's not clear  
4 whether or not we'll having remaining access to him  
5 for questions, but he provided us with a lot of  
6 information.

7 His new replacement as a health  
8 physicist there is a guy by the name of Greg Wolf.  
9 We've talked to him on the phone a couple times.  
10 He comes from their IH group. Has been there at  
11 the site for a while. A couple years now. That's  
12 health physics.

13 Some of you might remember their legal  
14 department. They had Alice Lund for a while, and  
15 then it became Stacy Eide. And she's moved on and  
16 now it's Karen Neland is the legal representative  
17 at the site now.

18 And so they're the people that you talk  
19 to to set up a visit. And Karen's been there for  
20 a while and knows the ropes pretty well. She's who  
21 coordinated our last interview two weeks ago.

22 Other than that, Nelson's already hired

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1 his replacement, Nelson Beard. He's the data  
2 classifier there. Gets us information pretty  
3 quick, but he's hired his replacement and it's not  
4 sure how much longer he'll be around.

5 So that's all I really wanted to share  
6 with you guys about new personnel at the site.

7 CHAIR BEACH: Okay. Thank you.

8 MR. MCCLOSKEY: Sure.

9 CHAIR BEACH: And then if you want to  
10 move on to the second item. Unless there's any  
11 questions or comments, of course, on that first?  
12 Hearing none, so do you have some updated  
13 information for us on the mag-thorium ops?

14 MR. MCCLOSKEY: Yes. Since our July  
15 meeting, we got a memo from SC&A and the Work Group,  
16 questioning the suspension of magnesium thorium  
17 operations at the site.

18 CHAIR BEACH: Right.

19 MR. MCCLOSKEY: And so --

20 CHAIR BEACH: Oh, go ahead.

21 MR. MCCLOSKEY: And so, Pete and Mutty  
22 and I had a phone call. We're trying to do some

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1 brainstorming to see if there's, you know, what  
2 else we could try to try to pin this down a little  
3 bit better.

4           And so what we thought of, instead of  
5 continuing to ask them for all their magnesium  
6 thorium information, we thought, well, in our  
7 records we have part numbers, descriptions of parts  
8 and materials that are made out of magnesium  
9 thorium, such as coupling rings, spring forgings.

10           And so I wanted to have a classified  
11 call so that I could identify maybe weapons systems  
12 or any special projects that these parts belong to.  
13 And then ask for records on those particular parts  
14 or weapons systems, and start to understand when  
15 magnesium thorium, the material, is moving through  
16 the plant that way.

17           And so it turns out none of the  
18 information was classified. We didn't get into  
19 any classified discussions as part of that, so.

20           But we had some drawings from Sandia.  
21 We give them the exact drawing number, Sandia order  
22 numbers. So from their procurement records, we

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1 wanted to see if, you know, you could show when part  
2 number 46137, for example, came to the site and was  
3 worked at the site.

4 Then we had some vendor names.  
5 Continental Metals, Ladish, Pacific Division of  
6 Ladish Company. And we even had some purchase  
7 order numbers.

8 And so, at the end of that conversation  
9 which occurred September 16, September 17, sent the  
10 email to Tara. Now that I know none of it was  
11 classified. Tara Burgess, there at the Kansas  
12 City Plant is the Reference Manager. And she did  
13 a key word search for all those items and did not  
14 come back with any information.

15 So what we were hoping to do is make a  
16 site visit before today's meeting and retrieve  
17 whatever additional data we could find and speak  
18 to some of these new people and meet the new health  
19 physicist, but that didn't come to fruition.

20 So I just wanted to share with the Board  
21 our most recent attempt to, I mean with the worker  
22 group there, our most recent attempt to pin down

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1 these dates for magnesium thorium machine ops.

2 CHAIR BEACH: Okay. Did you guys take  
3 any notes from that meeting, by any chance?

4 MR. MCCLOSKEY: Yes, I have some notes.

5 CHAIR BEACH: That's shareable or I  
6 don't if SC&A would be interested in that or not,  
7 just --

8 MR. MCCLOSKEY: Yes, I can send them  
9 your way.

10 CHAIR BEACH: Okay. Anybody have any  
11 questions on that for Pat? Okay. Anybody on mute?

12 MR. FITZGERALD: Well, I was just going  
13 to ask Pat -- this is Joe. Is it still planned to  
14 perhaps follow up on this or is it kind of put aside?

15 MR. MCCLOSKEY: We're going to  
16 continue brainstorming on what we can do to  
17 continue to better understand these limited  
18 operations of magnesium thorium.

19 That list, this list, of key word search  
20 items that we presented to the site in September,  
21 there's no plan that I know of to reformat these  
22 words some other way and resubmit them.

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1 I mean, we have, we're going to talk  
2 about this with the validation of the database and  
3 some of the records. You know, we see some need  
4 to ask for some dosimetry records that are  
5 questionable legibility and so, you know, if we go  
6 back there for that reason, maybe we could poke  
7 around at this some. But, no simple answer, Joe,  
8 nothing in the works at the moment.

9 DR. NETON: You guys put together this  
10 memo, right, in September that was sent out to the  
11 Working Group which pretty much outlined our  
12 current position on this period. Did the Working  
13 Group actually get this and --

14 MR. MCCLOSKEY: Yes.

15 CHAIR BEACH: Yes. It came out on the  
16 18th, correct?

17 DR. NETON: That's correct.

18 MR. MCCLOSKEY: That's correct.

19 DR. NETON: I think that summarizes  
20 where we currently are, I think, on this issue.

21 MR. MCCLOSKEY: Sure.

22 DR. NETON: I mean, the other avenue

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1 that they were pursuing was just, as we said sort  
2 of in the memo, that what we would continue to, you  
3 know, research this. If anything changes, we'd be  
4 happy to modify it.

5 But at this point, I think we believe  
6 we're pretty much of the opinion that, you know,  
7 we're going to move forward with this as it is.

8 MR. DARNELL: Right. I don't believe  
9 there's anything else we can think of right now to  
10 search for, the search terms. Especially since  
11 the last set that we had came up empty for results.

12 We've asked Mark Rolfes, who's looked  
13 into different programs and part numbers for all  
14 the different programs that could have had  
15 magnesium thorium in them. He used those as search  
16 terms and nothing came up at Kansas City.

17 CHAIR BEACH: Yes. And I'm going to  
18 break in just for a minute. This is Josie. This  
19 is part of our fourth line item discussion and I'm  
20 wondering if it makes more sense to go ahead and  
21 have this discussion now instead of after the  
22 sample dose reconstructions. What do you all

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1 think about that?

2 MR. DARNELL: Well, it works for me.  
3 It's Pete Darnell.

4 MEMBER CLAWSON: I'd like to kind of  
5 review it right now, Josie, if we could.

6 CHAIR BEACH: Okay. So what I had kind  
7 of outlined was there was three or, yes, three  
8 different memos that went out. The earliest one  
9 came from NIOSH, I believe, on July 7th. We got  
10 that just a week before our July 16th, 17th meeting.  
11 So SC&A gave us a real quick shot of what they  
12 thought of that paper.

13 And then, of course, we got the August  
14 14th paper from SC&A. So you guys should all have  
15 that and then the memo came out on the 18th. And  
16 I believe the only item up for discussion is those  
17 years. Let's see, 1963 to 1969 where they -- we  
18 haven't proved there wasn't any mag-thorium  
19 operations going and we haven't proven there was.  
20 So it's a -- everything else I believe was agreed  
21 upon on mag-thorium. Is that correct, Joe?

22 MR. FITZGERALD: Yes. I think I think

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1 that's a pretty good characterization.

2 CHAIR BEACH: Okay. So I don't -- I  
3 think we have NIOSH's stance and we have SC&A's  
4 stance. Unless either one of you want to expound  
5 on anything, it's really a Work Group decision and  
6 discussion on what you think about those years that  
7 aren't covered. So, Joe or --

8 MEMBER CLAWSON: This is Brad. Can  
9 you refresh my memory on the years that we're  
10 looking at? It was just a few years, wasn't it?

11 CHAIR BEACH: Yes. It's lacking  
12 mag-thorium operation data for 1963 to 1969. And  
13 it's not for lack of looking. I know NIOSH has  
14 looked and SC&A has looked.

15 MR. MCCLOSKEY: Josie?

16 CHAIR BEACH: Yes?

17 MR. MCCLOSKEY: The suspension goes  
18 through August --

19 CHAIR BEACH: This is Pat? Okay.

20 MR. MCCLOSKEY: Yes, this is Pat. I'm  
21 sorry.

22 CHAIR BEACH: Okay.

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1 MR. MCCLOSKEY: The suspension goes  
2 through August 27th of 1970. So the suspended  
3 period, we're saying, is from April 1, 1963,  
4 through August 27, 1970.

5 CHAIR BEACH: Okay. Yes. I took it  
6 to the end of '69, so.

7 MR. MCCLOSKEY: It goes into '70,  
8 though.

9 CHAIR BEACH: And then what was the  
10 date in '70? I'm sorry.

11 MR. MCCLOSKEY: August 27, 1970.

12 CHAIR BEACH: Okay. All right.  
13 Thanks for clearing that up, Pat. So those are the  
14 years we are talking about. I don't know. Joe,  
15 do you have anything, or Pete, to --

16 MR. DARNELL: Right. This is Pete.  
17 As far as I'm concerned, I mean, that's pretty much  
18 where we are with mag-thorium operations. Again,  
19 you've been through the searches that we've  
20 discussed already. With the extra searches that  
21 Pat did for the last classified phone call and --

22 CHAIR BEACH: That's right.

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1 MR. DARNELL: -- we're just not finding  
2 anything further to put the date in there. I would  
3 like to put more dates of work in there. And I  
4 would like to point out, and I know this is a  
5 separate line item in the agenda, but the example  
6 DR also included the suspension of operations from  
7 --

8 CHAIR BEACH: Right.

9 MR. DARNELL: -- the period through  
10 August 27th, '70. And we basically had no comments  
11 from the Work Group on the example DRs. So I think  
12 we should --

13 CHAIR BEACH: So I think everybody was  
14 waiting for this call.

15 MR. DARNELL: Okay.

16 CHAIR BEACH: Potentially.

17 MR. FITZGERALD: Yes. Let me just add  
18 that that's true on the examples, but, you know,  
19 we understand that the Evaluation Report did  
20 conclude that there wasn't any clear evidence of  
21 mag-thorium operations in that period, '63 to  
22 August of '70.

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1                   And there were not really evidence, but  
2                   there was some indications that perhaps there might  
3                   have been some operations and that was the basis  
4                   for our wanting to see if there was any evidence  
5                   that could be had from the records that we were  
6                   looking at on site at Kansas City.

7                   And we went through quite a bit of  
8                   searching, as you pointed out, Josie. And after  
9                   several attempts, we could not find any positive  
10                  evidence of mag-thorium operations for those  
11                  years.

12                  And, you know, there might be some  
13                  inferences. There might be some operational  
14                  suggestions. But there's those that go the other  
15                  way, as well. So, you know, I would say it's just  
16                  inconclusive.

17                  And since we did not establish any, you  
18                  know, any evidence, you know, I think the ER stands  
19                  as it is. I mean, we haven't been able to find  
20                  anything otherwise. So that's kind of where we  
21                  are. I mean, certainly a lot of effort went into  
22                  it.

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1 CHAIR BEACH: Right. And I know Joyce  
2 is on the line. Joyce, do you have anything to add  
3 or?

4 DR. LIPSZTEIN: No. I just, I think  
5 the discussion now is which is what is claimant  
6 favorable. There is no indication that  
7 mag-thorium machining was suspended in the period  
8 of time '63 to 1970.

9 Is this claimant favorable to apply the  
10 limits during this period of time or just say there  
11 was no machining during this period of time? So  
12 is a question.

13 I personally think it's claimant  
14 favorable to apply for the whole period, as we don't  
15 have any document indicating that the mag-thorium  
16 machining was suspended during this period of time.  
17 But I think it's a decision of the Work Group.

18 CHAIR BEACH: Right.

19 MR. DARNELL: I think it's -- this is  
20 Pete. And it's interesting that you're, the way  
21 you're characterizing that there's no evidence  
22 that it was suspended. There's no evidence that

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1 it was operating either. And --

2 CHAIR BEACH: Yes.

3 MR. DARNELL: -- claimant favorability  
4 doesn't necessarily mean you add a dose where there  
5 would be no dose. And since we can't claim that  
6 there was operations there, we can't claim that  
7 operations were started, we can't claim that  
8 they're stopped. We just can't claim there was  
9 operations.

10 It's not a claimant favorability-type  
11 decision to add a dose during this period. It's  
12 whether -- what we have to decide is whether it  
13 occurred or whether it didn't. If it occurred,  
14 then we already the bounding dose estimates to do  
15 and we would put that dose on there. If it didn't  
16 occur, it's not claimant favorable just to add  
17 dose.

18 MEMBER CLAWSON: Well, we could have  
19 real good discussion about that then. We could go  
20 on for years. This is Brad. We could go on,  
21 because there's, you're right, Pete, there's  
22 nothing to say that it happened and it didn't

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1 happen. So I guess it comes back to kind of a  
2 stalemate.

3 But also, too, we've done this in many  
4 other cases. But where we're not completely sure,  
5 we always go favorability. What are we looking at  
6 as a dose-wise for a person for this mag-thorium?  
7 It's quite relatively low, isn't it?

8 DR. LIPSZTEIN: No, it's very high.

9 MEMBER CLAWSON: Is it? What is it?

10 DR. LIPSZTEIN: Yes, it's high. It's  
11 high. I, well, NIOSH has calculated the DR example  
12 and I did it a little bit for SC&A. I did it for  
13 SC&A in a little bit different way of using the  
14 ratio of thorium-232 to U-238.

15 But we are looking at very high doses.  
16 On my way of calculation, which is one, we are  
17 looking at very high doses. For each year of work,  
18 for example, for 20 years committed equivalent dose  
19 to bone surface is about 136 rem per year. Per year  
20 of work. So it's very high doses.

21 DR. NETON: Yes, this is Jim. I think  
22 there's more evidence supporting that it didn't

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1 happen than we're acknowledging here.

2 I mean, there is, I think they went  
3 through and did careful evaluation and inventory  
4 of thorium. It wasn't there. There are no  
5 procedures or monitoring data during this period.

6 When thorium was, we know when it was  
7 handled there were pretty good records of that. It  
8 just doesn't seem consistent for me that they would  
9 just all of sudden drop the monitoring program  
10 completely and have no records available for it.  
11 And especially in light of the fact that there was  
12 no thorium inventory.

13 I just think that the weight of the  
14 evidence here more strongly supports the fact that  
15 this didn't occur. It's not a claimant favorable  
16 thing where we just don't know. I think there's  
17 more evidence than not indicating that it didn't  
18 occur. You've really got to look at the whole  
19 picture.

20 DR. MAURO: Jim, this John Mauro. In  
21 your record review, starting August, 1970, do you  
22 see an abrupt change in the records indicating a

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1 start up again of thorium work?

2 DR. NETON: I have to rely on Pat for  
3 that.

4 DR. MAURO: Because that would be  
5 interesting to see, you know, if all of a sudden  
6 that shows up. If that's when thorium work starts  
7 again. I presume that's what you're saying.

8 MEMBER LOCKEY: Right.

9 DR. LIPSZTEIN: But there was no  
10 monitoring for thorium during all this period. I  
11 think we are basing on the inventory for the years.  
12 I think that's how it was based. It appears that's  
13 work off of mag-thorium machining. So --

14 MR. MCCLOSKEY: Joyce --

15 DR. LIPSZTEIN: -- it's not like --  
16 yes?

17 MR. MCCLOSKEY: Oh, I'm sorry. You  
18 can finish. This is Pat.

19 DR. LIPSZTEIN: No, no. It's okay.  
20 I'm finished.

21 MR. MCCLOSKEY: Oh. I was just going  
22 to say, as far as no records for magnesium thorium

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1 or -- all of a sudden, I'm hearing a lot of static.

2 CHAIR BEACH: It's your phone.

3 MR. MCCLOSKEY: Okay. I'll see what I  
4 can do to fix that. We did retrieve those medical  
5 records recently, showing at what time someone was  
6 entered into the magnesium thorium program. They  
7 had to have an exam. A physical. And so, we do  
8 have that. But we don't have urinalysis  
9 indicating, like -- those sort of records.

10 As far as the question about did you see  
11 a large numbers of records indicating a 1970 start  
12 up again, we don't see a lot of magnesium thorium  
13 records, period. It's just such a small scale  
14 operation. So we just rely on the ones we've cited  
15 and referenced, suggesting that that's where we see  
16 ops starting again. I hope that answers the  
17 question.

18 MEMBER LOCKEY: This is Jim Lockey. I  
19 was going to --

20 DR. NETON: Well, Pat, it start up  
21 again after '70, is that correct?

22 MR. MCCLOSKEY: Yes, sir.

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1 DR. NETON: Yes. So that's my point  
2 is, you know, prior to 1960 monitoring and after  
3 1970, but nothing in the interim, which kind of  
4 would be suspect. I mean, how would you, with no  
5 inventory, you know, why would you be monitoring  
6 people. It just seems to fit properly.

7 MR. DARNELL: Somebody's breathing  
8 into the phone really heavily. If you could stop  
9 that.

10 MR. KATZ: Well, don't stop breathing.  
11 Just mute your phone.

12 MEMBER LOCKEY: This is Jim Lockey.  
13 Do you know what does the personnel level go to  
14 after August of 1970? It was reduced to two  
15 part-time personnel during the '64 to '70 frame and  
16 then when they restarted, do you know what the  
17 personnel went up to? Does anybody know?

18 MR. MCCLOSKEY: This is Pat. We  
19 recently retrieved those medical records that have  
20 who had, the number of people that had physicals  
21 and were allowed to work in the program. So I don't  
22 have that exact number in front of me, Jim, but I

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1 think we could pull that together.

2 MEMBER LOCKEY: I mean, was it five,  
3 was it - I'm just trying to get a handle on -- any  
4 idea at all? A number?

5 MR. MCCLOSKEY: Oh, I would guess near  
6 20.

7 MEMBER LOCKEY: 20. So --

8 MR. DARNELL: It was enough to be  
9 significant for us to see that the operation had  
10 to have restarted.

11 MEMBER LOCKEY: Had to restart it?  
12 So, okay. So I guess I was trying to follow up on,  
13 if they went down to two part-time people, it  
14 doesn't necessarily mean it was discontinued  
15 completely. But there's certainly a major change  
16 during that time frame. And then when they  
17 restarted it, there was a marked influx of new  
18 personnel into that area.

19 MR. MCCLOSKEY: Correct.

20 MEMBER LOCKEY: Okay.

21 CHAIR BEACH: Yes, that's a -- Loretta,  
22 do you have any questions or comments?

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1 MEMBER VALERIO: Can you hear me now?

2 CHAIR BEACH: Yes, yes.

3 MEMBER VALERIO: Okay. Well, I was  
4 just trying to clarify. The retrieval of these  
5 medical records that Pat's talking about, these are  
6 records that they retrieved recently regarding  
7 people who worked with this operation after 1970,  
8 is that correct?

9 MR. DARNELL: Well, this is Pete.  
10 Actually, no. We collected medical records on  
11 everybody that we could find that could have been  
12 a radiological worker.

13 MEMBER VALERIO: Okay.

14 MR. DARNELL: It included the thorium  
15 workers, but it included people that worked uranium  
16 in Department 20, the old DU operation -- everybody  
17 that we could collect.

18 MEMBER VALERIO: So all labor  
19 categories were included in those records?  
20 Laborers, custodians, all of them?

21 MR. DARNELL: You know, that I can't --  
22 I don't have that off the top of my head. Pat, do

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1 you know?

2 DR. MAURO: This is John Mauro again.  
3 You know, I've been reading, you know, the  
4 transcripts and the reports, and I understand  
5 there's a lot of language which are what I would  
6 call weight of evidence. A language regarding the  
7 time period where it would appear that there was  
8 certainly a drop or a stoppage of mag-thorium  
9 operations.

10 What it is, though, was, I was actually  
11 for a step function change, the kind of question  
12 I asked this before. That is, you know, we see  
13 this, this, this and this up to 1963. Then all of  
14 a sudden we don't see that anymore. And then we  
15 can start to see this, this and this starting in  
16 August, 1970.

17 And I didn't, I have to admit, that in  
18 reading the material, that didn't jump out at me.  
19 But certainly I understand the arguments you are  
20 making, the, what you say, the metrics that you  
21 looked at for that window of '63 to '70, and your  
22 arguments.

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1           But it was not within the context of the  
2 other information you had, that sort of bookend,  
3 that time period that shows that, yes, there really  
4 seems to be some type of change here that was  
5 substantive.

6           And therefore, the weight of evidence  
7 is strong, that if the argument that you're making.  
8 I didn't get that takeaway. Not that I, you know,  
9 read it that carefully, but it didn't jump out at  
10 me.

11           MR. DARNELL:     John, this is Pete  
12 Darnell again. I think you're correct in stating  
13 it that way. The problem lies not in our doing  
14 searches or the due diligence, it lies in the record  
15 keeping that Kansas City has.

16           In reality, we've given more data on their  
17 records so that they can make their records  
18 retrievable than they had when we went there. We  
19 certainly did not hit every single box of records  
20 that they have on site. But I would not say what  
21 we collected everything that we probably, that you  
22 expect to be available, say, if you were looking

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1 at any records within the system that Idaho versus  
2 Kansas City.

3 You just can't find all of the type of  
4 information that you're looking for, which is why  
5 we have to rely more so on what did you see, what  
6 don't you see in the dosimetry files that were kept,  
7 because those, the training and dosimetry that were  
8 required for radioactive work was very good at this  
9 site. The remainder of it, it was difficult to  
10 wade through.

11 MR. MCCLOSKEY: And some of the  
12 interviews from former workers corroborate a  
13 suspension, I would say.

14 MR. DARNELL: And that's true, too.

15 CHAIR BEACH: Okay. So any other  
16 comments on this or questions for NIOSH or SC&A?  
17 I have to say that for, this is Issue 13, the  
18 mag-thorium issue, we do have agreement on all  
19 areas except for these dates.

20 And I guess I'm -- I was coming, I came  
21 into this meeting thinking we needed we needed  
22 claimant favorability, not realizing that that

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1 dose would be as high as Joyce had pointed out.

2 I'm uncomfortable with saying there was  
3 nothing going on, but I know we've done due  
4 diligence in looking for evidence and continue to  
5 do that. So I guess I'm asking the Work Group, how  
6 do we move forward with this? Do we close it?

7 DR. NETON: Josie, this is Jim. I  
8 wonder if I might ask a question? So it seems to  
9 me there is agreement that if this were to be added  
10 for dose reconstruction, that we have a method of  
11 bounding this period. Is that correct?

12 CHAIR BEACH: Well, I believe it's in  
13 our next topic.

14 MR. FITZGERALD: I think that's  
15 correct.

16 DR. NETON: That's what I'm saying is,  
17 so if that's true, then is really an SEC issue at  
18 this point? It's a matter of deciding whether the  
19 dose is added, not whether we can reconstruct it  
20 or not. So does that need to be decided before  
21 recommendation and the SEC can move forward?

22 CHAIR BEACH: Well, I guess for me --

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1 DR. NETON: Or has to be decided?

2 CHAIR BEACH: -- if you can't decide on  
3 those years, then that is still an SEC issue. Isn't  
4 that correct?

5 DR. NETON: Well, I mean, we've agreed  
6 that could bound it if were to be added. And so  
7 I guess first question that I asked was could we  
8 bound it and the answer I heard was yes.

9 That being said, essentially it's a  
10 decision of whether the profile would reconstruct  
11 those doses or not. And that doesn't need to be  
12 decided necessarily, at least in my opinion, to  
13 make a recommendation one way or the other on adding  
14 Kansas City as an active part -- to the SEC. I mean  
15 --

16 CHAIR BEACH: Okay.

17 DR. NETON: Am I wrong, or? I don't  
18 know. It seems clear to me.

19 MR. FITZGERALD: I would tend to agree  
20 with that. And actually, I think the notion here  
21 is research, to date, has not uncovered any  
22 positive evidence, but I would say that the notion,

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1 and this is what was in NIOSH's memo, that that  
2 research would continue as possible. And if  
3 anything does, you know, any new information does  
4 come to the fore, that would be reflected, which  
5 I think is reasonable at this point.

6 It is difficult to actually identify  
7 specific information like this at Kansas City and  
8 it's been tried several different ways. But it's  
9 not to say that we might not be able to identify  
10 some information in the future.

11 MR. DARNELL: One other thing that we  
12 need to remember with -- the Kansas City record  
13 keeping department's very good is the training and  
14 dosimetry requirements to get out a radiological  
15 project for almost every worker that we found to  
16 look to see and verify that had either specific  
17 training, medical monitoring, or dosimetry  
18 requirements to be on that project.

19 And even during this period that we're  
20 discussing of whether or not there were operations,  
21 it would be reflected in those medical records that  
22 we collect on the workers. And then, to that

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1 point, the dose would be calculated regardless of  
2 whether we make the decision or not during the  
3 operation suspension period.

4 CHAIR BEACH: Okay. Thank you, Pete.  
5 Anything else on this?

6 DR. LIPSZTEIN: Yes. It's not exactly  
7 on the spirit of time, but also on the example of  
8 the DR calculation. Is this the time to speak  
9 about it? Or am I --

10 CHAIR BEACH: We're going to get to  
11 that. I guess we can get to that discussion and  
12 then come back to closing this item or leaving it  
13 open. Does that seem reasonable?

14 MR. MCCLOSKEY: Well, why don't finish  
15 talking about the dose reconstructions and we'll  
16 close both issues at the end of that, since they're  
17 both --

18 CHAIR BEACH: Yes.

19 MR. MCCLOSKEY: -- so closely related.

20 CHAIR BEACH: That's kind of what I was  
21 thinking, too. So yes, Joyce, if you want to go  
22 ahead and start on that. Has everybody seen the

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1 examples? Have a copy of it? It was sent out on  
2 September 16th and that was from NIOSH and then Ken,  
3 or SC&A sent out a memo on October, in October. So  
4 if you have those two items or two documents. And,  
5 Joyce, go ahead, if you'd like.

6 DR. LIPSZTEIN: Yes, I have some things  
7 that, to talk about the dose reconstruction, the  
8 way it was done or from which I understood it was  
9 done. It was calculated a dose for someone that  
10 used to work in the period of '61 to '63 and then  
11 '70 to '76, using the limits.

12 And the way it's, well, it is a summary  
13 the way the dose was calculated. So we had to get  
14 how it was calculated. But anyway, it was pointed  
15 out in the documents before from NIOSH that for Type  
16 M thorium then you would use the ratio of .19,  
17 thorium-228 to thorium-232. And it was used  
18 equilibrium. And if you used .19, you get a higher  
19 dose to the bone surface, to all the organs inside  
20 the body.

21 And then if you want to calculate the  
22 longer dose it's better to calculate this Type S

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1 and then equilibrium. So this was not used in the  
2 DR examples, so I think the way the dose should be  
3 calculated should be the reviewed according to  
4 previous documents, which was agreed in previous  
5 documents. Did you understand me now?

6 CHAIR BEACH: Yes. I think  
7 everybody's just digesting.

8 DR. LIPSZTEIN: Okay. So it's just  
9 the way the dose is calculated using Type M or Type  
10 S and the equilibrium ratio of thorium-232 to  
11 thorium-228 and radium-224. And it was agreed  
12 before that if for organs like bone source-based,  
13 it should be used a ratio of .19 and it can even,  
14 just for lung one Type S thorium is used. And this  
15 is not the way the example was done.

16 DR. MAURO: Joyce, this is John Mauro  
17 and I apologize. The magic number, the .19, I have  
18 to admit, I don't recall why we zeroed in on that  
19 as being the appropriate ratio. Could you just  
20 give us a 30-second sound bite on that?

21 DR. LIPSZTEIN: It was agreed because  
22 this was a triple separation thorium. And we both

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1 agreed, NIOSH and SC&A.

2 DR. MAURO: Okay, thank you.

3 CHAIR BEACH: Okay. I guess we're  
4 going to look to NIOSH to respond to Joyce.

5 DR. NETON: Oh, well, this is Jim.

6 CHAIR BEACH: Or Jim.

7 DR. NETON: I've lost my thread on how  
8 we came to that agreement, but I do understand where  
9 the .9 comes from. What you're saying though, what  
10 I hear, is that the intakes themselves are correct.  
11 It's just how we processed it after we assigned an  
12 intake.

13 DR. LIPSZTEIN: Yes.

14 DR. NETON: And we, unless Mutty or  
15 someone on the phone can, you know, provide a reason  
16 why we didn't do that, I think we just have to go  
17 back and look at it. I think it's a matter of just  
18 --

19 MR. SHARFI: I think the concept, the  
20 triple separate, was an association with whole body  
21 counts because of the lead and when you are starting  
22 to look at the other peaks in a whole body count

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1 or a test count. The triple separate became the  
2 more claimant favorable assumption based on when  
3 you're drawing the thorium intake from the later  
4 peaks. I'm not sure if that is true that there was  
5 an agreement for all thorium intakes that are based  
6 on, say, air sampling.

7 DR. NETON: This came up at another  
8 site just recently. All I can say is, Joyce, we  
9 would have to look at that and verify, you know --

10 DR. LIPSZTEIN: Jim?

11 DR. NETON: Yes.

12 DR. LIPSZTEIN: Yes. Look at your  
13 previous documents. We all agreed on that. There  
14 was a lot of those --

15 DR. NETON: You mean separated for this  
16 site?

17 DR. LIPSZTEIN: Yes, yes. It was  
18 NIOSH proposal and we agreed on it.

19 DR. NETON: Okay. Well, we'll look at  
20 it and get through it, but I guess I would say that  
21 this is the mechanics of it, not necessarily  
22 invalid. The numbers may change but the

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1 methodology would remain the same.

2 DR. LIPSZTEIN: Yes, I'll say.

3 DR. NETON: At least as far as an intake  
4 assessment goes. And --

5 DR. LIPSZTEIN: Yes.

6 DR. NETON: -- we'll take a look at it,  
7 because I'm pretty sure we can't address this on  
8 the fly.

9 DR. LIPSZTEIN: Okay, okay. Just look  
10 at the previous documents and you will see that it  
11 was NIOSH proposal.

12 DR. NETON: We provided this in one of  
13 our White Papers, is that what you're --

14 DR. LIPSZTEIN: Yes, exactly. And we  
15 agreed it was correct.

16 CHAIR BEACH: Joyce, do you have the  
17 date of that document, by any chance? Open or  
18 handy?

19 DR. LIPSZTEIN: Now, no. But I can  
20 understand you.

21 CHAIR BEACH: Okay. So --

22 DR. LIPSZTEIN: I have to look.

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1 DR. NETON: Yes.

2 CHAIR BEACH: Okay, that's fine. Yes,  
3 if you can tell us later on in the call, that would  
4 be helpful. And so that one is just for the  
5 mag-thorium dose reconstruction, correct? Okay.

6 So let's back up and NIOSH, this is your  
7 paper. If you want to go ahead and talk to it. And  
8 then, of course, we'll have SC&A talk about their  
9 memo. Does that work for everyone?

10 MEMBER LOCKEY: Yes, that's fine.

11 CHAIR BEACH: Okay.

12 MR. DARNELL: All right, Pat --  
13 Mutty, would you mind going over the paper, please?

14 MR. SHARFI: Sure. Well, in the  
15 example, they are -- do you want me to just focus  
16 on the mag-thorium or the entire example DR?

17 CHAIR BEACH: Well, let's --

18 MR. SHARFI: Because there's the  
19 tritium and the nickel.

20 CHAIR BEACH: Maybe we should just hit  
21 them one at a time. Let's do the mag-thorium and  
22 then decide where we are with that, and then move

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1 on to the others. If that seems reasonable.

2 MR. SHARFI: Sure. Whatever works for  
3 you. All right, because the mag-thorium that we  
4 discussed before was based on an exposure between  
5 August of '61 to March of '63, and then there was  
6 stop in operations assumed. And the operations  
7 was continued back up in August of 1970 and  
8 continued through the end of '77. That's how the  
9 example DR was done.

10 There was an assumption that, based on  
11 the site, limit engineering controls at Kansas City  
12 Plant of 3E to minus eleven microcuries per  
13 milliliter. That that air sample control at the  
14 site was constantly contained at that level for  
15 2,000 hours a year. And that was assumed for the  
16 operators' exposure.

17 And then the Battelle 6000 kind of  
18 trickled down. The laborers were given half that,  
19 supervisors half the general laborers. And the  
20 administrators were given a tenth of the  
21 supervisors. That's the standard ratio out of  
22 Battelle 6000 for other job categories.

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1           The example DR was really more focused  
2           on the operator. So the intakes were -- both for  
3           inhalation and ingestion were based off that Kansas  
4           City Plant engineering control limit. So an  
5           inhalation intake of 438 dpm per calendar day and  
6           an ingestion rate of 9.1 dpm per calendar day was  
7           assigned for every day during the assumed  
8           operational period, as I mentioned before.

9           As an example, I give the annual intake  
10          rate based off of various years. And the  
11          calculated doses associated with thorium, the lung  
12          doses, almost 300 rem. The liver dose at 26 rem.  
13          Bone surface was dose 1200 rems. Kidney dose about  
14          22 rem. Prostate about three and a half, and the  
15          skin was about three and a half rem associated with  
16          those.

17          And that's, I mean, it's a pretty  
18          straightforward dose assessment. And then we  
19          assumed natural thorium. And this is assumed a  
20          gross alpha intake rate, so that we used natural  
21          thorium as Joyce has pointed about whether or you  
22          should use natural or triple separated. I guess

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1 that's an issue to discuss later. But this  
2 assessment was done based off natural.

3 And I don't know if there's much more.  
4 And it's a pretty straightforward dose assessment.  
5 Questions? Comments?

6 CHAIR BEACH: Thanks.

7 DR. MAURO: This is John again. I'm  
8 sure you've rehashed this. This has been gone over  
9 before that 3 times ten minus eleven, I believe it  
10 was, microcuries per cc.

11 CHAIR BEACH: Right.

12 DR. MAURO: I'm sorry, say again?

13 CHAIR BEACH: That's correct.

14 MR. SHARFI: Yes, that's correct.

15 DR. MAURO: Now, and again, this goes  
16 back a ways, and in reading over the history of that  
17 number, and there was some discussion regarding,  
18 as you pointed, whether that is the gross alpha,  
19 which includes all of the alpha emitters associated  
20 with thorium and its progeny. Joyce had mentioned  
21 this ratio of .19 for the Thorium-228. And of  
22 course there are these other alpha emitters in the

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1 decay chain. Just to refresh my memory, when you  
2 say 3 times ten to the minus eleven, are you talking  
3 about gross alpha or is that thorium-232 all by  
4 itself and you're assuming all the progeny are  
5 present at the same level?

6 MR. SHARFI: The gross alpha sample,  
7 and then it's split into the various alpha  
8 emitters.

9 DR. MAURO: And all the alpha emitters  
10 are in equilibrium, so the amount of thorium is much  
11 less, thorium-232? In other words, the amount of  
12 thorium-232 is not 3 times ten to the minus eleven?

13 MR. SHARFI: Correct.

14 DR. MAURO: Okay. I just wanted to make  
15 sure I understood that.

16 DR. LIPSZTEIN: Okay, one second. I  
17 just found -- there was a response paper called  
18 Internal Exposure to Thorium --

19 MR. SHARFI: Can't hear you.

20 DR. LIPSZTEIN: There was a response  
21 paper from NIOSH from January 9, 2015, that talks  
22 about, on Page 14, it talks about the activity ratio

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1 of .19. It's saying the three separated thorium  
2 to target subjects chosen intervals between  
3 chemicals and results thorium-228 to thorium-232,  
4 activity ratio of .19.

5 And it explains why this ratio should  
6 be used. Thorium coming from Canada, something  
7 like that. But it's from this paper from NIOSH on  
8 Page 14 from January 9th, 2015.

9 MR. MCCLOSKEY: What's the title of  
10 that?

11 DR. LIPSZTEIN: The Response Paper  
12 Internal Exposures to Thorium and Progeny at KCP  
13 During Mag-thorium Machining, January 9, 2015,  
14 Page 14.

15 CHAIR BEACH: Yes, I was just digging  
16 mine out. I have a copy of that here, too. Bear  
17 with us. So, Pete and Jim, are you guys looking  
18 at that, and do you want to comment --

19 MR. DARNELL: I haven't found it,  
20 actually.

21 DR. NETON: Okay, I found it. It does  
22 say in our response that we would use triple

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1 thorium, triple testing.

2 CHAIR BEACH: Okay, yes. Thanks,  
3 Joyce. Good catch there. So any other comments  
4 on this or Work Group Members, questions, comments?  
5 So pass forward on this would be what, Pete?

6 MR. DARNELL: I guess we need to redo  
7 the example DR using the triple separated.

8 CHAIR BEACH: Okay. And that's  
9 something you can do and just send out to the Work  
10 Group?

11 MR. DARNELL: Yes. That won't be sent  
12 until June from the methodology used. I guess what  
13 we need --

14 CHAIR BEACH: Right.

15 MR. DARNELL: Before we go ahead and do  
16 that, I mean, is the Work Group in agreement that  
17 for mag-thorium, the methodology used is okay or  
18 that specific number needs to change?

19 MR. FITZGERALD: Josie, I think Ron  
20 Buchanan's on the phone and he went through, step  
21 by step the DR process itself, which is what Pete's  
22 talking about. Maybe he can --

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1 CHAIR BEACH: Right.

2 MR. FITZGERALD: -- say a few words.

3 CHAIR BEACH: Yes. I think, yes, we  
4 should definitely hear from Ron.

5 DR. BUCHANAN: Okay. This is Ron  
6 Buchanan, SC&A. I did not go back through all the  
7 previous discussion on this White Paper. What I  
8 did is I went through and looked at the methodology  
9 that NIOSH used and how they applied it to the DR.  
10 That was my point of interest when I evaluated this.  
11 But I went through, number one, to see if it was  
12 done correctly. And, number two, if there was any  
13 red flags.

14 And so I looked at their example and  
15 they did include five different organs and the full  
16 time span that we had previously discussed on the  
17 exposure to mag-thorium. And I did not see any  
18 major areas that there was a problem in, any red  
19 flags, or misapplication of the method to the DR,  
20 per se. You know, the mechanics of it.

21 And the doses did come out fairly high.  
22 I think probably a little higher than what most

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1 people expected. They came out about three rem to  
2 the skin and about 1200 rem to the bone surface.  
3 It's something that does need to be seriously  
4 considered.

5 In my evaluation in the report I sent  
6 out recently, I did not see any real problems with  
7 the method that they used to reconstruct the dose  
8 in these examples. Now I took it that they were  
9 using the right thorium, as Joyce pointed out.

10 They had previously agreed in their  
11 White Papers to a different ratio, which would  
12 simply change that number but the rest of the  
13 mechanics would remain. So I see no problems with  
14 the mechanics of applying their dose  
15 reconstruction method to mag-thorium doses for  
16 Kansas City workers.

17 DR. LIPSZTEIN: And also, Ron, should  
18 be a difference when you calculated dose for  
19 internal organs like bone surface or liver. And  
20 then should the Type M should be used and Type S  
21 should be used for lung.

22 DR. BUCHANAN: Yes. In the dose

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1 reconstruction, you use the type that would produce  
2 the largest dose to the organ of interest.

3 DR. LIPSZTEIN: Yes.

4 CHAIR BEACH: And was that done?

5 DR. BUCHANAN: I would have to back and  
6 look at that and see which type of solubility. I  
7 can't answer that question right off, but I can --

8 CHAIR BEACH: Mutty, can you answer  
9 that?

10 MR. SHARFI: Yes. I mean, that is our  
11 standard protocol is to get the solubility type  
12 that would give the largest exposure.

13 CHAIR BEACH: And so that was done in  
14 this case then?

15 MR. SHARFI: Yes. If I didn't note  
16 that, then it should have been noted. I might have  
17 --

18 CHAIR BEACH: Okay.

19 MR. SHARFI: -- in the CAD files, but,  
20 I mean, I believe I ran all solubilities for all  
21 cancers. And then I used the one that resulted in  
22 the largest dose.

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1 DR. MAURO: This is John Mauro again.  
2 It sounds, what I'm listening to is that there are  
3 two ways of thinking about this. One is that your  
4 3 times ten to the minus eleven is your gross alpha  
5 representing all the progeny present in  
6 equilibrium and in the air.

7 And the other scenario would be -- no,  
8 it's going to be primarily thorium-232 with  
9 thorium-228 at a concentration that's .19 in the  
10 air. And then that gives you your 3 times ten to  
11 the minus eleven. And then, of course, there are  
12 the other alpha emitters.

13 It seems to me that, now I did do the  
14 calculations, that changing that mix of what  
15 constitutes 3 times ten to the minus eleven should  
16 have substantial effect on the doses, not a minor  
17 effect. Or am I incorrect about that?

18 DR. BUCHANAN: Yes, it can have an  
19 effect on the doses. It just wouldn't have an  
20 effect on the methodology.

21 DR. MAURO: Oh, okay. I just wanted to  
22 make sure, because it sounded like that different

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1 didn't make that much difference and I agree that  
2 it's the mechanics. But I think that the outcome,  
3 in terms of what the dose to lung, the bone and soft  
4 tissue would be, would be substantially different  
5 depending on how you treated the mix.

6 DR. BUCHANAN: Yes, that's correct.

7 CHAIR BEACH: Okay.

8 DR. LIPSZTEIN: And also the amount of  
9 thorium was two percent. After '70, was three  
10 percent, and --

11 DR. BUCHANAN: Yes.

12 DR. LIPSZTEIN: -- '61, I think.

13 DR. BUCHANAN: Yes, Josie, I did go  
14 back and look at the CAD worksheets and the  
15 solubility they used. The assigned dose was the  
16 largest dose organ of the solubility, so I know I  
17 verified that but couldn't put my finger on it.

18 CHAIR BEACH: Okay. Thank you.  
19 Good. Okay. So any other questions or comments  
20 for the mag-thorium dose reconstruction?

21 MEMBER CLAWSON: This is Brad. I kind  
22 of got a little bit lost there. But bottom line

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1 is the way NIOSH did it, the way I'm taking it, is  
2 they performed this correctly and that they used  
3 the right organs of interest. Is this correct?

4 CHAIR BEACH: Yes. That's my  
5 understand as well.

6 MEMBER CLAWSON: Okay.

7 CHAIR BEACH: That they, yes. John or  
8 Loretta or Jim, anything on this?

9 MEMBER LOCKEY: No. Brad, you helped  
10 me. You clarified it for me, Brad. That was my  
11 opinion, too.

12 CHAIR BEACH: Okay. So what can we  
13 expect or when, Pete, on the -- or maybe I should  
14 just ask maybe on the recalculation of this one?

15 MR. DARNELL: Can we get back to you on  
16 that? This is Pete. We'll get back to you on  
17 that.

18 CHAIR BEACH: But we do know it needs  
19 to be proven, correct?

20 MR. DARNELL: Yes. From what I'm  
21 understanding, the Work Group agrees that the  
22 methodology for the mag-thorium was appropriate.

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1 The number used was off and needs to be  
2 recalculated.

3 CHAIR BEACH: That's my understanding,  
4 too, unless I hear from --

5 MR. DARNELL: Okay.

6 CHAIR BEACH: -- somebody else on the  
7 Work Group. We heard from Jim and Brad. Loretta?

8 MEMBER VALERIO: I agree. I agree.

9 CHAIR BEACH: Okay. And John, are you  
10 still with us?

11 MEMBER POSTON: I am, and I'm fine.

12 CHAIR BEACH: Okay. Perfect. So,  
13 yes, I think that would be correct.

14 MR. DARNELL: All right. I'll get  
15 back with you later today or at the latest tomorrow  
16 on when the Work Group will receive the  
17 recalculated numbers.

18 CHAIR BEACH: Okay. And I'll have  
19 some questions on who this is going to apply to,  
20 but because it's going to, questions on this one  
21 and tritium, I'm going to hold that off until we  
22 get through the tritium discussion.

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1 MR. DARNELL: Okay.

2 CHAIR BEACH: Unless you want to take  
3 those individually? Or I guess we should take them  
4 individually, because they are individual. So  
5 refresh us on who these will apply to, because I  
6 know that question is going to come up at the Board  
7 level too.

8 MR. DARNELL: Okay. As far as I  
9 understand it, each one of the workers' categories  
10 from that have either the training, exposure  
11 monitoring, or medical qualifications for doing  
12 the work will have the dose reconstructions applied  
13 to them.

14 CHAIR BEACH: Okay. So people that  
15 you can identify who were actually doing the  
16 machining. How about people in the adjoining  
17 areas and workers that worked around this?

18 MR. SHARFI: Are we still talking about  
19 just thorium?

20 CHAIR BEACH: Yes.

21 MR. SHARFI: All right. Okay, here  
22 are intake rates for supervisors and admin that

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1 would get applied.

2 CHAIR BEACH: Yes, I did catch that.  
3 Those would be different than the janitors and the  
4 --

5 MR. SHARFI: Right.

6 CHAIR BEACH: -- people that were  
7 working right in the same room --

8 MR. SHARFI: Correct.

9 CHAIR BEACH: -- which was not  
10 supervisors and admin.

11 MR. SHARFI: So the operators and the  
12 laborers directly involved with the operations  
13 would be based on identification associated with  
14 that work. And everybody else would fall into the  
15 supervisor/admin. If you want to call it like an  
16 environmental exposure.

17 CHAIR BEACH: Yes. Well --

18 DR. NETON: This is Jim. It's a pretty  
19 broad application. I think, like Mike's saying,  
20 anybody who had a chance to be working in the area  
21 would be provided that dose, other than --

22 CHAIR BEACH: Okay.

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1 DR. NETON: -- a supervisor or  
2 administrative staff.

3 CHAIR BEACH: And laborers and --

4 DR. NETON: That would be everybody --

5 CHAIR BEACH: -- janitors.

6 DR. NETON: -- that was in those areas.

7 CHAIR BEACH: Okay.

8 MR. DARNELL: It's -- it uses the  
9 TBD-6000 model, isn't that right? Correct?

10 DR. NETON: Yes, yes.

11 MR. MCCLOSKEY: Okay.

12 DR. MAURO: This is John Mauro again.  
13 Real quick, we've run across this TBD-6000 split  
14 and we're fine with the concept and when we review  
15 TBD-6000.

16 Where we sometimes, and only rarely, do  
17 we run into a situation on the actual application  
18 to a real case. When they decide that, well, we're  
19 going to make this person a laborer or a supervisor  
20 or an operator, and there's certainly some judgment  
21 involved there.

22 But my experience has been that, and at

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1 least the DRs that I reviewed, that NIOSH is usually  
2 given the benefit of the doubt and given the high  
3 end fraction to the person. Assuming that he's the  
4 operator, unless there's overwhelming, you know,  
5 information that really the person was not an  
6 operator, so.

7 But I think that you can't really deal  
8 with this as a SEC or as Site Profile type issues.  
9 It's almost on a case by case basis. And the  
10 fundamental concept, as laid out in TBD-6000, has  
11 been found acceptable. It's its actually  
12 implementation during the DR that becomes the  
13 issue.

14 CHAIR BEACH: Right. I agree with  
15 that. I guess my biggest concern on this is the  
16 laborers and the janitors were working on the  
17 machines, cleaning the machines, getting rid of the  
18 waste. And so there's some -- they don't fit in  
19 the supervisor category and I guess that's my  
20 concern.

21 DR. MAURO: That's a great question,  
22 because that sounds like a special circumstance.

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1 CHAIR BEACH: Oh --

2 DR. MAURO: Yes.

3 CHAIR BEACH: Well, we had some  
4 interviews that identified that.

5 DR. MAURO: Yes.

6 MR. SHARFI: I think the intent was  
7 they would be assigned a dose of 3 to the minus ten.

8 CHAIR BEACH: Okay. I just wanted to  
9 make sure I'm hearing that.

10 MR. SHARFI: Well, the laborers, so  
11 this support personnel, the laborers, the  
12 janitors, whatever, that are rad worker generated,  
13 you know, laborers --

14 CHAIR BEACH: Okay.

15 MR. SHARFI: They would get the general  
16 laborer exposure.

17 CHAIR BEACH: So is what again?

18 MR. SHARFI: So this is going to be the  
19 hands-on. So that would be half the operator's  
20 exposure, so.

21 CHAIR BEACH: Joe, do you have any  
22 comments on that for total, really?

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1                   MR. FITZGERALD: This was one of the  
2 other issues. If you remember, there was one issue  
3 was the waste handlers. The other issue was D&D.  
4 And this was the very -- this was, in fact, the  
5 question.

6                   Because these individuals apparently,  
7 by interviews we found, handled materials.  
8 Directly handled the materials routinely. And I  
9 thought the resolution, correct if I'm wrong, Pete,  
10 was that we would include them if we, you know, as  
11 identified, we would include them and assign the  
12 thorium value as if they were operators. And I  
13 thought that's the way it was left to those --

14                   MR. SHARFI: I believe we wrote it up  
15 as we would be giving them the air sample at 1.5  
16 instead of 3.0, which is, in the general laborer  
17 category, of half the operators.

18                   MR. DARNELL: Right, right.  
19 Important general -- I remember that conversation.  
20 Actually, I'm sorry, I don't remember that  
21 conversation per se, but I do know that we agreed  
22 on using the TBD-6000 approach. And that's all

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1 that we're trying to say is that these workers are  
2 assigned per the categories listed out in TBD-6000.  
3 I don't know why we would want to change that  
4 approach for this particular site.

5 MR. MCCLOSKEY: Hey, Pete, can I chime  
6 in here? It's Pat.

7 MR. DARNELL: Sure.

8 MR. MCCLOSKEY: So we documented that  
9 -- SC&A brought that question to us for the D&D.  
10 The lower case D&D workers and for the waste  
11 handlers. And where there was that group that was  
12 --

13 CHAIR BEACH: Right.

14 MR. MCCLOSKEY: -- identified as being  
15 illiterate or something like that. And so in our  
16 memo to you guys dated June eleven, 2015, our memo  
17 to the Work Group, we go in and we address, we looked  
18 at the waste handlers and the lower case D&D workers  
19 that took apart machinery.

20 And we had a long discussion there. I  
21 have it in front of me now, if you want to hear parts  
22 of it, about, you know, what interviewee said and

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1 what the records indicate. And like Mutty just  
2 said a minute ago, we determined they fit into the  
3 laborer Class, which is half of the 3 minus eleven  
4 or 1.5. E minus eleven.

5 And we talk about, you know, we're  
6 giving this to them for a 2000-hour time-weighted  
7 average. And this is that paper where we also go  
8 into the discussion about work that occurred,  
9 surrogate data from Dow Madison where they had some  
10 really aggressive machining and they didn't air  
11 approach air samples near 1.5 minus eleven, so  
12 that's where we landed on this.

13 MR. FITZGERALD: Now, the issue matrix  
14 for both D&D and waste handlers, that both issues,  
15 this indicates that the agreement by the Work Group  
16 was that the coworker model, for example, for D&D  
17 workers. I'm trying to find the one for waste  
18 handlers. But NIOSH will apply the DU coworker  
19 model to all unmonitored rad waste and D&D workers.  
20 I thought that was similar to what was done with  
21 the thorium. I'm looking for that.

22 MR. MCCLOSKEY: Yes. For their

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1 uranium or DU component of their dose, we were going  
2 to give them the coworker --

3 MR. FITZGERALD: Yes.

4 MR. MCCLOSKEY: -- for the thorium  
5 component of their dose. It was going to be --

6 CHAIR BEACH: And just to be clear on  
7 that, we haven't seen the coworker models for those  
8 yet. Is that correct? That's coming later?

9 MR. FITZGERALD: That's correct.

10 CHAIR BEACH: Okay.

11 MR. MCCLOSKEY: The coworker models  
12 exist in the TBD. What we're doing now is  
13 evaluating the database that the coworker models  
14 were built from. And you're right, we're going to  
15 talk about that soon.

16 MR. FITZGERALD: So just to not leave  
17 this open, the agreement by the Work Group in July  
18 was to apply the uranium coworker model to extend  
19 that to unmonitored waste handlers, as well as D&D  
20 workers. That's the way it was resolved and we  
21 agreed with that.

22 CHAIR BEACH: And that was at the half

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1 dose or full dose?

2 MR. FITZGERALD: Just applying the  
3 uranium coworker model. There wasn't any  
4 fractional dose assignment.

5 CHAIR BEACH: Okay.

6 MR. FITZGERALD: And that's right from  
7 Pete. That's right from your issues matrix that  
8 we distributed on July 30th.

9 MR. DARNELL: Yes.

10 CHAIR BEACH: Now that's the Site  
11 Profile one, is that correct?

12 MR. FITZGERALD: No, no. This is the  
13 SEC matrix --

14 (Simultaneous speaking.)

15 CHAIR BEACH: Oh, okay. Got you.  
16 Okay, so are we okay with that then? Anybody out  
17 there?

18 MEMBER CLAWSON: This is Brad. Why  
19 are we handling this one different than we are the  
20 uranium? Why are we handling -- I know that we're  
21 doing it for TBD-6000, but why is the thorium  
22 different?

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1 DR. NETON: Brad, this is Jim. The  
2 thorium was actually an upper bound value based on  
3 the maximum permissible concentration in air.  
4 There is no coworker model per se. It's just a  
5 bounding upper limit. For the operators.

6 MEMBER CLAWSON: Okay.

7 MR. FITZGERALD: And I think just to go  
8 back to the original discussion, when you have  
9 these laborers who were, and custodians that were,  
10 cleaning the machines and hauling away the chips.  
11 They were also supporting the uranium operations  
12 and it was difficult to distinguish. They weren't  
13 supporting the thorium. You know, there's only a  
14 couple machines that are so devoted to thorium. So  
15 they were doing all the machines.

16 So the conclusion, I think, of that  
17 discussion back in the summer was it would make more  
18 sense to assign them the uranium coworker dose and  
19 leave it at that. And I thought, I think the Work  
20 Group was comfortable with his, you know, go ahead  
21 and having the laborers, anyone that could be  
22 identified as doing that kind of work, handled that

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1 way.

2 MEMBER CLAWSON: All right.

3 CHAIR BEACH: Okay. Any other  
4 discussion on that? Hearing none, shall we move  
5 on to the tritium?

6 MEMBER CLAWSON: You know what? I do  
7 have one more thing to say. I'm kind of with John  
8 on this. The thing that does bother me about this  
9 how we're going to implement the TBD-6000. I have  
10 no problems with TBD-6000, but it's going to be done  
11 on a case by case scenario.

12 The one part that worries me is when  
13 somebody's been like a laborer or an operator or  
14 something like that, and then go into management  
15 and become a supervisor. Sometimes we don't get  
16 -- there's a crossover that -- it's the  
17 implementation of TBD-6000 that's got me nervous.

18 CHAIR BEACH: Yes. And I believe  
19 we've agreed to using TBD-6000, so it becomes this  
20 Site Profile issue that will be up for discussion  
21 when we close out all the SEC issues. Is that  
22 correct?

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1 MEMBER CLAWSON: Yes.

2 CHAIR BEACH: Well ---

3 MR. DARNELL: Brad, to answer some of  
4 your concern, generally, when we do a dose  
5 reconstruction, if the worker was categorized,  
6 say, as a laborer and then went to QA, you know,  
7 then went into management, then went back to  
8 something else, if he falls into different dose  
9 worker categories, he gets dosed assigned for those  
10 periods he was that worker category.

11 So, if for ten years he was a laborer  
12 and ten years he was a manager, ten years he gets  
13 laborer dose, ten years he gets manager dose.

14 MEMBER CLAWSON: And I realize that,  
15 Pete. But you know what? I've looked at the  
16 records, same as you have. And it's really hard  
17 to follow that. And you know, if you don't have  
18 a CATI report where exactly he was at, you're kind  
19 of guessing a little bit. And that's my only  
20 thing.

21 And so, you're right, Josie. We'll  
22 take care of this on the Site Profile issue and look

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1 into it and make sure. And I'll see it on the dose  
2 reconstruction side.

3 CHAIR BEACH: Thanks, Brad. Anything  
4 else on that thorium before we go on to the tritium  
5 does reconstruction sample?

6 All right, hearing none, Mutty are you  
7 going to go ahead and do this one also?

8 MR SHARFI: I can.

9 CHAIR BEACH: I mean, I'm not saying  
10 you have to. I'm just assumed you were.

11 MR. SHARFI: No, I'm all right. Don't  
12 worry about it.

13 CHAIR BEACH: Okay.

14 MR. SHARFI: I will add that on the  
15 medical records that we did get from them. Those  
16 medical cards do have a detailed history of their  
17 work history as they've changed over time.

18 So those are actually a very good thing  
19 that the site did keep on their medical history  
20 cards about department, when they started and  
21 stopped, and what their title was throughout their  
22 history of the work at the site.

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1 CHAIR BEACH: Okay. Thank you for  
2 that.

3 MR. SHARFI: So, the tritium is broken  
4 up into two parts. There is the high-low switch  
5 plates they did and the manufacturing of the  
6 tritium monitors.

7 I'll start with the high-low switch  
8 plates. These, this occurred between 1963 and  
9 1968. The site was using a tritiated phosphor to  
10 create the production of these luminous dials.

11 The form of the tritium that they were  
12 using was an organic compound called tung oil, also  
13 known as China Wood oil. It's an organic that  
14 they've used to incorporate this phosphorus,  
15 tritide to, attached to these switch plates.

16 Basically, we did a analysis assuming  
17 that the switch plates had a, based on some, I  
18 believe, some swipes that they did over these  
19 surveys, about the leaching of the tritium off  
20 these plates.

21 As I said, the contamination on the  
22 surface of the entire plate would have been

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1 absorbed through the skin and taken in as intake.  
2 Based on the procurement records, we assumed  
3 there's at least 500 of these plates were ordered  
4 by KCP.

5 So, we calculate basically a total  
6 intake of organically bound tritium absorbed  
7 through the skin based on a surface contamination  
8 and a production rate. And, so this gave us an  
9 exposure of about 1.8 millirem per year throughout  
10 the entire period, just the assigned all workers.

11 I don't know if you need more detail  
12 into the derivation of the intake, of the --

13 CHAIR BEACH: Okay, thanks, Mutty.  
14 And, Ron, did you want to go ahead and talk about  
15 new, you looked at the way this was done also.

16 DR. BUCHANAN: Yes. This is Ron  
17 Buchanan, SC&A. I looked at this and considered  
18 did they use the method they said they was going  
19 to. And, did the method make sense.

20 And, this is again, you know,  
21 subjective, what, how many plates came to, how many  
22 they could do in a day and such. I feel that

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1 overall it was claimant favorable. They used the  
2 95th, they did actually have some slight  
3 measurements, so did have that to base it on.

4 And, they used the 95th percentile,  
5 considered both sides contaminated. And,  
6 arrived at a dose of about one or two rem a year,  
7 and from tritium.

8 And so, I did not find any red flags or  
9 problems with this issue. It's a small dose, but  
10 it's probably claimant favorable. And, I didn't  
11 have any issues with it.

12 CHAIR BEACH: Okay. Thank you, Ron.  
13 Any Work Group comments or questions for either Ron  
14 or at NIOSH?

15 MEMBER LOCKEY: Jim Lockey. I don't  
16 have any questions.

17 CHAIR BEACH: Thanks, Jim.

18 MEMBER POSTON: None for me.

19 CHAIR BEACH: Okay. Thanks John.

20 MEMBER VALERIO: This is Loretta.  
21 None for me. Not on the tritium.

22 CHAIR BEACH: Okay. Thank you.

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1 Brad, anything?

2 Okay. Brad will be back. So, I do  
3 have one question.

4 MALE: Sure.

5 CHAIR BEACH: I know in your paper,  
6 Mutty, it says chemistry technicians. And, I  
7 guess my question is, who were the chemistry  
8 technicians? Are you going to be able to identify  
9 them?

10 MR. SHARFI: This is thinking  
11 everybody. It's such a small dose.

12 CHAIR BEACH: It's going to everybody.  
13 Okay. Well, there, that clears that up.

14 MR. SHARFI: Yes. But, in both these  
15 tritium cases, there's such a small dose, it's  
16 easier just to roll it in as an environmental  
17 exposure and give it to everybody, than it is to  
18 first off, trying to figure out who --

19 CHAIR BEACH: Okay. Good. That's  
20 satisfies my questions then. Anybody else?

21 MEMBER CLAWSON: Hey, Josie. This is  
22 Brad. I'm back. I just had to step out and take

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1 care of something real quick.

2 CHAIR BEACH: Okay. Yes. Well,  
3 someone told us, your assistant. So, these, this  
4 tritium doses will go to everybody. Any questions  
5 on it?

6 MEMBER CLAWSON: No.

7 CHAIR BEACH: Okay. So, Mutty, if you  
8 want to take the second part of this?

9 MR. SHARFI: Sure. The manufacturing  
10 of tritium monitors. I can't think, primarily  
11 used to manufacture these instruments back in,  
12 starting in '59 and, ran, the campaign ran through  
13 about the mid-1970s. So, we said 1975.

14 Basically, the main exposure would have  
15 been from, they were creating these small bottles  
16 of standardized solutions in order to basically  
17 test these kits. So, you got a 400 ml solution that  
18 was 250 microcuries per liter that came with each  
19 one of these instruments.

20 So, basically we looked at a volume  
21 scenario assuming that the 400 bottle was spilled  
22 over the course -- The total volume of 400 ml was

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1 spilled over a course of a year and was absorbed  
2 in by a worker.

3 This is, we assumed would be claimant  
4 favorable because obviously, this material from,  
5 was under procurement they, you know, they're  
6 literally treating, or this was a production  
7 material. So, it's not like you would attempt to  
8 lose an entire source term while working.

9 This was also a, also done in a hood.  
10 So, there was a ventilation system. There's a  
11 likelihood that the entire spill would have been  
12 absorbed through the skin is unlikely, all 400 mls.

13 So, if you assume all 400 mls based on  
14 a concentrations of the tritium in the solutions,  
15 you get an intake rate of about 2 E to the 8th dpm  
16 of treated water.

17 Assumed on an annual basis, they were  
18 actually, each worker was getting 400 mls of  
19 exposure every year from 1959 to 1975. Results in  
20 a dose of about six millirem per year. And,  
21 obviously, if they spilt that much, they would have  
22 had no inventory.

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1 CHAIR BEACH: Right.

2 MR. SHARFI: So, this was a bounding  
3 scenario for any worker, like I said, we'd give this  
4 to any, given so small, it's just, it's easier just  
5 to apply to every single worker on the workforce  
6 through that time.

7 CHAIR BEACH: Okay. Thank you. Ron,  
8 anything on this for you?

9 DR. BUCHANAN: No. I went over the  
10 scenario and the assumptions, and if you worked  
11 with tritium, you know you wouldn't lose 400 mls  
12 a year and absorb it all.

13 So, this here, this is a binding  
14 situation that assigned a dose. It's a small dose  
15 and it's probably over a factor of a hundred or so.  
16 So, I don't see any issues with it.

17 CHAIR BEACH: Okay. Thank you Ron.  
18 Any Work Group discussion or questions? Comments?  
19 Okay. Hearing none, shall we go ahead and move on  
20 to the nickel-63?

21 MR. SHARFI: Sure. Nickel-63 was used  
22 at a time for manufacturing tritium in air and urine

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1 monitoring. Instrumentation designed by Sandia,  
2 used a plated, they did a plating of nickel-63 on  
3 the small aluminum metal coupon for the calibration  
4 standard.

5 So, an analysis was done involving the  
6 micro-error falling of the nickel that could have  
7 occurred. That the amount of material was  
8 uniformly distributed into a five by five meter  
9 room with a, you know, a three meter ceiling.

10 We assumed a volume, a 75 cubic meter  
11 volume of area that could have been exposed, and  
12 assumed in that a standard breathing rate, you get  
13 a, an air concentration of about 8 E to the minus  
14 eleven microcuries per ml airborne, while they  
15 would have been doing this activity.

16 And so, if you assume that during a  
17 60-minute plating operation, a worker would have  
18 inhaled about .1 nanocuries or about four  
19 becquerels of exposure. And, given the assumption  
20 of this may have occurred maybe 100 times a year,  
21 you get a, an exposure that's much less than one  
22 millirem.

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1           So, for the nickel we've determined  
2           that really no, no the dose was considered  
3           negligible and no dose would be assigned.

4           CHAIR BEACH:    Okay.    Yes.    And I  
5           believe we agreed to that in our Work Group, one  
6           of our Work Group meetings.  Is that correct?

7           MR. SHARFI:     Yes.     I think we've  
8           presented this before.

9           CHAIR BEACH:    Yes.    You sure have.  
10          Any other questions or comments on this?

11          DR. BUCHANAN:  I just had one.  This is  
12          Ron Buchanan.  Do you know what years this took  
13          place?  I couldn't find any reference to years.  
14          Not that it really matters, but not -- it wasn't  
15          any reference to years this was done.  Do you know  
16          when that was done?

17          MR. SHARFI:    I do not off the top of my  
18          head.

19          DR. BUCHANAN:  Okay.  Was this a long  
20          thing?  Or, do you know if it was just a once, you  
21          know, a short campaign or have any idea on that?

22          MR. SHARFI:    Pat, do you remember, I

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1 mean we --

2 MR. MCCLOSKEY: I think we're saying it  
3 mirrors the manufacturing of the tritium monitors  
4 --

5 MR. SHARFI: I believe, yes.

6 MR. MCCLOSKEY: -- from 59 to 75, Ron.

7 DR. BUCHANAN: Okay. Well, I, kind  
8 of, thought that, but I didn't see it down and  
9 printed.

10 MR. MCCLOSKEY: Part of that  
11 operation.

12 DR. BUCHANAN: I reviewed this and  
13 again, it's pretty subjective, but I don't find  
14 that it amounts to hardly any dose.

15 So, you know, however, you set up this  
16 scenario, I don't think you'd come out with  
17 anything that would be significant regards to how  
18 you set up the boiling off of the fumes and all that.  
19 So, I didn't have any issue with it.

20 CHAIR BEACH: Okay. Thank you Ron.  
21 Work Group Members, any comments or questions?

22 MEMBER CLAWSON: Brad. No comments.

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1 CHAIR BEACH: Okay. Thanks. Okay.  
2 So, where that leaves us is with one action item  
3 for the dose reconstruction for mag-thorium. The  
4 method is good. We all agreed to that.

5 But, we need to -- NIOSH needs to redo  
6 the numbers, that's a 0.19 activity ratio. And,  
7 you'll get back to us on that. Is that correct?

8 MR. MCCLOSKEY: Correct.

9 CHAIR BEACH: Okay. And then we need  
10 to go back --

11 DR. LIPSZTEIN: And also the  
12 percentage of thorium from '61 to '63.

13 CHAIR BEACH: Okay. Say that again,  
14 Joyce, please.

15 DR. LIPSZTEIN: The percentage of  
16 thorium in the mag-thorium was three percent from  
17 '61 to '63, and then two percent from '70 on.

18 CHAIR BEACH: All right.

19 DR. LIPSZTEIN: So, it has to be  
20 different.

21 MR. SHARFI: Well, that would be a mass  
22 based given the results are in gross alpha. The

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1 percent mass is irrelevant to the exposure.

2 DR. LIPSZTEIN: Oh, okay. Yes. It's  
3 right.

4 CHAIR BEACH: Yes. I thought that was  
5 covered.

6 DR. LIPSZTEIN: Yes. Yes. Yes.  
7 That's right. That's right.

8 DR. MAURO: This is --

9 DR. LIPSZTEIN: That's right.

10 DR. MAURO: I have a question, I don't  
11 think we discussed. Again, it is probably is this  
12 Site Profile type issue is, for the time period from  
13 1963 to 1970, where our course is on discussion on  
14 to, you know, the weight of the evidence, that there  
15 really was nothing going on at that time by way of  
16 thorium.

17 I'm assuming, then, that if you go that  
18 route, the exposures to thorium would be like  
19 residual exposures, as opposed to operational  
20 exposures.

21 And, have we discussed that at all, the  
22 approach that -- give that the thorium doses for

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1 operations are so high, I presume even the thorium  
2 exposures for the residual period are not going to  
3 be insignificant. They're not going to be one  
4 millirem per year. And, I did not look at your  
5 example calculation.

6 I assume that in your example  
7 calculation, you included exposures to thorium  
8 during the residual period. Or, was the thorium  
9 operations not weapons related. I guess, I need  
10 just to understand the big picture during the  
11 residual period '63 to '70 if that's the route you  
12 go. But there was no --

13 CHAIR BEACH: That's a good question.  
14 I'm not sure we discussed it.

15 MR. SHARFI: There was no residual. I  
16 mean, the assumption was that because of the  
17 cleaning operations after each operation that  
18 there was no residual thorium after the operations.

19 DR. MAURO: Okay. Though, that's  
20 important, because I didn't hear that. So, in  
21 April of 1963, when according to your scenario,  
22 when thorium operations, mag-thorium operations

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1       ceased, there was a cleanup that took place such  
2       that there was not very much residual.

3               The only thing I would say to that is,  
4       in the past when we encountered, I'll call it a  
5       residual period, whether it's the true residual  
6       period at the end of operations, or window, kind  
7       of, period where there was no operations.

8               You would go to the approach where you'd  
9       make some estimate of what might have been on  
10      surfaces. And, then you use the ten to the -6  
11      resuspension factor and a rate of decline of .00067  
12      per day. And, not just shut it down completely.

13              Other words, you would assign some,  
14      what I would call cleaned up area residual scenario  
15      as opposed to assigning nothing. And, I don't know  
16      whether that's been discussed by the Work Group  
17      yet.

18              MEMBER CLAWSON: This is Brad. That's  
19      a very good point, because there we get back to the  
20      situation that we have no clear-cut date that shows  
21      when we stopped, when we didn't. So, when, if  
22      there wasn't any operations going on, there's got

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1 to be a residual.

2 CHAIR BEACH: Yes. Correct me if I'm  
3 wrong, I think we covered that in our D&D  
4 discussion.

5 MR. FITZGERALD: Well, we also  
6 interviewed at least one, if not two workers who  
7 were involved in the D&D that took place in D20 in  
8 the mid 60s. If you remember the one guy we talked  
9 to, I think it was he worked there until barely '65,  
10 and he was cleaning up those operations, so there  
11 was a cleanup.

12 And, also a continual cleanup with  
13 equipment being taken apart.

14 MR. SHARFI: Every time, yes. To make  
15 sure the equipment was perfectly between runs.

16 MR. FITZGERALD: So, you had, you know,  
17 you had interim cleanup and you had some periodic  
18 room cleanups. So, I guess that would have to be  
19 considered if you're talking about residual. I  
20 don't think there was a traditional residual period  
21 after the early 60s.

22 CHAIR BEACH: Yes. That's a good

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1 point.

2 MR. DARNELL: One other thing that we  
3 need to remember, this site is a little different  
4 with their shutdown that's occurred and the survey  
5 that's currently ongoing at the old Bendix  
6 facility.

7 If thorium or uranium were spread  
8 around a lot and would have been in areas to cause  
9 this residual contamination, it would be detected  
10 now also. Just ---

11 CHAIR BEACH: Well.

12 MR. DARNELL: Part of the half-life of  
13 the material and we're seeing one or two spots where  
14 the acceptable contamination to be based on the  
15 operations, but no indication that there was a  
16 general spread.

17 So, we would get this resuspension of  
18 radioactive materials from the workers working in  
19 their general work area. It just didn't spread  
20 around to do that.

21 CHAIR BEACH: Yes, I think --

22 MR. DARNELL: That's precludes the

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1 cleanup being effective in preventing a suspension  
2 period.

3 CHAIR BEACH: Pete, I think this goes  
4 more into the actual cleaning of the machines. I  
5 know that during our interviews, they talked about  
6 it taking days to clean those machines out so that  
7 they could break them down. So, and if that  
8 occurred during that time period that they're not  
9 covered, how would you cover them if it comes up  
10 that they were part of that work?

11 MR. SHARFI: The days, just the days  
12 after they stopped the work, or are you talking  
13 about like the seven years in between?

14 CHAIR BEACH: Well, I, Joe just said we  
15 had interviews that, in '65 they were talking about  
16 cleaning up the machines. And we did talk to a few  
17 people that took --

18 MR. SHARFI: I believe that the  
19 individuals Joe was referring to, they worked  
20 through '65, not that they were doing --

21 MR. FITZGERALD: No. They were, they  
22 were actually the individual, we have to pull his

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1 interview, but he was doing room cleanups. He  
2 actually cleaned a crane that was used in that D20  
3 operation. Now, he didn't do equipment cleanup.  
4 That was done by the laborers.

5 CHAIR BEACH: Laborers.

6 MR. FITZGERALD: I think we certainly  
7 found that out.

8 MR. SHARFI: Correct.

9 DR. MAURO: This is John again. The  
10 only reason I bring this up is that the standard  
11 procedure that has been applied across the board  
12 for the shutdown time periods, whether it's in  
13 between operations or at the end of operations, is  
14 to go at OTIB-70.

15 And, when there was cleanup, you still  
16 go at OTIB-70, but you use lower resuspension  
17 factors, that sort of thing. It sounds like that,  
18 in this particular instance, there's good reason  
19 and sounds like you're giving your reasons, why  
20 OTIB-70 does not apply.

21 That is, as opposed to many other sites  
22 that we work where it did apply. So, if that's the

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1 case, in other words, if we, the outcome of these  
2 deliberations are, yes, we are going to treat '63  
3 to '70 as a non-operational activity and assign  
4 zero to mag-thorium resuspension dose or residual  
5 dose, I think a case has to be made why that's the  
6 case since you're procedures do require, as a  
7 matter of standard operating procedure, to use  
8 OTIB-70.

9 CHAIR BEACH: Okay. And, I guess for  
10 me, this is Josie again, this is part, this will  
11 be part of a Site Profile discussion. Is that  
12 correct?

13 It's a good point, John, I'm not saying  
14 it's not, but for what we're doing today, I think  
15 that's something we need to keep in mind when we  
16 start discussing Site Profile issues. Is that, am  
17 I missing something or is that correct?

18 DR. NETON: This is Jim. Josie, I  
19 think you got it right. As John has pointed out,  
20 that there are methods to do residual contamination  
21 modeling for -- to '70.

22 It could be done, but I think the first

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1 issue to decide whether or not this period belongs  
2 as a residual or does it belong a regular exposure  
3 period.

4 CHAIR BEACH: Yes. That just brings  
5 up more food for thought there.

6 DR. MAURO: I hate to bring this up, but  
7 is I have not heard an SEC issue arise during this  
8 conversation.

9 CHAIR BEACH: Then, no, this, the Board  
10 asked us to do sample dose reconstruction. So,  
11 this is why we're focusing on sample dose  
12 reconstruction. They're not SEC issues at this  
13 point other than we haven't closed out 13 yet --

14 DR. MAURO: Okay.

15 CHAIR BEACH: -- which was, is an SEC  
16 item.

17 DR. MAURO: Okay.

18 CHAIR BEACH: So, this would go back  
19 into Issue 13. If we haven't covered it, then we  
20 may want to let that linger open until we, we're  
21 assured that, that is covered. Is that correct?

22 DR. NETON: Which one is Issue 13,

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1 Josie?

2 CHAIR BEACH: Thirteen is the  
3 mag-thorium, and it is the one that has the dates  
4 that aren't covered, the '63 to '70.

5 DR. NETON: See, I don't know that,  
6 that's an SEC issue as far as I'm concerned. I  
7 mean, it's either --

8 CHAIR BEACH: Well --

9 DR. NETON: --we either include it or  
10 we don't include it. I think either way. Well,  
11 if we include it, the method is there for bounding  
12 the dosage. It's just a decision needs to be made  
13 one way or the other.

14 CHAIR BEACH: Right. Yes. So, this  
15 was just something new that I don't know if we've  
16 addressed or thought about it if there was any  
17 cleanup being done during that time period. So --

18 DR. NETON: Well, again, if we decide  
19 that operations didn't continue in that period,  
20 and, you know, it could be discussed as a Site  
21 Profile issue as to how much dose if any were added  
22 --

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1 CHAIR BEACH: Right.

2 DR. NETON: -- during the residual  
3 period.

4 CHAIR BEACH: Right.

5 DR. NETON: The worst case scenario  
6 would be, you take three times ten to the minus  
7 eleven and drop it down for 30 days per --

8 CHAIR BEACH: Yes.

9 DR. NETON: -- the requirements and  
10 calculate the surface concentration and estimate  
11 a resuspension factor.

12 CHAIR BEACH: Okay.

13 DR. NETON: And, find that dose.  
14 That's pretty straightforward.

15 CHAIR BEACH: Yes. It is. It sounds  
16 reasonable to me. So, any other comments or  
17 questions and we can wrap up these two discussions?

18 So, on the dose methodology we already  
19 said NIOSH has got an action there. As far as,  
20 let's go back to the mag-thorium issue. Is the  
21 Work Group comfortable closing 13?

22 Keeping in mind that if any additional

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1 information for that time period that we've been  
2 discussing comes up, that of course we'll address  
3 that. Is there any other discussion on that, or  
4 shall we close it? Brad?

5 MEMBER CLAWSON: I just, I think it's  
6 something we need to address, but I think NIOSH is  
7 already shown that, you know, they've got the  
8 ability to be able to bound it and so forth like  
9 that.

10 We just, I don't want to see this  
11 dropped. But, I think, I don't think it's a SEC  
12 issue. I think it's more of a Site Profile.

13 CHAIR BEACH: Okay. Then we'll take  
14 it up there. Loretta? Close or?

15 MEMBER VALERIO: Yes. I would say  
16 close it.

17 CHAIR BEACH: John? Jim?

18 MEMBER LOCKEY: I'm okay.

19 CHAIR BEACH: Okay. Thanks Jim.  
20 John are you still with us? We might have lost  
21 John. I agree that it should be closed. So, at  
22 this time, Item 13 is closed.

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1           We have one action for the sample dose  
2 reconstruction. Before we leave that though,  
3 Pete, we do, we are going to report out to the Board.  
4 And, this was one of the Board, Board's requests  
5 during our Work Group time was that NIOSH do these  
6 DRs.

7           Are you going to do a presentation on  
8 what you guys have done here for dose  
9 reconstructions when they're complete of course?

10           MR. DARNELL: What I was planning on  
11 doing based on the outcome of this meeting was a  
12 full presentation for the Board with our  
13 recommendation whether or not there was an SEC for  
14 Kansas City. And, I could definitely include an  
15 overview of the example DRs.

16           CHAIR BEACH: Okay. Yes. I think  
17 that you probably should. That would be a good  
18 idea. Okay. So, we are moving on. Does anybody  
19 need a comfort break? We've been at it a little  
20 over an hour.

21           MR. DARNELL: I just want to ask one  
22 thing to make sure I have it captured.

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1 CHAIR BEACH: Okay.

2 MR. DARNELL: What's coming out of this  
3 Site Profile issue will be residual mag-thorium  
4 monitoring. Issue 13's closed. We're redoing  
5 the example DR for 0.19 activity ratio. Is there  
6 another thing that was being moved to Site Profile?

7 CHAIR BEACH: No. I think this was all  
8 we had talked about.

9 MR. DARNELL: Okay. Then, I'm happy  
10 with a break if you guys want to take one, or.

11 CHAIR BEACH: Okay. Well, we've got  
12 --

13 MR. DARNELL: Or not.

14 CHAIR BEACH: We've got another  
15 probably 15 to 30 minutes to go I would say. So,  
16 Ted, shall we take a five or ten minute break.

17 MR. KATZ: If, does anyone want a  
18 comfort break?

19 CHAIR BEACH: Pete just said he would  
20 like one.

21 MR. KATZ: Oh. Okay. Then, let's, by  
22 all means.

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1                   MR. DARNELL: No. I said, I'm okay  
2 with not having one.

3                   MR. KATZ: Oh. Okay. Then if no one  
4 is asking for one, then let's just, let's plow  
5 through.

6                   CHAIR BEACH: Let's move through. So,  
7 the next issue is the preliminary issue on  
8 information on Issues 1 and 9. And, Pete, that's  
9 yours to tell us what's happening there, or Pat.

10                  MR. DARNELL: Yes. Actually, I'm  
11 going to turn it over to Pat after, and let you know  
12 that we fully plan on having the final on this done  
13 at least a week if not longer before the Board  
14 meeting. But, now we're shooting for a week before  
15 the Board meeting.

16                  CHAIR BEACH: Okay. Are we going need  
17 to have some discussion on it before?

18                  MR. DARNELL: Well, I'm, based on my  
19 initial views of this and talking to Jim Neton about  
20 it. It's nothing really good. I'll let Pat cover  
21 that. I don't think that we'll need a lot of  
22 discussion if any at all.

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1 CHAIR BEACH: Okay.

2 MR. DARNELL: But, after -- if it's  
3 none, we can decide then. How's that?

4 CHAIR BEACH: Okay. That sounds  
5 great. Thanks.

6 MR. DARNELL: Okay.

7 MR. MCCLOSKEY: Okay. This is Pat  
8 McCloskey. At the July Work Group meeting, NIOSH  
9 described the plan for validating the database and  
10 showed a copy of the template that would be used  
11 to compile the data. That's when they held up that  
12 spreadsheet.

13 We described our plan to extract the raw  
14 data from the DOE supplied dose records in NOCTS  
15 and compare them to the database previously used  
16 for coworker model and the Site Profile.

17 The NOCTS files that we have for Kansas  
18 City Plant contain 223 claims with external  
19 dosimetry records, and 95 claims with internal  
20 dosimetry records. We also said that our plan was  
21 to compare 100 percent of those NOCTS dosimetry  
22 records contained within the 318 claims to the

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1 17,810 database records.

2 Then, at that July meeting, the Work  
3 Group stated that they agreed that, that would be  
4 an appropriate means by which the electronic  
5 database could be validated through comparison  
6 sampling.

7 So, here's how the data entry  
8 performance went. Entry of the external data from  
9 the claimant data located in NOCTS was completed  
10 by five data entry staff. Their work began on  
11 August 24th, 2015 and was completed by September  
12 30th.

13 The data was identified as being within  
14 the same time period used from coworker model --  
15 that's January 1, 1950, through December 31, 2010.  
16 That data was entered into a spreadsheet and single  
17 tasked with periodic stops in data entry in order  
18 to peer review the data that had been entered up  
19 to that point

20 The data entered by one person was peer  
21 reviewed by another data entry staff member so that  
22 the same person was not reviewing his or her own

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1 work. And, that amounted to 100 percent review of  
2 all that data entered into that spreadsheet.

3 After completion of the data entry or  
4 external dosimetry data, another step was taken to  
5 insert uranium in urine, or U in U results from the  
6 identified claimants.

7 Two data entry staff were tasked with  
8 inserting the in-vitro analysis data into the  
9 spreadsheet. And, during this effort another peer  
10 review was conducted to identify and correct  
11 discrepancies or errors.

12 There were several different formats  
13 for the staff to decipher while entering the data.  
14 And, in the end, they compiled 5,878 lines of data  
15 onto a spreadsheet, with each line containing  
16 between one and seven individual records.

17 So, here's our results. On October 1,  
18 2015, two officers, myself and another began  
19 compiling and comparing the NOCTS data to the  
20 database data used in the Site Profile's coworker  
21 model. It's the information printed the  
22 spreadsheet and it would be deep dose, neutron

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1 dose, shallow dose and U in U data.

2 And, we completed our preliminary work  
3 on that on October 19th. That's why you're not  
4 seeing this in a written form right now. It's been  
5 that recent. There were 1,653 annual totals that  
6 were compared between the sum of NOCTS raw records  
7 and the database annual totals. Of those, 1,598  
8 or 97 percent were determined to agree.

9 Of the 55 entries with some level of  
10 disagreement, approximately 15 were because the  
11 NOCTS records could not be easily read and  
12 requesting a cleaner copy from Kansas City Plant  
13 would most likely resolve the discrepancy.

14 Also, approximately 15 discrepancies  
15 are associated with the database or NOCTS  
16 soliciting an actual zero value, and the other  
17 having no record value. In other words, it was  
18 blank. The remaining 26 discrepancies are still  
19 under review to determine the source of the  
20 discrepancy.

21 The data that were not considered in the  
22 Site Profile's coworker, that's eye dose and

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1 extremity dose, were added to the previous data I  
2 just mentioned about, just mentioned. That would  
3 be added to the deep, the neutron, the shallow and  
4 U in U data. And, we performed an analysis of that  
5 looking for the level of agreement.

6 And, of the 1,805 annual totals that  
7 were compared 1,714, or 95 percent were determined  
8 to agree. And, we haven't analyzed those  
9 discrepancies yet.

10 Then we analyzed internal data  
11 separately. We found there to be a 179 annual  
12 totals, and 157 or 88 percent were determined to  
13 agree. Of those, now there appears to be between two  
14 disagreements. I think they would be better  
15 classified as yet to be verified.

16 And, so as you heard me say before, from  
17 the external dose comparison approximately 15 were  
18 because of the NOCTS records could not be easily  
19 read.

20 The lion's share of those discrepancies  
21 were for internal monitoring. So, they  
22 contributed to the error rate up, when they were

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1 all added together. But, when you pulled it out  
2 by itself, they had a larger effect.

3 And, what we're seeing is that prior to  
4 1963, and maybe even earlier -- we're going to get  
5 that date pinned down. The practice was that you  
6 had these four inch by six inch index cards where  
7 they wrote their doses on those index cards went  
8 inside an envelope.

9 And, the internal records were always  
10 were always written on the envelopes themselves,  
11 handwritten on there. And, that was the practice  
12 for the first few years. And, those are where we  
13 had the problems with legibility.

14 This is something that, you know, that  
15 Ron Buchanan brought up a while ago on a different  
16 issue. Something that we looked at when we visited  
17 the site.

18 And, so, you know, the legibility's  
19 never a question with the database. Right.  
20 That's electronic file, that you can always read  
21 that. And, you'll see a zero there for a certain  
22 person for a certain time period.

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1           And, then you go to the NOCTS record and  
2 you can imagine there's something there, but you  
3 can't in good faith call it a number. So, at the  
4 moment, we're calling it a disagreement. We think  
5 if we are able to get more copies from the site that  
6 those disagreements will become agreements.

7           Initially, maybe in 2006 or so, the  
8 site, when we wouldn't have a claim, would Xerox  
9 something black and white, send it to us, we would  
10 scan it in to NOCTS. And, there are examples in  
11 NOCTS now that you can see that are just hard to  
12 read.

13           But, since then, more recently, we've  
14 received information from the site in the form of  
15 digital. We've gotten flash drives from them.  
16 And so now, they're in color. They're no longer  
17 black and white. You can see the yellow card  
18 clearly.

19           So, we're pretty confident that  
20 although there are some disagreements at the moment  
21 for internal, that those will become agreements.

22           So, another note, when we were doing

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1 this comparison of internal records, it was  
2 identified that the U in U values recorded in the  
3 database are the sum of the individual urinalysis  
4 results collected throughout a given year.

5 So, if a person had, he contributed  
6 three or four urine samples throughout the year,  
7 the only value you'll see in the database is the  
8 annual total.

9 This approach may lead to a high bias  
10 or more claimant, claimant favorable in the file  
11 numbers that were presented in the Site Profile  
12 coworker model. So, that's what we have. We're  
13 in our early stages of our review on this. So,  
14 we'll try to get that in writing, like Pete said,  
15 in the next couple weeks.

16 CHAIR BEACH: Okay. Thanks. So, and  
17 when you distribute that will you have source,  
18 sources available for review? Source numbers and  
19 --

20 MR. MCCLOSKEY: You mean like NOCTS  
21 files you can go to and look at --

22 CHAIR BEACH: Yes.

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1 MR. MCCLOSKEY: -- or --

2 CHAIR BEACH: Yes.

3 MR. MCCLOSKEY: -- like spreadsheet.  
4 Yes. Sure.

5 CHAIR BEACH: Yes. Okay. Thanks  
6 Pat. Any questions for Pat? I'm assuming, Joe,  
7 Ron will be reviewing this?

8 MR. FITZGERALD: Yes. I suspect so.  
9 When, I guess my question was when you're in the  
10 review process. When would the Work Group see a  
11 written product? I suspect some a couple weeks  
12 before the Work Group, or the Board meeting.

13 CHAIR BEACH: He said a week.

14 MR. FITZGERALD: A week before the  
15 Board meeting.

16 MR. MCCLOSKEY: So, the Board  
17 meeting's November 18th. Here we are at the 26th.

18 MR. FITZGERALD: So, about, somewhere  
19 about that time frame then?

20 MR. MCCLOSKEY: As fast as we can get  
21 it.

22 MR. FITZGERALD: All right.

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1 DR. BUCHANAN: This is Ron. We'll  
2 need that, you know, sent to me as soon as possible  
3 because that doesn't leave much time to go through  
4 a lot of data. As soon as you get it out, I don't  
5 want it sitting on somebodies desk a week before  
6 I see it.

7 MR. KATZ: Yes. This is Ted. I  
8 wonder, I know this is all complicated logistics  
9 as to getting things clear, but if it's possible,  
10 if you work out a way that you can even in  
11 increments, as you get things done, sort of, ship  
12 them out for Ron at least, put eyes on even before  
13 you have the whole publishable thing ready.

14 If that's possible, that would be  
15 great. I'm not pressing you on that, I'm just,  
16 just a thought.

17 MR. DARNELL: Again, let me get back to  
18 you on that.

19 MR. KATZ: Yes. I'm not, like I said  
20 --

21 MR. DARNELL: I don't want an answer on  
22 if that's even possible. I'd like to talk with Pat

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1 and Ron.

2 MR. KATZ: Great.

3 MR. DARNELL: See about that tomorrow.  
4 I'll either get back with you later today or  
5 tomorrow.

6 MR. KATZ: Yes. Thank you. Thanks  
7 Pete.

8 CHAIR BEACH: Okay. So, just knowing  
9 that if that comes too late and we're not able to  
10 review it, that may hold up formal discuss, or  
11 recommendation to the Board potentially.

12 MR. DARNELL: I understand.

13 CHAIR BEACH: Okay. So, anything  
14 else, Work Group Members, on Issues 1 or 9? That  
15 actually concludes our work. We do have some  
16 official --

17 MR. KATZ: Josie. I'm sorry, it's  
18 Ted.

19 CHAIR BEACH: It's not -- Ted, I'll get  
20 back to you.

21 MR. KATZ: Okay.

22 CHAIR BEACH: I'm not going to forget

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1 that you need to read those in.

2 MR. KATZ: That's not what I was going  
3 to address. I was going to address your point  
4 about recommendations.

5 Just, if you, if the Work Group's going  
6 to make a recommendation to the Board, it's either  
7 going to formulate it now or it's going to do, it  
8 would have to, sort of, do it in sort of  
9 consultative form during the Board meeting at the  
10 front end of the session.

11 But, there's no other way for the Work  
12 Group to come up with a recommendation unless you  
13 think --

14 CHAIR BEACH: Oh. That's true.

15 MR. KATZ: It's very hard to schedule  
16 a Work Group meeting for the last moment, but we  
17 could try that too, but.

18 CHAIR BEACH: Yes. That's a good  
19 point.

20 MR. KATZ: So, I mean, one suggestion  
21 I would have is you just make a contingent  
22 recommendation pending a positive outcome with

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1 this data check, validation check.

2 CHAIR BEACH: Right.

3 MR. KATZ: And then, you know,  
4 obviously we've done this sort of thing before. I  
5 mean, you can present at the Board meeting and  
6 whatever, however that comes out, you can address  
7 that as part of it. But, I mean, that's probably  
8 the easiest thing to do.

9 MR. DARNELL: There is one thing I'd  
10 like to point out, you know, if it's sent with the  
11 database validation, all we're trying to do is see  
12 whether the database is valid for coworker model.  
13 Coworker model is actually a Site Profile issue.

14 CHAIR BEACH: Yes. I agree with that.

15 MR. DARNELL: I think --

16 DR. NETON: You know, Pat was not  
17 exuberant as I would be about this preliminary  
18 result. I mean, you know, of the first, in the  
19 External Dosimetry Database, there was 97 percent  
20 agreement of the annual, compared to the annual  
21 totals. That's pretty good.

22 I mean that, and the ones that weren't

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1 in agreement were typically very small, you know,  
2 either zeros or non-detects, that sort of thing.  
3 There was some legibility issues on a few.

4 But I think what we're looking at here  
5 is the sampling we have that is sent up by the site  
6 of the original record here in this database,  
7 pretty faithfully. So, I'm very encouraged by  
8 this. I think that the database is pretty solid.

9 I don't see any indication of big chunks  
10 of data missing. Even in the internal where there  
11 was 88 percent agreement, it really is a kind of  
12 a legibility issue of what we currently have in  
13 house. So, I would say that I'm very favorably  
14 impressed with this initial analysis that they've  
15 done. Just my concern.

16 CHAIR BEACH: Okay. Thanks, Jim.  
17 And, I guess, I tend to agree that 1 and 9 are both  
18 Site Profile issues unless Joe, you have any other  
19 concerns there. Just --

20 MR. FITZGERALD: Well, the reason that  
21 they're even on the SEC issues matrix is the  
22 validation verifications. The standard step that

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1 the Work Group looks for, I think --

2 CHAIR BEACH: Right.

3 MR. FITZGERALD: -- in terms of the  
4 validity of the data to begin with. And, as a  
5 matter of course, and for Kansas City, at least,  
6 that had not been done. So, you know from the  
7 standpoint of SOP as far as the Work Groups are  
8 concerned, we typically look for this at the very  
9 beginning.

10 And, it is a, I don't want to call it  
11 a prerequisite, but it's certainly, the validity  
12 of the data itself is something that's central to  
13 the SEC review.

14 CHAIR BEACH: Right.

15 MR. FITZGERALD: I mean, if the data's  
16 not valid, I would think that alone would be a  
17 question on the SEC side.

18 MR. DARNELL: Well, let me ask you  
19 this, Joe. What do you need to be able to make the  
20 call that the V&V is adequate? Do you need the  
21 entire report? Will a summary do?

22 And, the reason why I'm asking is my

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1 goal is I'd like to have this presented and done  
2 in November. And, I know it, but pushing up  
3 against a real uphill climb here.

4 MR. FITZGERALD: Yes. I think, to  
5 answer your question, you know, we're two things  
6 really. The process itself, which is the process  
7 you're going through to be able to advise the Work  
8 Group that we felt the process is consistent with  
9 what's been done in the past. And, that certainly  
10 the review was sound.

11 The second thing, of course, is what Jim  
12 was referring to is the results of that process,  
13 and whether the results bespeak a degree of  
14 validity, which, you know, bolsters the legitimacy  
15 of the dose reconstruction process. So ---

16 MR. DARNELL: Correct.

17 MR. FITZGERALD: I think, to go back to  
18 what Ted was talking about, if we can have enough  
19 for Ron to both understand the process that was  
20 undertaken and to have a sense of what results were  
21 achieved, we can certainly convey that to the Work  
22 Group in time for the meeting and put them in a

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1 better position to sign off on this.

2 CHAIR BEACH: Yes, I -- anything from  
3 you, Pete, on that?

4 MR. DARNELL: Yes. Right now, based  
5 in our, or on the talks that I've had previously  
6 with Pat and Mutty, there is no way we're going to  
7 get done with that far enough that, that the answer  
8 both of those questions for Joe before the November  
9 meeting.

10 MR. KATZ: Well, this is Ted.

11 MR. DARNELL: Unless, I mean --

12 MR. KATZ: I think what can be done is  
13 you get done what you can. Do what you can do. I  
14 think the Work Group can report out and again, I  
15 can, they can report out sort of a contingent  
16 recommendation.

17 And, raise this issue of this is the  
18 status of this work which you will have presented  
19 on, Pete, in your presentation, and the Board can  
20 consider that and decide whether it's comfortable  
21 going forward before it sees the results, the final  
22 results of that or not.

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1 I mean, I really don't think the Work  
2 Group needs to struggle with this time limit here.  
3 Just, as long as the Board gets the full facts of  
4 where that stands and how that was done, and  
5 certainly Ron can review the procedure being  
6 applied. I mean, I think that's okay and then the  
7 Board will do what it will do depending on their  
8 level of comfort.

9 I don't think this should, sort of, hang  
10 anything up here. And, it may hang up the Board  
11 at the end of the day, but it may not. But, we'll  
12 see.

13 CHAIR BEACH: Okay.

14 MR. KATZ: So, and just, Josie, before  
15 we wrap, let's just, so whatever assistance you  
16 need. I don't know if you have a plan yet. You  
17 see heard -- Pete will give a full, fairly full  
18 presentation on I mean, following up on the  
19 presentation he made, you know, way back when, but,  
20 sort of, concluding the NIOSH side of that.

21 Then you're welcome to, you know, use  
22 Joe or whomever from SC&A and do a joint

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1 presentation or however you want to handle that.

2 CHAIR BEACH: Okay. I typically do  
3 slides and send them to Joe and he reviews them.

4 MR. KATZ: Oh.

5 CHAIR BEACH: And, so, Joe, we could do  
6 that. Probably, I'll do that again.

7 MR. DARNELL: So, Josie, should I plan  
8 on a full presentation or --

9 CHAIR BEACH: Yes. I'd say --

10 MR. DARNELL: -- have it be --

11 CHAIR BEACH: I would say yes because  
12 even if we don't come to a vote the next meeting,  
13 I mean, they will have all the information and it  
14 would be simply another report out from the Work  
15 Group on our conclusions and then we could vote at  
16 the next teleconference if ---

17 MR. KATZ: Right. And it, it just  
18 depends on how the Board is feeling about this.  
19 The Board may be comfortable going forward in this  
20 circumstance. Who knows. So, it's --

21 CHAIR BEACH: So, yes I would say  
22 prepare for a presentation.

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1 MR. DARNELL: Okey-doke.

2 CHAIR BEACH: Okay. Anything else?  
3 Any other comments or concerns for Work Group  
4 Members on where we're at? Thanks for your  
5 thoughts there Ted, that's helpful.

6 MR. KATZ: Sure.

7 CHAIR BEACH: So, we're on to  
8 petitioners concerns. And, are any of the  
9 petitioners on the line? I don't expect either  
10 Maurice or Wayne, but essentially you may have  
11 joined.

12 MR. KINMAN: Josie, this is Josh.  
13 They both told me that they probably would not be  
14 on. Mr. Knox could be on. I'm not sure, Maurice  
15 told me no.

16 CHAIR BEACH: Yes. I knew Maurice was  
17 not going to be, but I wasn't sure about Wayne, so.

18 MR. KINMAN: They just joined before  
19 the --

20 MR. KNOX: I was listening in.

21 CHAIR BEACH: Okay. Did you want to  
22 ask questions or speak, or did you have anything

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1 or did you just want your statement --

2 MR. KNOX: I'm still --

3 CHAIR BEACH: I'm sorry?

4 MR. KNOX: I'm still at the same point.

5 It looks like you're looking at a lot of data and  
6 you're not looking at the reality of what happened.  
7 I was there. I lived in that world.

8 There was misrepresentation of data.  
9 We covered a lot of things up. But, you're just  
10 looking at what we said, did, which is a lie. And  
11 you will not allow me to stand in and say wait, this  
12 is really what happened. And, how many people  
13 actually were there? How many people got exposed?

14 I got exposed. I got contaminated. I  
15 cannot tell you what my radiation dose was and I  
16 was with Wayne all of the time. No one can.

17 And it's upsetting to me that I'm not  
18 allowed inject reality into this. The solution is  
19 a combination of available data and reality. But,  
20 reality was the dominant player in terms of the  
21 radiation exposure.

22 There are two major areas that concerns

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1 me. One is the inclusion of all, all of the people  
2 who supported Kansas City operations in the SEC.  
3 That were GSA workers that physically went in that  
4 place and did work. They tracked contamination  
5 back to the other side. But, they're not included.

6 And the other thing is that, and keep  
7 in mind I worked there, we did not change things  
8 magically in 1993. It was still business as usual.  
9 I wasn't radiation sick. I was project manager and  
10 an operational healthcare assistant manager --  
11 know what happened to me and the other workers.  
12 But, you will not allow me to inject reality in your  
13 discussions. I'm through.

14 CHAIR BEACH: Okay. Thank you, Wayne.

15 MR. KATZ: I have a Maurice's  
16 statement. Do you want me to read that, Josie?

17 CHAIR BEACH: Well, let me finish. I  
18 got one more part to this and then I'll have you  
19 --

20 MR. KATZ: Okay. Sorry.

21 CHAIR BEACH: Ted, if you don't mind.  
22 So, on July 16th, the Work Group Members are aware

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1 that we had a date set aside for the petitioners  
2 to come in and address the Board.

3 We did have one work product that was  
4 asked for us to provide. Mr. Knox asked for five  
5 different items. The only one that we could  
6 actually come up with and do and we got that out  
7 on September 30th was the time line of the  
8 radiography used at KCP and the procedures that  
9 were in place.

10 So, Ron spent some time, he created that  
11 document and that went out to the Work Group again  
12 on September 30th. So, we did that.

13 The other thing I want to point out is  
14 we had the conference calls on September 12th.  
15 That was because one of our petitioners asked us  
16 about a couple incidents and he wanted us to  
17 question a couple more workers. So, we went out  
18 and tried to find the three that he asked us to  
19 interview.

20 One of them we were unable to contact.  
21 The other two we got and then we had someone that  
22 we had missed on the earlier discussion. So, we

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1 interviewed three people. And, that was a direct  
2 result of petitioners' concerns and requests.

3 So, I just want to bring you up to date  
4 on some of the things that we have done and tried  
5 to do to come to terms with incidents and  
6 petitioners' concerns.

7 So, Ted, I'll let, unless anybody has  
8 any other comments on that or questions, then Ted  
9 can -- and, you all have Maurice's email and  
10 Wayne's.

11 MR. KATZ: Right. This is Ted.  
12 Assume since Wayne spoke, he doesn't want me to read  
13 his, but I'm happy to read his comment if he wants  
14 to as well. But, let me start with Maurice's  
15 anyway.

16 MR. KNOX: I have no objection to you  
17 reading it.

18 MR. KATZ: Excuse me?

19 MR. KNOX: Because, it is what I mean.

20 MR. KATZ: I cannot hear you. Excuse  
21 me?

22 CHAIR BEACH: He said he has no

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1 objection.

2 MR. KNOX: I have no objection.

3 MR. KATZ: That's fine. That's fine.  
4 I'll read it. That's what I just was saying. I'm  
5 happy to read it if Wayne wants to. I didn't know  
6 whether he --

7 MR. KNOX: I have no objection --

8 MR. KATZ: -- if he wanted to with his  
9 oral comment. But, that's fine. Let me start  
10 with Maurice's since it came first.

11 So we received this on Friday, October  
12 23rd, from Maurice. My comment to the Work Group,  
13 please read to the Work Group.

14 I want the request to be decided one way  
15 or the other. But, I will not dignify this process  
16 with my attendance any longer. My attention is on  
17 the decision and at this point receiving records  
18 generated from my personal exposure incidents.

19 This Work Group has not been able to  
20 find out any information or locate a person  
21 involved in an incident of approximately just 16  
22 years ago. How does this Work Group think it can

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1 reconstruct over 60 years of exposure? Strange,  
2 I would say. Scientific, I don't think so.

3 All of our government agencies could  
4 not find [identifying information redacted].  
5 What a shame. I found her. Pete Darnell of the  
6 Work Group has fabricated information of evidence  
7 at the Work Group meetings, contradicted himself  
8 many times and no one has questioned him at the Work  
9 Group meetings.

10 These games I won't play, shall I say,  
11 any longer. There are other exposure incidents I  
12 have questioned that have not been discussed,  
13 reference [identifying information redacted]  
14 (phonetic), [identifying information redacted]  
15 (phonetic), [identifying information redacted]  
16 (phonetic), [identifying information redacted]  
17 (phonetic), [identifying information redacted]  
18 (phonetic) and myself. I'm waiting the decision.  
19 That's it. Maurice Copeland.

20 CHAIR BEACH: Okay. Ted before you go  
21 on, I'll just go --- I did ask Maurice to share  
22 [identifying information redacted] contact

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1 information and he declined to share that with us.

2 We were going to set up a conference  
3 call with her last week. So, we were unable to do  
4 that. And, we did contact and talk to [identifying  
5 information redacted] and [identifying  
6 information redacted]. Neither of them  
7 remembered the incident in question.

8 MR. KATZ: Okay. Thanks, Josie.

9 CHAIR BEACH: Yes.

10 MR. KATZ: So, then let me just work my  
11 way forward. So, Wayne, Mr. Knox has sent these  
12 comments, which I'll read now, from Monday of this  
13 week.

14 As a principal petitioner and author of  
15 SEC 210, I'm in complete agreement with  
16 [identifying information redacted]. I consider  
17 the actions of the Work Group and Advisory Board  
18 in general to be incompetent and not worthy of  
19 advising anyone much less the President on an  
20 actual or operational radiation exposures and  
21 practices.

22 They, including NIOSH officials,

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1 clearly and knowing misrepresent obvious technical  
2 facts in violation of laws, regulations and our  
3 humanity.

4 NIOSH's and the Board's principal  
5 objective appear to be to protect the corporate  
6 liability associated with the criminal exposure of  
7 workers and second-hand exposures to family  
8 members and surrounding communities.

9 We, the nuclear workers, were perceived  
10 to have been fighting for our national security.  
11 But, rather we are now fighting for our lives. We  
12 are suffering and dying, yet criminally denied  
13 authorized medical care for increased corporate  
14 profits in developing patentable technology in the  
15 application of radiation and nuclear materials.

16 It was not all about the bomb for  
17 national security. All of these profitable  
18 corporate ventures were supported by the use of  
19 free public facilities and equipment and an  
20 uninformed group of disposable workers.

21 It was done under the cover of national  
22 security with a hold harmless indemnification

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1 placed in the corporate back pocket by our  
2 conservatively installed career civil servants.

3 The complicit civil servants, now and  
4 then, attempt to hide behind self-regulatory  
5 authority, FOIA and the self-disclaimers of the  
6 actions of the offending contractors.

7 As a special graduate student, I had  
8 one-on-one studies directly under the father of  
9 health physics, [identifying information  
10 redacted], and as an operational health physicist  
11 working directly under [identifying information  
12 redacted] arguably, the father of operational  
13 health physics.

14 Both stated to me in different contexts  
15 and perspectives, quote there is no safe level of  
16 radiation exposure unquote. The question is, how  
17 much is the risk and how much can we minimize it.  
18 Prevention was not an option, if we wanted to  
19 explore the use of radiation and radioactive  
20 materials for the betterment of mankind.

21 We, nuclear workers, I knowingly and  
22 others without knowledge or consent, were placed

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1 at risk for an indecipherable combination of  
2 national security, national interests and  
3 corporate profits.

4 When the risk prevailed and allowances  
5 are authorized by Congress under EEOICPA and  
6 supported by the Clinton Executive Order 13179, we  
7 expect and demand quote compassionate, fair and  
8 timely unquote treatment as directed.

9 This must be done without regard to sex,  
10 race, religion, worker class, political  
11 affliction, lifestyle preferences or shared  
12 government corporate liability. Wayne Knox.  
13 That concludes Wayne's statement.

14 CHAIR BEACH: Thanks, Ted. Okay.  
15 Any other comments or other Work Group Members?  
16 And, I have a question for Ted, then. Can I go  
17 ahead and ask SC&A to update the matrix? I know  
18 it's very minor.

19 MR. KATZ: Yes. Absolutely. I mean  
20 it's nice to button it up. Right?

21 CHAIR BEACH: Okay. And, then the  
22 other thing, Pete sent out a Site Profile matrix

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1 on 8-20-15. There is a Site matrix third version,  
2 original matrix that SC&A did.

3 Is it too early to ask SC&A to  
4 incorporate Pete's matrix into the one that was  
5 created in, I can't remember what the date is now?

6 MR. KATZ: I think that will be good  
7 just so that when we have the next meeting, we'll  
8 add it to TBD issues. We're fresh up to date with  
9 that.

10 CHAIR BEACH: Okay. Joe, you okay  
11 with that?

12 MR. FITZGERALD: Yes. It's fine. I  
13 will consolidate and update the original matrix.  
14 It'll look a lot like Pete's from about a month or  
15 two ago, but.

16 CHAIR BEACH: Sure.

17 MR. FITZGERALD: Do you want a separate  
18 Site Profile matrix or do you want to still use the  
19 same one?

20 CHAIR BEACH: No. Let's do a separate  
21 one.

22 MR. FITZGERALD: Separate, separate

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1 one. Okay. So, we'll have a second one that'll  
2 be exclusively Site Profile.

3 CHAIR BEACH: That'd be great. And,  
4 then, so let's be clear. The action is just for  
5 NIOSH on the dose reconstruction for the thorium  
6 method. SC&A to update the matrix and the Site  
7 Profile, to update the Site Profile matrix.

8 MR. KATZ: Yes. And you may want, Joe,  
9 to just hang on before producing that Site Profile.  
10 Hang on and wait for this latest piece from --

11 CHAIR BEACH: Yes.

12 MR. KATZ: -- NIOSH on the data  
13 validation.

14 CHAIR BEACH: So, update it but don't  
15 distribute it until the latest is done.

16 MR. FITZGERALD: All right.

17 CHAIR BEACH: That seem reasonable?

18 MR. FITZGERALD: Yes.

19 CHAIR BEACH: Okay. Did I miss  
20 anything or we all set? Thank you --

21 MR. DARNELL: Thanks all.

22 CHAIR BEACH: Oh. Go ahead Brad.

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1 MR. KATZ: That was just Pete saying  
2 thanks.

3 CHAIR BEACH: Oh. Okay. Sorry. I  
4 spoke over you. So, I guess we can close this  
5 meeting. Thank you everyone.

6 MR. KATZ: Thank you everybody.

7 (Whereas the above-entitled matter  
8 went off the record at 3:13 p.m.)

9  
10  
11  
12  
13  
14