

This transcript of the Advisory Board on Radiation and Worker Health, Procedures Subcommittee, has been reviewed for concerns under the Privacy Act (5 U.S.C. § 552a) and personally identifiable information has been redacted as necessary. The transcript, however, has not been reviewed and certified by the Chair of the Procedures Subcommittee for accuracy at this time. The reader should be cautioned that this transcript is for information only and is subject to change.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
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SAFETY AND HEALTH

+ + + + +

ADVISORY BOARD ON RADIATION AND  
WORKER HEALTH

+ + + + +

SUBCOMMITTEE ON PROCEDURES REVIEW

+ + + + +

WEDNESDAY  
JANUARY 5, 2011

+ + + + +

The Work Group convened in the Zurich Room of the Cincinnati Airport Marriott, 2395 Progress Drive, Hebron, Kentucky, at 9:00 a.m., Wanda Munn, Chair, presiding.

PRESENT:

WANDA I. MUNN, Chair  
MICHAEL H. GIBSON, Member\*  
MARK GRIFFON, Member\*  
RICHARD LEMEN, Member  
PAUL L. ZIEMER, Member

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ALSO PRESENT:

TED KATZ, Designated Federal Official  
ROBERT ANIGSTEIN, SC&A\*  
TERRIE BARRIE, ANWAG\*  
HANS BEHLING, SC&A\*  
KATHY BEHLING, SC&A\*  
ELIZABETH BRACKETT, ORAU Team\*  
ROBERT BURNS, ORAU Team\*  
STU HINNEFELD, DCAS  
JENNY LIN, HHS\*  
JOYCE LIPSZTEIN, SC&A\*  
STEVE MARSCHKE, SC&A  
JOHN MAURO, SC&A\*  
JIM NETON, DCAS\*  
STEVE OSTROW, SC&A\*  
MUTTY SHARFI, ORAU Team\*  
SCOTT SIEBERT, DCAS\*  
ELYSE THOMAS, ORAU Team\*  
WILLIAM THURBER, SC&A\*  
BRANT ULSH, DCAS

\*Participating via telephone

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

2 9:04 a.m.

3 MR. KATZ: Good morning, everyone  
4 in the room and on the phones. This is the  
5 Advisory Board on Radiation and Worker Health,  
6 the Procedures Subcommittee.

7 I'm Ted Katz. I'm the Designated  
8 Federal Official of the Advisory Board. We're  
9 going to begin with roll call, beginning with  
10 Board Members in the room, with the Chair.

11 CHAIR MUNN: Wanda Munn, Board  
12 Member and Chair of the Subcommittee on  
13 Procedure Reviews.

14 MEMBER LEMEN: Richard Lemen, Board  
15 Member.

16 MEMBER ZIEMER: Paul Ziemer, Board  
17 Member.

18 MR. KATZ: And do we have any Board  
19 Members on the line?

20 MEMBER GIBSON: Yes, Ted, this is  
21 Mike.

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1 MR. KATZ: Hi, Mike. You sound a  
2 little bit croaky.

3 MEMBER GIBSON: Yes, I'm under the  
4 weather.

5 MR. KATZ: Oh, I'm sorry.

6 CHAIR MUNN: Thank you for staying  
7 home.

8 MR. KATZ: I'm sorry. It sounds  
9 painful.

10 Very good. And NIOSH/ORAU team in  
11 the room?

12 MR. HINNEFELD: Stu Hinnefeld from  
13 DCAS.

14 DR. ULSH: Brant Ulsh from DCAS.

15 MR. KATZ: NIOSH/ORAU team on the  
16 line?

17 MS. THOMAS: Elyse Thomas, ORAU.

18 MR. SIEBERT: Scott Siebert, ORAU  
19 team.

20 MR. KATZ: Welcome, both of you.

21 SC&A team in the room?

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1 MR. MARSCHKE: Steve Marschke,

2 SC&A.

3 MR. KATZ: SC&A team on the line?

4 DR. MAURO: John Mauro, SC&A.

5 DR. OSTROW: Steve Ostrow, SC&A.

6 DR. H. BEHLING: Hans Behling,

7 SC&A.

8 MS. K. BEHLING: Kathy Behling,

9 SC&A.

10 MR. KATZ: Welcome all of you.

11 We do not have any federal  
12 officials or contractors with us in the room.

13 But how about on the line?

14 MS. LIN: This is Jenny with HHS.

15 MR. KATZ: Welcome, Jenny.

16 Any other feds or contractors to  
17 the feds?

18 (No response.)

19 Okay. And there are no members of  
20 the public in the room. Any members of the  
21 public on the line?

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1 MS. BARRIE: This is Terrie Barrie  
2 with ANWAG.

3 MR. KATZ: Welcome, Terrie.

4 MS. BARRIE: Good morning.

5 MR. KATZ: Good morning.

6 Very good. Wanda, it's your  
7 agenda.

8 Please let me just remind folks on  
9 the line to mute your phones. Use \*6 if you  
10 don't have a mute button and \*6 again to  
11 unmute your phone when you want to speak to  
12 the group. Thank you.

13 CHAIR MUNN: Does everyone here and  
14 on board with us have a copy of the agenda  
15 that I submitted? If anyone does not, please  
16 tell me so.

17 MR. KATZ: It should be posted as  
18 well on the website.

19 CHAIR MUNN: Then we will assume  
20 that this is your opportunity to let me know  
21 if there is any correction, addition,

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1 subtraction that needs to be made to that  
2 agenda, to the best of your knowledge. If  
3 not, we will follow that as we go through the  
4 day.

5 We want to remain flexible so that  
6 if we have the -- need some extra people on  
7 board, we'll try to accommodate any changes of  
8 that sort.

9 The only notification that I've had  
10 of any specific -- there has been a request  
11 for a fairly time-certain for the OTIB-70  
12 coverage, which we will take up right after  
13 lunch. If that's not satisfactory with  
14 everybody, I need to hear that now.

15 Otherwise, it looks like we're  
16 ready to go. Our first item on our agenda is  
17 the status report on where we are with the  
18 database.

19 We -- left this situation in  
20 October such that we were hoping that the  
21 folks who were working with the software, the

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1 database, were going to do several things for  
2 us. We had talked about adding one column to  
3 the display that we have, and we had talked  
4 about a couple of other items that would make  
5 it a little easier for the user to have access  
6 to the material that they wanted, but I have  
7 no knowledge of what has transpired in that  
8 two-month period. I am hoping that Steve  
9 Marschke has been in touch with all those  
10 folks and is going to tell us what has  
11 happened, what we can expect new with the  
12 database.

13 How are we doing, Steve?

14 MR. MARSCHKE: I'm not sure how  
15 we're doing, Wanda, to tell you the truth.  
16 Right after the last meeting in October, we  
17 got an email, I think from Tom, and he  
18 identified 10 items that they were going to  
19 work on updating. And I responded to that  
20 email myself with four additional items that I  
21 thought needed to be incorporated.

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1 I don't know if we want to go  
2 through these, but some of them have been  
3 incorporated; some of them have not been  
4 incorporated. Let's leave it at that. I  
5 don't think any of the issues that I was  
6 asking for have been incorporated.

7 CHAIR MUNN: Okay. So we don't  
8 have the added column yet for our comments.

9 MR. MARSCHKE: Right. I tried to -  
10 - you know, in preparation for the meeting, I  
11 don't use the database every day, but in  
12 preparation for the meeting I was trying to  
13 exercise the database, and I did run into some  
14 problems which, to some extent, put us further  
15 behind than we were in October.

16 CHAIR MUNN: Oh, dear. Before we  
17 go any further with that, I have a question.  
18 I was remiss in not paying attention to what  
19 we were doing when Ted was going through our  
20 who's here and who isn't list. Do we have any  
21 of our IT experts on line who can receive any

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1 of these information data points that we're  
2 about to discuss?

3 MR. HINNEFELD: No, we didn't have  
4 them, you know, we didn't tell them --

5 CHAIR MUNN: Oh, all right.

6 MR. HINNEFELD: You know, at some  
7 point, I can call them in. I can call them.  
8 You know, they'll be coming on cold. To me,  
9 I've always thought that we would be better  
10 served to have Steve and us and the TST folks  
11 get together and do this design --

12 CHAIR MUNN: Yes.

13 MR. HINNEFELD: -- and spend a  
14 couple of days doing that.

15 CHAIR MUNN: I had hoped that would  
16 occur.

17 MR. HINNEFELD: Well, we thought,  
18 in the interim between the last meeting and  
19 this, we thought that several of those things  
20 were getting done. As Steve told me, the  
21 number of things that were there in October

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1 are not there now, right?

2 MR. MARSCHKE: A couple of them,  
3 yes.

4 MR. HINNEFELD: Okay.

5 MR. MARSCHKE: A couple. When  
6 you're writing computer software, sometimes  
7 when you write in a new enhancement, you break  
8 things that were working before. And if you  
9 don't go through and actually test them  
10 thoroughly, you don't know that you've broken  
11 these things. And I think that's probably  
12 what has happened here in at least some of the  
13 instances or one of the instances.

14 The reason why I say we lost ground  
15 is primarily for two reasons. And if you  
16 want, I can go over those two reasons.

17 CHAIR MUNN: Well, let me ask this  
18 question. Since it seems pertinent to me that  
19 the folks who are actually going to be doing  
20 the changes to the software hear what our  
21 concerns are as we go through, is there any

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1 possibility that we could ask them to come on  
2 a little later this morning, and that we  
3 postpone this discussion until they do? We  
4 can move through some of the other items.

5 MR. HINNEFELD: Yes. Well, it  
6 would be probably easier if he were down here.

7 So let me see if Tom can come down.

8 CHAIR MUNN: What's the feeling of  
9 the rest of the group? I would very much  
10 personally like to have the folks who are on  
11 the ground doing the work on this available to  
12 us when we're carrying on this discussion.

13 MEMBER ZIEMER: Is it something we  
14 can actually do here, or do you actually need  
15 to do what Stu described and get together  
16 later? What can we do if they come down?

17 MR. HINNEFELD: What we can do, if  
18 they come here, is that we could run through  
19 some operability. We could show on various  
20 screens on the database what it is we want to  
21 accomplish. Now, apparently, we haven't

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1 installed everything that we had collected for  
2 October, which I didn't know. So, apparently,  
3 that's not done yet.

4 So, I mean, there are those things  
5 that could be done first or we can have them  
6 come down here, run through what we think, you  
7 know, showing them on the screen what we would  
8 like to see happen or what we would like to  
9 see various screens look like, and have them  
10 make those notes and go back and do it. We're  
11 still going to need that meeting.

12 CHAIR MUNN: Yes, you're still  
13 going to need the meeting. As I see it, we  
14 have three options. We can either do what I  
15 just suggested here or we can again postpone  
16 this with the assurance that those offsite  
17 meetings are going to occur and that we're  
18 going to have the primary parties sit down and  
19 work through our needs one by one. Or we can  
20 postpone this until our next face-to-face  
21 meeting and do this in meeting with all of us

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1 present.

2 Ted?

3 MR. KATZ: I mean I would suggest,  
4 I really don't think it's a good use of the  
5 full Work Group's time to be struggling with  
6 what's entirely really a technical matter  
7 because Steve certainly knows the  
8 functionality that's needed by the Work Group  
9 as well as anyone.

10 So, I mean, I would really think it  
11 would be a better use of resources for Steve  
12 to work with the people directly to get it  
13 done, whatever that takes, than to use  
14 Subcommittee time on, again, this technical  
15 matter. At this point, they have had plenty  
16 of feedback from the Subcommittee as a whole  
17 in terms of functionality, but Steve knows it  
18 all.

19 MR. MARSCHKE: I mean the thing is  
20 it's not a question of new functionality --  
21 functions that have to be added to the

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1 database. It's a question of we have given  
2 them a list of things that we need. Things  
3 that were there in October are no longer  
4 there. Things that were working in October  
5 are no longer working. It's basically a  
6 question of how do you implement and beta test  
7 this thing before it's released for use.

8 MR. KATZ: Right, and I appreciate  
9 that, Steve. I'm just saying you're the one  
10 who's finding all the problems because, for  
11 whatever reason, they're not getting to these  
12 problems; they're not realizing they have  
13 these problems, whatever. And I would just  
14 say you work with them and get it done.

15 I understand that they have been  
16 given instructions, and so on, but we're not  
17 getting there. And so much time is going by  
18 at this point. I think you just sit down and  
19 you get it done together.

20 CHAIR MUNN: I certainly agree with  
21 what you're saying, Ted. My concern is the

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1 forcing function to see that that happens  
2 because I thought our meeting last October had  
3 provided that forcing function. That's why I  
4 had the item on here to reassure us that the  
5 forcing function had been successful.  
6 Clearly, it hasn't been.

7 And so what I'm really groping for  
8 here is how can we assure that what we want to  
9 have happen is going to happen between now and  
10 the next time. Because, as Ted points out,  
11 we've been dealing with this now for many  
12 months. Many moons have passed. And we would  
13 really like to get this past the point where  
14 it's looking good but not finished yet.

15 MR. MARSCHKE: Well, if I were to  
16 suggest a path forward, I would suggest that  
17 NIOSH or the IT people basically go through  
18 and implement the laundry list of things that  
19 they have to do that is outstanding on the  
20 table now. And when they think they have it  
21 done, then I come down and beta test it, as

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1       opposed to coming down now and giving them  
2       another laundry list of things to do.

3                   And maybe I come down a week before  
4       the next scheduled Subcommittee meeting --

5                   MR. KATZ:   No, I would say get this  
6       done way before then.

7                   MR. HINNEFELD:   No, a week is not  
8       really enough.

9                   MR. KATZ:   That's what I mean.  You  
10       can speak with those folks.  You can make  
11       arrangements.  You can have a schedule for  
12       this.  But really we don't want to wait until  
13       the next Subcommittee meeting.

14                   DR. ULSH:   No.  Because, I mean, if  
15       you remember after the last meeting, we had a  
16       laundry list of things that were going to be  
17       accomplished, and, well, I mean those were  
18       rolled out in DCTA, but, apparently, in the  
19       process it broke some other things.

20                   I really think that what we need to  
21       do is get Steve in town as quickly as possible

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1 and do it real-time. You say, "Make this  
2 change." Tom will sit there and make the  
3 change. We'll go through it. We'll find  
4 other issues. We'll take care of those on the  
5 spot.

6 MR. KATZ: And that's fine.

7 MR. MARSCHKE: Okay. I can come  
8 down, you know -- I can't stay down this time,  
9 but I can come down next week or in the next  
10 couple of weeks sometime.

11 MR. KATZ: That sounds good.

12 CHAIR MUNN: Let's do establish a  
13 time-certain. Let's say that, by the 21st of  
14 this month, you will have met face-to-face  
15 with the folks who are the implementers and  
16 have spent a day working through what needs to  
17 be done. And if there is anything left over  
18 that they need to do to make it work the way  
19 we want it to work, that you will verify a  
20 week later that what we need has transpired.  
21 All right? Is that a reasonable thing?

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1 DR. ULSH: Steve, do you think two  
2 days would be appropriate?

3 MR. MARSCHKE: I have no idea.  
4 Because, basically, when I come down first, I  
5 am going to give you a laundry list of things  
6 to do, and then I don't know what I'm going to  
7 be doing until they attempt to implement those  
8 laundry lists of things.

9 MR. HINNEFELD: I think, really,  
10 let's you and me meet with TST tomorrow about  
11 it. I'm sending a note to Tom now saying we  
12 need to meet tomorrow. And we're going to go  
13 through the laundry list, and we're going to  
14 get from Tom what's been done on all that  
15 stuff and see.

16 And I don't know if he understood  
17 what was intended or not. You know, I don't  
18 know. Maybe that's part of the problem. So,  
19 maybe we can understand that more than he  
20 because we have been dealing with the  
21 database.

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1                   And so, we'll do that first.

2                   CHAIR MUNN: All right.

3                   MR. HINNEFELD: And then we'll see  
4 if Tom has any more of those things that he  
5 thinks are not done or not working.

6                   I also sent a note first to Tom  
7 because Steve said there was some stuff  
8 working in October that's not working today.  
9 I sent that to Tom when I got in this morning,  
10 that email to Tom this morning saying, "Hey,  
11 have you got any explanation for why these  
12 things aren't working?"

13                   But we'll meet with Tom tomorrow.  
14 And then after that meeting, we will know  
15 whether it makes sense to bring Steve down  
16 next week or to do some other work before we  
17 bring Steve down.

18                   CHAIR MUNN: Very simple, if you'll  
19 keep me apprised of how that's going? And for  
20 the time being, then, given that information,  
21 Steve, if you'll briefly run through where we

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1 are with it and what we're going to have to  
2 work with today then? We don't need the  
3 detail that I had hoped for originally  
4 because, clearly, we don't have the responses  
5 we really wanted.

6 MR. MARSCHKE: Well, one of the  
7 things we don't have the capability of, one of  
8 the capabilities that we lost was if you  
9 remember in the October version, we had an  
10 option up here on this line here to generate  
11 what was called an SC&A summary table. That  
12 has disappeared. So, right now, there's no  
13 way to get a tally as to how many issues are  
14 in the database, which ones are open, closed,  
15 in abeyance, or so on and so forth.

16 And so, I did not send out --  
17 usually I send out a bar chart before these  
18 meetings giving us the status. That was not  
19 sent out this time because there was no way to  
20 get that information out of the database. So  
21 that's one of the capabilities that was lost.

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1                   CHAIR MUNN: Yes, I discovered that  
2 last night when I was trying to check it  
3 myself.

4                   MR. MARSCHKE: The other thing  
5 which I -- the other reason why I think I say  
6 we have lost ground is -- well, this is one of  
7 the things that was implemented -- this is one  
8 of the positive things that was implemented.  
9 When you click on a document title, we asked  
10 them to change it so we go directly to the  
11 issue screen. And this is what now occurs.  
12 So that's one of the positive things.

13                   And this I can't test, but I don't  
14 want to test it because if I test it or  
15 demonstrate it, I might mess up the database.

16                   So I don't want to do that. But when you  
17 click on the Add Response, which you can see  
18 here is underlined indicating that it is a  
19 live feature. When you click on it, you get  
20 the little finger, hand with a finger,  
21 indicating that it's a live feature.

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1                   So you can click on that, add a  
2                   response to one of these issues. And then  
3                   when you come back and say, okay, I'm done  
4                   with that response, you come back to this  
5                   screen. The Add Response column, when you  
6                   come back, the Add Response column is no  
7                   longer live. In October, it was live. When  
8                   you added one response, you came back to this  
9                   screen; you were able to add additional  
10                  responses.

11                  When I tried to do this when I was  
12                  implementing the OTIB-70 SC&A responses, I  
13                  found that this was no longer a feature. So  
14                  what you did, you came to this screen the  
15                  second time, you had to go out, back to the  
16                  main screen, and then back in.

17                  CHAIR MUNN: No, no, we don't want  
18                  that.

19                  MR. MARSCHKE: And so, I mean, that  
20                  was the workaround.

21                  CHAIR MUNN: Yes.

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1                   MR. MARSCHKE:     So I don't know  
2                   what's going to happen when we try on the fly  
3                   to change status.

4                   CHAIR MUNN:    Let them do it.

5                   MR. MARSCHKE:     Well, adding  
6                   responses, that's why -- so those two features  
7                   are why I say we lost ground from October to  
8                   today.

9                   CHAIR MUNN:    Right.

10                  MR. MARSCHKE:    So that's it in a  
11                  nutshell. We still don't have the capability,  
12                  as far as I can tell, of making a PDF file or  
13                  a hard copy of any of this information. So  
14                  the way SC&A works anyway is we have a bunch  
15                  of scientists/engineers who are experts in  
16                  each one of these areas. They're not  
17                  necessarily experts in the database. So I  
18                  basically have the interface with the database  
19                  for everyone.

20                  So what I like to do is make a  
21                  file, send it to the experts. "This is the

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1 current status. What is your reply?" But  
2 without the capability of making a PDF file or  
3 a hard copy or something, I'm kind of stuck.

4 CHAIR MUNN: You can't do it.

5 MR. MARSCHKE: Well, what I have to  
6 do is, basically, manually do a  
7 block/copy/paste into a Word file and then  
8 send the Word file to them. So there is a  
9 workaround, but it's not very convenient.

10 CHAIR MUNN: It's the same  
11 situation we have when we actually transfer to  
12 another Work Group or another Subcommittee.

13 MR. MARSCHKE: Yes, you're going to  
14 have the same problem. You're not going to be  
15 able to make a PDF file.

16 CHAIR MUNN: Yes.

17 MR. MARSCHKE: And that's a feature  
18 that was lost from the Access database. In  
19 the Access database, we were able to do that;  
20 in this database we're not.

21 So those are some of the main

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1 problems that I'm having with it and when I  
2 try to use it.

3 CHAIR MUNN: Could we prevail upon  
4 you to at the close of this meeting put those  
5 specific items into a brief email and send  
6 them to Stu --

7 MR. MARSCHKE: Okay.

8 CHAIR MUNN: -- and Brant, so that  
9 they will be able to relay them to the folks  
10 that they're going to be talking to tomorrow?  
11 And they can be very clear about what we've  
12 got and what we don't have and --

13 MR. MARSCHKE: I can do that  
14 probably tomorrow morning when I get back to  
15 my office.

16 CHAIR MUNN: That would be great if  
17 you could. Okay. Thank you.

18 MR. KATZ: Let me just note I got  
19 an email; Mark Griffon is on the line, for the  
20 record. So he is now with the Subcommittee.

21 And, Dick, if you could pull away

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1 from the table some with the phone? Mark's  
2 having a hard time hearing because of your  
3 conversation with the tech folks.

4 CHAIR MUNN: Good morning, Mark.  
5 Welcome.

6 MEMBER GRIFFON: Good morning,  
7 everybody. Sorry I was late.

8 MR. KATZ: Welcome here.

9 CHAIR MUNN: That's quite all  
10 right. You get one forgiven.

11 Let's move on to PER-9 and PER-12  
12 discussion. As I understand it --

13 MEMBER LEMEN: I'm back.

14 CHAIR MUNN: Good. Thank you,  
15 Dick.

16 At our last meeting, we had asked  
17 that this item be moved up early in our  
18 deliberations today because we ran out of time  
19 last time, and we also did not have the SC&A  
20 folks available, the experts available, to  
21 address what we wanted to address. And we

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1 were going to have a specific discussion on  
2 the Hodgkin's/non-Hodgkin's lymphoma issues,  
3 and perhaps other things. I don't think we  
4 got much further than that in our discussions  
5 last time.

6 John, are you with us?

7 DR. MAURO: Yes, I'm here. And  
8 more importantly, Hans Behling is with us.

9 CHAIR MUNN: Very good.

10 DR. MAURO: Who did the work on the  
11 PER review.

12 But if I recall, when we last  
13 spoke, Dr. Lemen had some, what I would call,  
14 higher-level questions regarding there is the  
15 issue, of course, of the PER and our review of  
16 some of the issues related to that. But there  
17 were some other questions about designation of  
18 that particular cancer as a radiogenic cancer.

19 Am I recalling correctly? Was that something  
20 that we were about to talk about?

21 MEMBER LEMEN: That's correct.

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1 DR. MAURO: Yes, and I think that  
2 went more to NIOSH. Now, of course, we're  
3 prepared to talk about the PER work we did,  
4 but I do recall there was this higher-level  
5 question that Dr. Lemen raised.

6 MEMBER LEMEN: There was a couple  
7 of things that I had raised, but I thought for  
8 this discussion we do need the NIOSH people to  
9 start out first.

10 Before we do that, though, John,  
11 you all had made a report to the Board on  
12 that, correct?

13 DR. MAURO: Yes, we reported on the  
14 PER related to thoracic lymphoma.

15 MEMBER LEMEN: Right.

16 DR. MAURO: Yes, and it went into  
17 issues related to Hodgkin's and non-Hodgkin's,  
18 and how you go about doing the dose  
19 reconstruction, and the changes that were made  
20 to NIOSH's procedures for dealing with using a  
21 revised protocol. And Hans did a review of

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1 that work.

2 So, yes, we are engaged in matters  
3 related to thpse types of lymphomas, but I  
4 think that there was some question, which is  
5 why it is, in fact, listed as a radiogenic  
6 cancer. And this is not something I believe  
7 we can speak to. I'm not sure if Hans can,  
8 but it's not something we normally would look  
9 at.

10 MEMBER LEMEN: Well, once you did  
11 the report, and then it went back to NIOSH,  
12 NIOSH wrote another report saying that they  
13 strongly objected to your analysis, as I  
14 recall. Is that correct?

15 DR. MAURO: Okay.

16 MEMBER LEMEN: Is that correct?

17 DR. MAURO: Hans, why don't you --  
18 it sounds like we're going to get into our  
19 report first, and that's fine.

20 MEMBER LEMEN: I think we should  
21 get into the report first. But I think the

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1 sequence of events are that once your report  
2 was written, it went back to NIOSH. NIOSH  
3 objected to your report.

4 I guess the place we should start  
5 is with the NIOSH person.

6 DR. ULSH: That would probably be  
7 me. Just to briefly summarize from the  
8 beginning because we have gone over this a few  
9 times, this all started with some questions  
10 about the appropriate target organs that we  
11 assign when we're doing a dose reconstruction  
12 for lymphoma. And there are a lot of ways to  
13 cut and slice the box that is lymphomas. The  
14 biggest way, I guess, is between Hodgkin's  
15 lymphoma and non-Hodgkin's lymphoma.

16 And you're right, I mean, John,  
17 there are some questions, I guess, that some  
18 people have about the radiogenicity of  
19 lymphoma, but that's not really the issue that  
20 we were dealing with here. I mean we treat it  
21 as if it is a radiogenic cancer, and there's a

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1 risk model for lymphoma, both Hodgkin's and  
2 non-Hodgkin's lymphoma.

3 So it's not necessarily the  
4 radiogenicity that's the issue. It's where in  
5 the body does a lymphoma start? What organ  
6 should you calculate the radiation dose to  
7 when you do a dose reconstruction?

8 So we had an original procedure in  
9 place. I don't recall now exactly how the  
10 questions came about. I think it was some  
11 discussions, informal discussions that I had  
12 with some folks during a meeting in D.C.

13 But, anyway, we came back. We  
14 issued a TIB, a Technical Information  
15 Bulletin, on target organs. And basically, it  
16 treated Hodgkin's and non-Hodgkin's lymphoma  
17 differently. Non-Hodgkin's lymphoma are more  
18 of a systemic disease. They could originate  
19 anywhere in the body, and it's not clear  
20 where. So we picked the thoracic or  
21 extrathoracic lymph nodes because that is the

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1 most claimant-favorable choice. That results  
2 in the highest organ dose.

3 On the other hand, we did not treat  
4 Hodgkin's lymphoma that way. And this is a  
5 point of, I would say, disagreement between  
6 SC&A and NIOSH. The heart of that  
7 disagreement, I think, is that we treat  
8 Hodgkin's as a localized disease. It starts  
9 in a particular lymph node and spreads to  
10 adjacent lymph nodes.

11 And so we differentiated between  
12 that. We didn't pick the thoracic lymph nodes  
13 as a default. We picked whatever part of the  
14 body where the Hodgkin's lymphoma was  
15 detected.

16 So that, I think, is the heart of  
17 the issue. And there's been a lot of  
18 iterations back and forth between NIOSH and  
19 SC&A on this. I think, although others will  
20 have to help refresh my memory on this, I  
21 think it was agreed by everybody that -- I

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1 mean there were some questions about how these  
2 things were diagnosed, how lymphomas were  
3 diagnosed in the past, and whether people had  
4 the ability to differentiate different types  
5 of lymphomas.

6 And while there are some points of  
7 disagreement, I think everyone agreed that  
8 this was beyond NIOSH's purview. This is a  
9 DOL question in terms of assigning diagnoses  
10 and ICD codes, which we use when we figure out  
11 target organs.

12 So there was some question about, I  
13 think, whether the Board wanted to pick this  
14 up because what would be the outcome of it? I  
15 mean, even if everyone agreed, which we don't  
16 yet, there's really not much NIOSH can do.  
17 It's not in our purview to do that.

18 So that was one question that was  
19 on the table. So there was some debate about  
20 whether or not we should even be picking this  
21 up. But I think that that question might be

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1 the first one to be considered before we dive  
2 into the technical details. And both Hans and  
3 I are here. So, I mean, we could do that,  
4 if --

5 MEMBER LEMEN: This is Dick Lemen  
6 again. I would agree with that, and I think  
7 before we spend the time going into this in  
8 detail, we should make a decision about this.

9 What does Hans have to say about what we were  
10 just saying?

11 DR. H. BEHLING: Yes, this is Hans  
12 Behling, SC&A.

13 I think Brant sort of summarized  
14 the key issues here. But central to the  
15 concerns that I had was the fact that non-  
16 Hodgkin's lymphoma in the earlier days was  
17 really something that had traditionally been  
18 classified according to the morphology that's  
19 involved, a simple light microscope.

20 And up to perhaps the 1980  
21 timeframe, or thereabouts, that was the

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1 principal method by which non-Hodgkin's  
2 lymphoma was classified as a cancer.  
3 Obviously, since that time, there have been  
4 major, major changes in various areas.  
5 Obviously, key to those changes were  
6 immunological tests that involved monoclonal  
7 antibodies, also flow cytometry that now was  
8 able to, in very easy and definitive ways,  
9 define subgroups of lymphocytes that might be  
10 involved in understanding what cell types were  
11 involved in lymphoma. And obviously, those  
12 things were only available to oncologists and  
13 pathologists in more recent times.

14 So the concern that I had was that  
15 those people who might have been diagnosed  
16 with non-Hodgkin's lymphoma, especially non-  
17 Hodgkin's lymphoma in the early days, let's  
18 say prior to 1980, may have had a diagnosis  
19 that, by today's standards, would be  
20 questioned. And to what extent can we at this  
21 point go back and rectify those limitations or

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1 deficiencies in doing a dose reconstruction?

2 So that was really the central issue that I  
3 had.

4 MEMBER LEMEN: Okay. As I recall,  
5 that involved, NIOSH's count, some 4,000  
6 different -- didn't you, if you want back and  
7 redid dose reconstruction, wasn't there a  
8 large number that was involved in that, as I  
9 recall?

10 DR. ULSH: Well, this issue was  
11 housed in the context of a PER that we did.

12 MEMBER LEMEN: Yes.

13 DR. ULSH: A Program Evaluation  
14 Report.

15 MEMBER LEMEN: Right, I read that.

16 DR. ULSH: We changed the TIB.  
17 Then that changed, in some cases, which target  
18 organ needed to be applied. So when that  
19 happens, we issue a Program Evaluation Report.

20 MEMBER LEMEN: Right.

21 DR. ULSH: We go back and look at

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1 past dose reconstructions that we have done.  
2 I don't know off the top of my head, Dick, how  
3 many that involved.

4 MEMBER LEMEN: Well, be that as it  
5 may, if we're coming to -- what's your  
6 response to what Hans just said?

7 DR. ULSH: Well, are we going to  
8 go -- that's diving into the --

9 DR. H. BEHLING: I have to say,  
10 looking back at this point in time, I'm not  
11 sure we really can do anything about it  
12 because, obviously, the medical limitations  
13 that existed in that timeframe may or may not  
14 be something that we can do anything about.

15 As I said, the concern I have is  
16 that, when we talk about -- for instance, one  
17 of my nephews is an oncologist, and he is  
18 extremely familiar with flow cytometry  
19 measurements, which were only recently  
20 available, that allows a very definitive  
21 understanding of these very subsets of thymus-

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1 derived lymphocytes, bone-marrow-derived  
2 lymphocytes, natural killer cells. All these  
3 things that we today take for granted, these  
4 didn't exist years ago.

5 So the question is to what extent  
6 can we take a diagnostic measurement of a  
7 lymphoma that was done in the seventies or  
8 even early eighties and realize that that  
9 necessarily is the correct diagnosis?

10 CHAIR MUNN: And the technical  
11 issues notwithstanding, we in prior  
12 discussions of this, which have been  
13 extensive, came to the conclusion repeatedly  
14 that, in any case, it is the Department of  
15 Labor decision to make and outside our  
16 purview.

17 I guess my question at this  
18 juncture is whether there is any change to  
19 that previous consensus that we had that it  
20 was a Department of Labor issue and,  
21 regardless of what the technical question may

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1 present, we, nevertheless, can't answer it  
2 because it is a decision that the Department  
3 of Labor has to make.

4 MEMBER LEMEN: Well, if it's a  
5 decision the Department of Labor has to make,  
6 why don't we -- have we sent it back to the  
7 Department of Labor?

8 MR. MARSCHKE: Well, that was, I  
9 think, one of the questions, one of the things  
10 that we talked about at one of the previous  
11 meetings is do we want to send something back  
12 to the Department of Labor. And, then, if we  
13 decided that we did want to send something  
14 back to the Department of Labor, then we  
15 should have a unified position of what it is  
16 we're going to be sending back.

17 And then we would have to work out  
18 between NIOSH and SC&A, would have to decide,  
19 well, what is that unified position. As I  
20 recall, it was only if we were basically -- if  
21 we're going to keep it within NIOSH and the

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1 Subcommittee, then we're going to basically  
2 agree that it's beyond our scope of work, and  
3 there's nothing more for us to do with these  
4 two issues.

5 If, on the other hand, we want to  
6 inform the Department of Labor that this issue  
7 exists, then we have to come to some kind of  
8 an understanding and formulate really what  
9 that issue is.

10 MEMBER LEMEN: Well, it seems to me  
11 -- I'm sorry, Wanda.

12 CHAIR MUNN: Go ahead.

13 MEMBER LEMEN: It seems to me that  
14 -- this issue has been going on long before I  
15 came on the Board. But it appears that what  
16 really needs to be done now is to get SC&A and  
17 NIOSH together and formulate a position and  
18 send it back to the Department of Labor.

19 MR. HINNEFELD: I would like to  
20 offer something here. This is Stu Hinnefeld.

21 The SEC portion of the statute, of

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1 the law that Congress wrote, distinguishes  
2 between non-Hodgkin's and Hodgkin's.

3 MEMBER LEMEN: Right.

4 MR. HINNEFELD: It puts Hodgkin's  
5 out of the SEC Class. It puts non-Hodgkin's  
6 in.

7 MEMBER LEMEN: Right.

8 MR. HINNEFELD: So this program  
9 started with that delineation. There is,  
10 according to the founders of the law, there is  
11 Hodgkin's leukemia -- or Hodgkin's lymphoma  
12 and non-Hodgkin's lymphoma, and they're  
13 separate. And the designations of such are  
14 sufficiently fine for Congress to say one is  
15 in and one is out.

16 They didn't say Hodgkin's lymphoma  
17 before 1980 is in because of diagnosis  
18 questions. They just definitively said  
19 Hodgkin's is out; non-Hodgkin's in in.

20 I think NIOSH is not in a position  
21 and has really no interest in going to the

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1 Department of Labor and asking them to say,  
2 hey, do you want to make some sort of policy  
3 change about considering Hodgkin's disease  
4 diagnosed before some date based on these  
5 questions about the clarity of diagnosis, if,  
6 in fact, there is uniform agreement on that,  
7 when, in fact, Congress has already said, if  
8 it's Hodgkin's, it's out; if it's non-  
9 Hodgkin's, it's in. They've already decided  
10 essentially.

11 MEMBER LEMEN: But that was in  
12 nineteen -- in 2000 that they said that or  
13 1999.

14 MR. HINNEFELD: Yes, somewhere  
15 around there.

16 MEMBER LEMEN: Whenever they were  
17 doing that. And there's been some interest in  
18 changing.

19 Now Hodgkin's does not account for  
20 a lot of disease. I think there's 7,000 cases  
21 diagnosed in the U.S. every year, or something

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1 in that neighborhood.

2 MR. HINNEFELD: Yes.

3 MEMBER LEMEN: How many in  
4 Hodgkin's have even applied for compensation?

5 MR. HINNEFELD: Well, as far as  
6 claims that have a single diagnosis, I'm not  
7 sure if I can get that --

8 MEMBER LEMEN: We're not talking  
9 probably about a large number of people.

10 MR. HINNEFELD: It looks like, out  
11 of cancers that only have a single cancer --  
12 this doesn't include multiple cancers -- there  
13 are a little over 1100 lymphoma and multiple  
14 myeloma cancers.

15 MEMBER LEMEN: And how many of  
16 those came in -- did any come in as Hodgkin's?

17 MR. HINNEFELD: I don't have that  
18 distinction here. We would have to run a  
19 query to figure out which ones are Hodgkin's  
20 and non-Hodgkin's.

21 MEMBER LEMEN: Well, I guess the

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1 question is are there legitimate Hodgkin's  
2 cases that have not -- that have -- that would  
3 apply to being compensated since Congress made  
4 that distinct distinction back in 1999?

5 DR. ULSH: I can say with certainty  
6 that we have received cases where the cancer  
7 diagnosed is Hodgkin's disease.

8 MEMBER LEMEN: Right.

9 DR. ULSH: I can guarantee you  
10 that. And it's somewhere less than 1100.

11 MEMBER LEMEN: So you automatically  
12 just throw those out when you get them?

13 DR. ULSH: No, we don't throw them  
14 out.

15 MR. HINNEFELD: No, we do dose  
16 reconstruction.

17 DR. ULSH: We do a dose  
18 reconstruction. But if those people come from  
19 a site where there's an SEC enacted, they are  
20 not included in the SEC based on that  
21 Hodgkin's diagnosis. They come to us as a

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1 non-SEC case, and we do a dose reconstruction  
2 on it.

3 MEMBER LEMEN: And if you do a dose  
4 reconstruction and they qualify, do they get  
5 compensation?

6 DR. ULSH: Yes, they do.

7 MEMBER LEMEN: Even if they're a  
8 Hodgkin's?

9 DR. ULSH: Yes.

10 MEMBER LEMEN: Even though the  
11 Congress --

12 MR. HINNEFELD: Well, Congress only  
13 excluded it from the SEC Class.

14 MEMBER LEMEN: From the SEC Class?

15 MR. HINNEFELD: They didn't exclude  
16 it from the program. All the cancers --

17 MEMBER LEMEN: Yes.

18 MR. HINNEFELD: Every cancer except  
19 CLL is covered.

20 MEMBER LEMEN: So I guess the  
21 question is should we include it in the SEC?

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1 Is that what --

2 MR. HINNEFELD: Well, we don't have  
3 the authority to do that. That's absolutely a  
4 statutory question.

5 DR. ULSH: No, the question on the  
6 table --

7 MR. HINNEFELD: That's not a  
8 question for Department of Labor.

9 MEMBER LEMEN: Well, what is the  
10 question?

11 DR. ULSH: The question on the  
12 table is when we do a dose reconstruction for  
13 Hodgkin's lymphoma, what target organs should  
14 we calculate a radiation dose --

15 MR. HINNEFELD: Well, no, actually,  
16 the question on the table is is there a date  
17 before which we should, even though the  
18 diagnosis comes over as Hodgkin's, we should  
19 consider it a non-Hodgkin's? That's the only  
20 logical question.

21 And the Department of Labor would

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1 have to plan that. Because if they send us a  
2 Hodgkin's disease, they're going to expect a  
3 dose reconstruction for Hodgkin's disease.  
4 They're not going to expect a non-Hodgkin's.

5 CHAIR MUNN: It's difficult to see  
6 how anyone can identify a date after which  
7 diagnoses are more accurate than they were  
8 prior to that time. These things don't occur  
9 magically on September the 1st of 1983. You  
10 know, they occur over a period of time, and  
11 diagnoses that occurred during that transition  
12 time are going to be questionable, no matter  
13 what.

14 DR. ULSH: But I have to point out  
15 that there is disagreement between the NIOSH  
16 position and what Hans said earlier about this  
17 diagnosis issue. If you want to get into  
18 that, we can, but that's one of those  
19 technical issues.

20 MEMBER LEMEN: But is it something  
21 that we should get into if we can't make any

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1 changes?

2 CHAIR MUNN: Well, and it seems  
3 beyond our capacity to be able to do that in  
4 any case. We have a situation where the only  
5 real problem is whether or not this small  
6 group of individuals can be included in an  
7 SEC. And that's established by law. So  
8 that's not our purview.

9 MEMBER LEMEN: Well, you just said  
10 that -- Stu just said that can't be changed.

11 CHAIR MUNN: No, that can't be  
12 changed. That's true.

13 MR. HINNEFELD: -- we cannot change  
14 --

15 CHAIR MUNN: That's true, but these  
16 people are not excluded from being considered  
17 for compensation. They're just excluded from  
18 the SEC.

19 MEMBER LEMEN: So the question is,  
20 between SC&A and NIOSH, what is the target  
21 organ that you start with with the Hodgkin's,

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1 is that correct?

2 MR. HINNEFELD: Hodgkin's, the  
3 target organ for Hodgkin's is the region of  
4 the body --

5 MEMBER LEMEN: Yes, you have your  
6 opinion; SC&A has a different opinion. Is  
7 that correct?

8 DR. ULSH: I think that's correct.  
9 I would agree with that.

10 MR. HINNEFELD: The ultimate  
11 outcome, I believe, is different. I think the  
12 actual disagreement is on whether we should  
13 consider Hodgkin's a true -- that every  
14 Hodgkin's diagnosis is actually a Hodgkin's  
15 disease, or whether some of them should be  
16 non-Hodgkin's lymphoma. Now the target organs  
17 are different. So it comes down to that --

18 MEMBER LEMEN: It seems to me that  
19 we're confused on what we're trying to do.

20 MR. HINNEFELD: Well, I clearly am.

21 (Laughter.)

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1                   MR. KATZ:    You're clear, actually,  
2                   Stu, on what --

3                   MR. HINNEFELD:    I thought I knew  
4                   what we were trying to do.  We were trying to  
5                   decide whether --

6                   MEMBER LEMEN:    Well, you and Brant  
7                   are not on the same page.

8                   DR. ULSH:    No, we are.

9                   (Laughter.)

10                  MR. HINNEFELD:    What we're trying  
11                  to decide -- now it is a fact that a non-  
12                  Hodgkin's lymphoma has a different target  
13                  organ for dose reconstruction than Hodgkin's  
14                  disease.  The non-Hodgkin's lymphoma is far  
15                  more likely to produce a compensable outcome  
16                  than a Hodgkin's disease target organ.  That  
17                  is true.

18                  Okay.  So the ultimate outcome is  
19                  what is the target organ?  But that depends on  
20                  the decision of what's the diagnosis of the  
21                  cancer?  Unless someone has the opinion that a

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1 Hodgkin's disease that is truly a Hodgkin's  
2 disease, you know, a recently-diagnosed one,  
3 so we're confident it's Hodgkin's disease, is  
4 our target organ for that incorrect?

5 That would be a question that could  
6 be within the purview of this group. I don't  
7 have an opinion.

8 MR. KATZ: I mean there are a  
9 couple of options. One is to say we have too  
10 much work to do, and this is not our central  
11 work here, and to move on. Another option is  
12 to spend resources, or whatever, to try to get  
13 a unified perspective on this because it does  
14 affect how you do dose reconstructions.

15 And another is to send a missive to  
16 DOL that says, "Look, we've discussed this  
17 issue at the Board or Subcommittee level. We  
18 don't have any consensus here, but, DOL, you  
19 may want to look into this question," without  
20 giving them a recommendation for how to deal  
21 with it at all. And simply put it on their

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1 plate as, you know, this is something that  
2 came up here. It's really not our  
3 jurisdiction, but it does affect how we do our  
4 dose reconstructions and it may affect how  
5 claims come out, and you may want to look at  
6 it, and leave it at that.

7 MEMBER LEMEN: If you do that, what  
8 are you expecting DOL to do?

9 MR. KATZ: It's not my -- I mean, I  
10 don't know what DOL will do, but it's really,  
11 again --

12 MEMBER LEMEN: What can they do?

13 MR. KATZ: I mean, they have -- I'm  
14 not an expert on what discretion they have. I  
15 would guess they have discretion in how they  
16 deal with ascribing diagnoses to cases. So I  
17 think if they came to a firm conclusion about  
18 this, they could take some action one way or  
19 the other in terms of how they deal with the  
20 diagnoses that they send over to NIOSH, which  
21 NIOSH has to respond to by doing a dose

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1 reconstruction according to diagnosis.

2 MEMBER LEMEN: In other words, what  
3 they could do is change the diagnosis from  
4 Hodgkin's to non-Hodgkin's? Is that what  
5 you're saying?

6 MR. KATZ: Possibly. I don't know.

7 MR. HINNEFELD: Well, it would look  
8 that way to us, but we don't really know.  
9 Like Ted says, we don't know how much  
10 discretion they have.

11 MEMBER LEMEN: Well, it seems that  
12 we're kind of at an impasse.

13 MEMBER ZIEMER: Well, if the  
14 official certificate of death, I guess we're  
15 talking about, says it's one or the other, are  
16 they ever at liberty to change that?

17 MR. HINNEFELD: See, that's just  
18 it. I don't know that they are. If they have  
19 a medical diagnosis --

20 MEMBER ZIEMER: I mean, just on the  
21 basis of saying, well, we're not sure that

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1 doctors in those days knew what they were  
2 doing -- I don't want to put it that way --  
3 had the ability to distinguish; therefore,  
4 we're going to assume they're all one or the  
5 other --

6 MR. HINNEFELD: I don't know if  
7 they can or not.

8 MEMBER LEMEN: Do they accept --  
9 this is my question probably. What does DOL  
10 accept? Just a death certificate or do they  
11 accept pathology reports?

12 MR. HINNEFELD: Pathology reports  
13 are accepted.

14 MEMBER LEMEN: So they'll accept  
15 either/or?

16 MR. HINNEFELD: Yes. Well, yes, I  
17 know they get pathology because --

18 MEMBER LEMEN: The death  
19 certificate is notoriously usually inaccurate.

20 MR. HINNEFELD: Yes, the death  
21 certificate is not usually --

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1                   MEMBER    ZIEMER:        But   that's   a  
2   starting   point.        I   mean,   if   there   were  
3   pathology   in   the   record   that   contradicted   the  
4   report,   I'm   sure   they   would   use   that.    But,  
5   otherwise,   it's   hard   for   me   to   imagine   that,  
6   number   one,   that   they   are   going   to   go   back   on  
7   these   early   ones   and   change   them.

8                   MEMBER    LEMEN:        Well,   maybe   I'm  
9   being   naive,   but   it   seems   to   me   if   DOL   has   the  
10   ultimate   say,   if   they   send   something   to   us   and  
11   it   says   it's   a   Hodgkin's,   then   NIOSH   really  
12   has   only   the   choice   of   treating   it   as   a  
13   Hodgkin's,   is   that   correct?

14                   MR.   HINNEFELD:    That's   the   way   we  
15   behave.   Yes.

16                   MEMBER    LEMEN:        And   therefore,   even  
17   if   we   come   about   and   come   to   a   decision,   it  
18   ultimately   has   to   go   back   to   DOL   to   make   the  
19   decision   as   to   whether   or   not   they're   going   to  
20   change   the   way   they   treat   this.

21                   So   it   seems   to   me   at   this   point

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1       what the Board should do or the Subcommittee  
2       should do is ask NIOSH and SC&A to get  
3       together one more time and come up with some  
4       type of a letter that we send to DOL telling  
5       them what the dilemma is.

6                     DR. ULSH:   What would you like that  
7       letter to contain?   Because --

8                     MEMBER LEMEN:   Well, that's what I  
9       don't know.   I mean that is something that  
10      SC&A and you have to come to a --

11                    MEMBER ZIEMER:   Well, I guess I'm  
12      wondering if there really is a dilemma.   I  
13      think the last statement Hans made was,  
14      although recognizing the new diagnostic  
15      measures, I think, Hans, you said you didn't  
16      see how we could do anything about it on the  
17      early cases?

18                    DR. H. BEHLING:   Yes, let me just  
19      comment again here.   It's basically an  
20      assumption that has been made that the Reed-  
21      Sternberg cell, which defines, obviously,

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1 Hodgkin's lymphoma, is so unique and so  
2 characteristic of the Hodgkin's lymphoma that  
3 it stands out among all the other non-  
4 Hodgkin's lymphomas, which are much more  
5 heterogenous in terms of their morphology and  
6 cytochemical characteristics, et cetera, et  
7 cetera.

8 On the other hand, for instance,  
9 among the different groups of non-Hodgkin's  
10 lymphoma, you have lymphocytic well-  
11 differentiated type; you have the lymphocytic  
12 poorly-differentiated type, the histiocytic,  
13 and even the mixed histiocytic-lymphocytic  
14 type. So you have this very, very  
15 heterogenous population of cells that all give  
16 rise to non-Hodgkin's lymphoma.

17 And I'm reading from my 1979  
18 pathology textbook which states that, "In  
19 certain instances, cells may be multinucleates  
20 and difficult to distinguish from Reed-  
21 Sternberg cells." This was 1979, and I can

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1       only conclude that in those days it was truly  
2       the light microscope which provided the  
3       principal means by which these diagnostic  
4       differentiations were made between Hodgkin's  
5       and non-Hodgkin's. And this is what triggered  
6       this whole thing.

7                        To what extent we can go back and  
8       rectify that limitation may be beyond our  
9       ability, and maybe we just have to realize, as  
10      has already been mentioned, that we have to  
11      live with the diagnosis as it stands. Whether  
12      it's right or wrong, we may not be in a  
13      position to do anything about it.

14                   MEMBER LEMEN:       How did this  
15      originate? I mean this originated before I  
16      came on the Board, but --

17                   MR. HINNEFELD:       The finding  
18      originated in SC&A's review of our Program  
19      Evaluation Report. Well --

20                   DR. ULSH:    Before that.

21                   MR. HINNEFELD:   Well, that's how it

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1 got to this group, this Work Group.

2 DR. ULSH: Right.

3 MR. HINNEFELD: The question of,  
4 well, the dose, the target organ, what's the  
5 correct target, that came up earlier.

6 What were you going to say? What  
7 came up?

8 DR. ULSH: Yes, it started with our  
9 TIB where we went back and changed the target  
10 organs and how we treat hematopoietic  
11 diseases, non-Hodgkin's and Hodgkin's disease.

12 I think our review also looked at leukemia,  
13 but that's not an issue of contention here.

14 Then, I think, well, we did a PER  
15 on that to implement that TIB. And I think  
16 the way it got here was S&CA was tasked to  
17 review that PER.

18 MR. HINNEFELD: Yes.

19 DR. ULSH: And in that review, they  
20 raised the questions that we're discussing  
21 now. So that's the history.

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1                   MEMBER LEMEN:     Let me ask you  
2     another question, and it's totally different  
3     than this. But that is does the legislation  
4     allow for changes in the ICD-9 coding to when  
5     ICD becomes antiquated and we've now gone into  
6     the ICD-10, is there a way that the  
7     legislation updates that or does that take a  
8     Congressional --

9                   MR. HINNEFELD:     I think it  
10    specified 9.

11                  MEMBER LEMEN:     It specified 9. I  
12    know that, but does that have any -- because  
13    the ICD-10 treats this completely differently.  
14    And if we went by ICD-10, we wouldn't have  
15    this issue.

16                  MR. HINNEFELD:     Okay. I believe  
17    that we could get an opinion on that, but, I  
18    mean, that will be, actually, a Department of  
19    Labor function to switch from 9 to 10 because  
20    they make the diagnoses.

21                  MEMBER LEMEN:     Maybe that's what we

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1 should be asking because ICD-10 has now been  
2 in effect for almost --

3 MR. HINNEFELD: Yes, it's not new.

4 MEMBER LEMEN: -- 10 years at  
5 least. And we're dealing with a  
6 classification system that's 20-30 years  
7 old --

8 MR. HINNEFELD: Yes.

9 MEMBER LEMEN: -- as compared to  
10 the new one, which does treat the lymphomas  
11 differently than did the 9 system. So maybe  
12 that's the question we should be looking at.

13 MR. HINNEFELD: Well, after I  
14 consult with our OGC, I could find out if it  
15 would be a reason -- if there would be a way  
16 to right that. Our OGC might tell me don't  
17 bother because the statute says this in this  
18 way, and therefore, ICD-9 code is what the  
19 statute requires.

20 MEMBER LEMEN: Well, I think that's  
21 what the OGC is going to say, quite frankly.

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1 I don't see that they're going to want to  
2 change.

3 MR. HINNEFELD: Well, I know they  
4 won't want to change, but the question is, I  
5 mean, does the statute provide the leeway for  
6 it?

7 I mean, for instance, in the  
8 statute it says that Probability of Causation  
9 should be calculated by the tables, the  
10 Probability of Causation tables from the  
11 Orphan Drug Act as those may be updated.  
12 Okay?

13 If it said anything like that about  
14 ICD-9 codes, I would assume that that would  
15 happen as well. And I suppose that it didn't  
16 --

17 MEMBER LEMEN: I guess I don't see  
18 the Board spending any amount of time on this  
19 because I think we've -- I don't see why we're  
20 wasting more time on it. The question is what  
21 should we do to close it out?

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1                   CHAIR MUNN:     Well, we have been  
2     told repeatedly that the diagnoses are the  
3     purview of the Department of Labor and that  
4     they have made every effort to obtain all the  
5     medical records that they can for each of the  
6     claimants.

7                   So anything that comes to NIOSH for  
8     dose reconstruction has been, we are assured,  
9     thoroughly vetted by the Department of Labor.

10                  It is difficult to see how we could provide  
11     any useful information that DOL isn't already  
12     aware of with respect to the content of the  
13     law and what they're instructed to use or not  
14     to use.

15                  MEMBER LEMEN:   Then should we make  
16     a motion to close this out of the Board?

17                  CHAIR MUNN:   At least in the record  
18     that I have, we have these two items closed  
19     out.

20                  MR. MARSCHKE:   If you look back in  
21     April of 2008, I think we say that SC&A agrees

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1 that the issue should be closed. So as far as  
2 basically anything to do with NIOSH or the  
3 Board or the Subcommittee, I think we have  
4 agreed that there's nothing really that we can  
5 do, and we should close these issues.

6 And, again, the question became  
7 was, you know, the second part of this thing  
8 was do we want to bring something up to the  
9 Department of Labor? And from what I'm  
10 hearing today is probably not.

11 MEMBER LEMEN: Right, I think we  
12 should close this part out, but I would like  
13 to suggest and ask NIOSH to go to the OGC and  
14 find out about this issue of ICD-9 versus  
15 ICD-10.

16 CHAIR MUNN: Is it --

17 MEMBER ZIEMER: Well, I have a  
18 question. I would think, and maybe we can  
19 find this out, that going from 9 to 10  
20 probably affects more than this also.

21 MEMBER LEMEN: Oh, yes, it will.

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1                   MEMBER ZIEMER:    So it's a broader  
2                   question for the Department of Labor.

3                   MEMBER LEMEN:       It is a broader  
4                   question.

5                   MEMBER ZIEMER:    And certainly in  
6                   terms of what they do, that's got to be  
7                   something that's already on their plate. I  
8                   think that because Jeff Kotsch and others  
9                   attend our meetings regularly, they're  
10                  actually aware of this issue from the past, I  
11                  believe --

12                  CHAIR MUNN:    Yes, I think Jeff --

13                  MEMBER ZIEMER:    -- from discussions  
14                  in the full Board meeting.

15                  And the other point I'll make is  
16                  that, in the past, we have been somewhat  
17                  hesitant to go to Labor with issues sort of  
18                  giving the impression that we are trying to  
19                  establish their agenda in some way. It's a  
20                  little bit of the push between agencies, I  
21                  suppose.

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1                   But there have been several  
2 occasions where we have, where we felt --  
3 we're not demanding that they do something.  
4 We're just calling their attention to an issue  
5 that has raised concerns for us.

6                   MEMBER LEMEN: Well, I'm not asking  
7 that we demand them.

8                   MEMBER ZIEMER: No, no.

9                   MEMBER LEMEN: I'm simply saying  
10 that --

11                   MEMBER ZIEMER: But even going to  
12 them, in the past we have been somewhat  
13 hesitant unless it's such a big issue that we  
14 feel that they --

15                   MEMBER LEMEN: Well, I think the  
16 ICD-10 is a big enough issue that the Board  
17 ought to be on record of saying, "You ought to  
18 at least consider this."

19                   CHAIR MUNN: Well, you know, we  
20 have an opportunity to do that at open Board  
21 meetings when Jeff gives his report or when

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1 Labor gives their report. They always leave a  
2 question period open for us, and it's been my  
3 impression that they're wide open to any  
4 suggestion that we want to make or any  
5 question that we want to ask at that time. Is  
6 this a legitimate question that we need to ask  
7 at the Board meeting?

8 MR. KATZ: And given that there's  
9 no single view on this and that it has lots of  
10 wrinkles, I mean that might be a good venue.  
11 Certainly every Board meeting you can do that.

12 MEMBER LEMEN: That's fine with me.

13 MR. KATZ: And you can point to the  
14 record that this Subcommittee has had  
15 discussions about this. You can point to this  
16 record for this Subcommittee. We have a  
17 transcript, and they can avail themselves of  
18 it and see exactly what we discussed, what the  
19 wrinkles are.

20 MEMBER LEMEN: I'm not particularly  
21 expecting anything to change because when

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1 something gets put in concrete in legislation,  
2 it's very hard to change it. But I am feeling  
3 that NIOSH, since we're aware of this change  
4 in the ICD codes, and even, like Paul said, if  
5 they've heard it, we ought to at least go on  
6 record in a meeting where we bring it up and  
7 talk about it a little bit. That's my  
8 opinion.

9 CHAIR MUNN: Is that the general  
10 consensus of the Subcommittee? Do we hear  
11 anything from Mark or Mike?

12 (No response.)

13 I'm not hearing anything. If there  
14 is no disagreement in that regard, Dick, would  
15 you like to be the person who asks the  
16 question or would you prefer --

17 MEMBER LEMEN: I don't mind asking  
18 the question. I think there are other Members  
19 of the Board that are probably better  
20 qualified than me to ask the question, but  
21 I'll get together with a couple of other Board

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1 Members, and we'll decide how it's handled at  
2 the Board meeting.

3 DR. H. BEHLING: This is Hans  
4 Behling. Can I just make a comment?

5 I believe from what was already  
6 stated, the issue may be one that we simply  
7 will not be able to resolve because it's  
8 pretty much in the same area of the other  
9 issue that I raised in my review of the PER,  
10 and that is the role of smoking. And we all  
11 concluded that when you do smoke, for  
12 instance, the lung clearance rate by alveolar  
13 macrophages will probably be handicapped and,  
14 to a large extent, may modify the whole issue  
15 of radioactivity that is in the deep lung  
16 transferred to regional lymph nodes. It is an  
17 issue that is too technical for us to even  
18 address.

19 I think we all agreed that it might  
20 have a significant impact, but it is beyond  
21 the purview of the Board or NIOSH to even

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1 address the issue. So this may be just in the  
2 same area as the issue of smoking and the role  
3 of smoking in terms of lymphoma induction.

4 CHAIR MUNN: I will work on the  
5 assumption, unless I hear otherwise, that Dr.  
6 Lemen is going to ask the question during the  
7 question-and-answer portion of our next full  
8 Board meeting when Labor gives their report to  
9 us. Just point out that this question has  
10 been raised in our Subcommittee and we have no  
11 -- our action is closed, but we wondered  
12 whether Labor had this concern, the same that  
13 we have, with respect to the change from 9 to  
14 10.

15 MEMBER LEMEN: That's fine with me,  
16 but do we need to make, since it appears that  
17 the other issue we started talking about is  
18 already closed out, do we need to make any  
19 formal closeout of that in this Subcommittee?  
20 Or can we just let that lay at rest and go  
21 forward with our next agenda item?

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1                   MR. MARSCHKE: Well, PER-9, one of  
2                   the problems I'm having with the database is I  
3                   don't know how to enter new documents. And  
4                   PER-9 is one of the new documents. It wasn't  
5                   in the old Access database. So it didn't get  
6                   carried over. So I don't know how to enter  
7                   PER-9 into the new database.

8                   If it was in the new database, I  
9                   would just do a change status on it and close  
10                  it today, right now. But since it's not in  
11                  the database, I can't do that.

12                  But I think what I'll do is when I  
13                  learn the capabilities of adding new  
14                  documents, I'll add PER-9, add these two  
15                  issues in, and identify that -- I don't know  
16                  -- at some meeting, whether we go back to,  
17                  whether we specify today's meeting or if we go  
18                  back to April of 2008, and identify that it  
19                  was closed at one of these meetings, but, in  
20                  any regard, both these issues, as far as the  
21                  database is concerned, I would assume have a

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1 closed status on them.

2 CHAIR MUNN: I agree, and I would  
3 suggest that the original date be the one that  
4 is attached to the entry. And by the way,  
5 that's one of the things that we had lost that  
6 we asked to be put back on again, is that  
7 original date, so that we had these in groups  
8 as we have had handled them in the past.

9 And once PER-9 is on the database,  
10 then a note summarizing our discussion here  
11 today with today's date on it would seem to me  
12 to be appropriate.

13 MR. MARSCHKE: Pardon me, Wanda?

14 CHAIR MUNN: Just a note that the  
15 Subcommittee discussed these issues today --

16 MR. MARSCHKE: Continued to discuss  
17 the details --

18 CHAIR MUNN: -- and the conclusion  
19 was reached that we would simply, in a Board  
20 meeting, ask the Department of Labor whether -  
21 - advise the Department of Labor that we

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1 discussed it at length and were concerned  
2 about the changes in process that had occurred  
3 in diagnoses over the last decade, whether  
4 that is on their plate as well.

5 MEMBER LEMEN: That's fine with me.

6 CHAIR MUNN: Any other comments or  
7 questions about PER-9?

8 (No response.)

9 I have been carrying PER-12 on my  
10 list of open items for a number of months  
11 without any information. I have not gone back  
12 in the transcripts to try to identify exactly  
13 what this issue was.

14 Hans, do you recall why we were  
15 continuing to carry PER-12? I had thought  
16 that --

17 DR. H. BEHLING: Well, actually, my  
18 feeling was that we really had no significant  
19 findings regarding PER-12, mainly because the  
20 OTIB-49, which really forms the basis for it,  
21 has been reviewed previously. And I think we

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1 pretty much resolved most of the issues there.

2 The only outstanding issue that at  
3 this point we're facing is the selection of  
4 potential cases that have been reconstructed  
5 under PER-12 for a new audit. I think what we  
6 have yet to do, and I think this belongs to  
7 NIOSH, is to identify the universe from which  
8 we choose these 10 cases. I had identified in  
9 Section 5 of my report the various groupings  
10 of cases that we might want to review if there  
11 has been reconstruction of doses for them.  
12 And they involved -- it is based on the target  
13 organ and, also, the methodology that was used  
14 to do the original dose reconstruction,  
15 whether it was done by urinalysis, lung  
16 counts, fecal samples, or air samples.

17 So we identified a total of 10  
18 different methods by which a revised dose  
19 reconstruction would take place and,  
20 therefore, identified a minimum of perhaps 10  
21 cases that we might want to audit to see if

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1 the PER-12 has been implemented in accordance  
2 with the guidance as stated in the PER.

3 MR. KATZ: Yes, Hans, this is Ted.  
4 That's the agenda item for the next Dose  
5 Reconstruction Subcommittee meeting, to make  
6 that selection. So DCAS will be serving up  
7 candidate cases for that for the next Dose  
8 Reconstruction Subcommittee meeting. That's  
9 where that will be done.

10 DR. H. BEHLING: As far as I'm  
11 concerned, we're pretty much finished with  
12 PER-12.

13 CHAIR MUNN: I think what you just  
14 said is tangentially related to the reason I  
15 thought that we were carrying it, which was  
16 based on the statement that Steve just made a  
17 little bit ago. I think we had had a  
18 discussion about how we were going to place  
19 the PERs into our database and how we were  
20 going to track them.

21 At the time that we originated this

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1 discussion, PER-9 and PER-12 were the two that  
2 had been done. And the question was whether  
3 they were going to be tracked here or not.  
4 But that, obviously, has not come to fruition  
5 yet. We still don't know that, but it's one  
6 of the things that will arise naturally, I  
7 think, out of our discussion about how to add.

8 MR. KATZ: Right. So, Wanda, 12  
9 would be tracked because after the Dose  
10 Reconstruction Committee does its -- after  
11 SC&A does its review of the cases, and so on,  
12 they'll come back to here --

13 CHAIR MUNN: Yes, yes.

14 MR. KATZ: -- after they have  
15 results from that review.

16 CHAIR MUNN: Yes.

17 MR. KATZ: So that's why it would  
18 be tracked, and that's why it makes sense to  
19 put it in there as an item for tracking.

20 CHAIR MUNN: Very good. Is there  
21 anything else we need to talk about with 9 and

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1 12, with the two PERs?

2 (No response.)

3 If not, then we are ahead of our  
4 time, thank goodness. We need to be ahead of  
5 our time.

6 Before we take a break, does anyone  
7 have any problem with our moving on to the  
8 next item, which is OTIB-49-1 and 2, the tech  
9 talk about retained plutonium? Did that ever  
10 occur? This is the third time we have had  
11 this supposed technical discussion that is  
12 supposed to take place offline.

13 MR. HINNEFELD: Well, I think it  
14 relies on Joyce Lipsztein.

15 CHAIR MUNN: What's the story with  
16 Joyce, John? Is she back on board or she is  
17 still unavailable to us?

18 DR. MAURO: She is. I did email  
19 her and asked if she could join us this  
20 afternoon to cover a number of these issues.  
21 This is one of them. But I haven't heard back

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1 from her. So I will be checking my emails as  
2 the day progresses here and see if, in fact,  
3 she's going to be able to join us.

4 MR. MARSCHKE: I think she's  
5 planning on joining us. I got an email from  
6 her asking about Report 44.

7 DR. MAURO: Right.

8 MR. MARSCHKE: She wanted to get a  
9 copy of the document. So she may be planning  
10 on joining us around 3:30 --

11 DR. MAURO: Okay.

12 MR. MARSCHKE: -- when that is  
13 scheduled to be discussed.

14 CHAIR MUNN: All right. Then we  
15 will, for the moment, defer OTIB-49 until we  
16 have an opportunity to have Dr. Lipsztein on  
17 board.

18 DR. MAURO: Very good.

19 CHAIR MUNN: That brings us to  
20 OTIB-54 and SC&A's reply to NIOSH responses.  
21 John, do you have the lead on that?

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1 DR. MAURO: Yes. Well, Steve, I  
2 think you prepared something on all the --

3 MR. MARSCHKE: Steve Ostrow is  
4 actually the --

5 DR. MAURO: A number of them have  
6 been resolved, and we have recommendations for  
7 closing. I don't have those. I'm not on my  
8 computer right now.

9 Steve, I read through that package  
10 that you sent through, and it looks like most  
11 of the items are closed, but there are a  
12 couple that are in progress.

13 CHAIR MUNN: That was sent out on  
14 the 20th of October. Does everyone have that  
15 Procedures Subcommittee document, email  
16 document from -- that Steve Marschke sent out  
17 to us with respect to OTIB-49?

18 DR. MAURO: Fifty-four.

19 CHAIR MUNN: Oh, pardon me. Pardon  
20 me.

21 MEMBER ZIEMER: When was that sent

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1 out?

2 MR. MARSCHKE: I sent out -- well,  
3 I don't know where Wanda's --

4 CHAIR MUNN: Oh, I'm looking at the  
5 one that came out on 49. I'm sorry. I'm  
6 confusing the issue.

7 MR. MARSCHKE: Yesterday, before I  
8 left, I sent an email that had, I think, six  
9 attachments to it.

10 CHAIR MUNN: Oh, yes.

11 MR. MARSCHKE: And included in one  
12 of those six attachments was a document called  
13 "OTIB-54 SC&A Reply," a Word document. This  
14 was put together by Steve Ostrow, who I think  
15 is on the phone.

16 DR. OSTROW: I'm here.

17 MR. MARSCHKE: And this, basically,  
18 is Steve's reply. So responses to the NIOSH  
19 initial responses. I put it up on the screen  
20 for those of you who are in the room here.

21 And, Steve Ostrow, if you want to

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1 walk through here -- I don't want to steal  
2 your thunder, but it looks to me, at least,  
3 the first five that are up on the screen now,  
4 we agree with the NIOSH responses, and we are  
5 recommending that the first five issues be  
6 closed.

7 DR. OSTROW: That's correct.

8 MR. MARSCHKE: Issues 6 and 7, we  
9 also -- does anybody want to read through or  
10 talk about any of the specific first five  
11 issues or --

12 CHAIR MUNN: In view of the fact  
13 that we only had these responses last night,  
14 and I, frankly, glanced at them, but did not  
15 read them, I mean my real question here is  
16 whether our NIOSH folks have had an  
17 opportunity to look at them, and if they're  
18 okay with any of it.

19 MR. MARSCHKE: Well, NIOSH is  
20 basically -- we're just -- for the first seven  
21 -- we're just agreeing with NIOSH.

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1 CHAIR MUNN: You're saying, "Yes,  
2 yes, yes" to the first five.

3 MR. MARSCHKE: Yes, the first five.

4 DR. MAURO: This is John. Let me  
5 point out that you'll notice that not only do  
6 we recommend closing, but we also have our  
7 rationale. There's a brief paragraph next to  
8 each item with the rationale that we reviewed  
9 it and, in general, the reasons why we agree.  
10 This way, it's all on the record.

11 So, you know, I think what I say is  
12 we're recommending. Now if you want to hear a  
13 little bit more about the rationale, why we  
14 agree -- in other words, what happened was  
15 NIOSH responded to our concern, provided some  
16 detail on why they consider the approach that  
17 they did use appropriate, and we reviewed it,  
18 and we found favorably in their response.  
19 That's sort of all laid out in the matrix  
20 table that's before you all.

21 So I guess we can go through the

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1 individual items if you would like. See,  
2 really, we're at a point now where we're  
3 making a recommendation to the Subcommittee,  
4 and it's really now a matter for the  
5 Subcommittee to accept that recommendation.  
6 And once that's done, of course, Steve could  
7 make the change in the matrix, the system, to  
8 close the item.

9 But I don't think they're closed  
10 now. Is that right, Steve? We're waiting --

11 MR. MARSCHKE: I'm not sure what  
12 the status is, whether it's open or in  
13 progress. It's probably either one of those  
14 two.

15 But, again, just looking at the  
16 data, looking at Steve's file here, the first  
17 13 of them are either -- we are recommending  
18 either we close the issue or we change the  
19 status -- we accept the issue and change the  
20 status to in abeyance.

21 DR. OSTROW: That's correct.

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1                   MEMBER ZIEMER:   Are we on 0054?

2                   MR. KATZ:    Yes.

3                   MEMBER GRIFFON:    Wanda, this is  
4                   Mark Griffon.

5                   CHAIR MUNN:   Yes, Mark.

6                   MEMBER GRIFFON:    I want to say one  
7                   thing. I'm very happy to see a matrix for  
8                   this response. But John just said SC&A's  
9                   rationale is in here, and on most of these  
10                  first five, anyway, I just see accepted or  
11                  closed. I don't see SC&A's rationale. Am I  
12                  missing something?

13                  CHAIR MUNN:   Well, of course, they  
14                  had a rationale. Their original comment was  
15                  their concern.

16                  MEMBER GRIFFON:    Yes, and then the  
17                  NIOSH response.

18                  CHAIR MUNN:    NIOSH responded to it.

19                  DR. MAURO:     Oh, okay. You're  
20                  right, Mark.

21                  MEMBER ZIEMER:    -- down there are

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1       some --

2                   CHAIR MUNN:   Yes.

3                   MEMBER ZIEMER:   Yes, I see them  
4       now.

5                   DR. MAURO:   Yes, but I think that  
6       it is a matter of saying, okay, here was  
7       SC&A's original concern.  Then there is some  
8       detail there regarding NIOSH's explanation,  
9       why they feel it's appropriate.  Now, in some  
10      cases, it's self-evident.  I mean, when you  
11      read that, you can see they did address each  
12      of our questions item by item.

13                  MEMBER GRIFFON:   Okay.  And you're  
14      accepting NIOSH's response.

15                  DR. MAURO:   And we accept their  
16      explanation.

17                  MEMBER GRIFFON:   Okay.

18                  DR. MAURO:   But, in other cases, I  
19      think as pointed out just now, there are  
20      places where we explored that a little further  
21      and we talk a little bit more.  So, I mean,

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1 you could follow it and decide for yourself if  
2 you feel there's sufficient information on the  
3 record to recommend closing.

4 MEMBER GRIFFON: Okay. Thanks.

5 MR. MARSCHKE: I think some of the  
6 comments, also, Mark, were not really issues,  
7 but they were raising a good point, making a  
8 point that we agreed with what was in the  
9 OTIB. Like, if you look at comment number  
10 two, three, and four, I think, more or less,  
11 we agree with what's in the OTIB and we agree  
12 with NIOSH, and so on and so forth. And NIOSH  
13 comes back and says no response needed. So  
14 when we have no response needed from NIOSH, we  
15 have, obviously, no rationale.

16 CHAIR MUNN: And we did discuss  
17 these at considerable length when we had the  
18 NIOSH responses. So from my perspective,  
19 anything that is accepted, then, by SC&A can  
20 be closed or moved to in abeyance as shown.  
21 Any additional comment from SC&A, I would like

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1 for us to spend some time on, unless someone  
2 has feelings to the contrary.

3 If not, then it looks like we're at  
4 14?

5 MEMBER LEMEN: That's the first  
6 one, it looks like to me.

7 CHAIR MUNN: Do you want to read  
8 that to us, Steve?

9 MR. MARSCHKE: The issue is reactor  
10 source term. "SC&A questions averaging the  
11 source term over the four reactor types to  
12 produce the default source term in Table E-1  
13 since it is expected that in most cases the  
14 dose reconstructor would know which type of  
15 reactor or reactor fuel produced the  
16 claimant's exposure."

17 CHAIR MUNN: You will recall we  
18 discussed this at considerable length in  
19 October.

20 Yes, go ahead, Steve.

21 MR. MARSCHKE: The NIOSH response

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1 is, "The data in Table E-1 are not averaged  
2 across the four reactors. The comment  
3 pertains to Table E-2." And then goes on to  
4 say, "We do not agree that dose reconstructors  
5 will know what reactor to select in most  
6 cases. The purpose for averaging across the  
7 four representative reactors was to create a  
8 single hypothetical representative reactor  
9 appropriate for all sites. The four  
10 representative reactors were selected because  
11 they encompass a wider range of reactor types  
12 themselves selected to cover a wide range of  
13 fuel types, enrichments, and burnup."

14 The SC&A reply to that response  
15 was, "SC&A agrees with NIOSH's first  
16 paragraph. Original comment should have  
17 referred to Table E-2." And then more  
18 substantially, it says, "While it is  
19 convenient to average across the four reactor  
20 types, this procedure would not produce a  
21 bounding exposure. Source terms for the

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1 reactor type that yield the maximum exposure  
2 should be used for consistency with NIOSH's  
3 stated purpose of the OTIB." And, then, in  
4 parentheses, "See NIOSH's response to Comment  
5 No. 23," closed parentheses.

6 And we are recommending that this  
7 status be in progress. Steve shows it as  
8 being open, but since we're discussing it, it  
9 should probably be in progress.

10 CHAIR MUNN: Yes.

11 MEMBER ZIEMER: So you're asking  
12 for the rationale for choosing an average  
13 value as a bounding value, I think is what  
14 you're saying?

15 DR. MAURO: Exactly, yes.

16 DR. OSTROW: This is Steve Ostrow.

17 I just wanted to make the comment,  
18 the reason I made this comment, and I repeated  
19 this a few times, it's not clear what OTIB-54  
20 is intended to be. NIOSH states, in their  
21 response to Comment 23, that OTIB-54 was

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1 "never intended to provide anything more than  
2 a favorable overestimate."

3 Now if it's supposed to be a  
4 favorable overestimate, then perhaps they  
5 shouldn't average the four reactor types, but  
6 they should use the bounding, the highest  
7 value. But it seems little bit inconsistent.

8 If it really is supposed to be an  
9 overestimate, this OTIB, I think they should  
10 use the highest value.

11 MR. MARSCHKE: So let me  
12 understand. They have a list of  
13 radionuclides, and they have values for each  
14 one of the four reactor types. And then what  
15 they do is they take the four values, and for  
16 the default reactor they average those four  
17 values?

18 DR. OSTROW: That's my  
19 understanding of what they did.

20 MR. MARSCHKE: And what you're  
21 suggesting is, basically, instead of averaging

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1       them, you look for the maximum of those four  
2       types and use that value as the default value?

3                   DR. OSTROW:    Yes, that's what I'm  
4       suggesting, and that would be consistent with  
5       the purpose that NIOSH states in comment --

6                   MR. MARSCHKE:  Twenty-three.

7                   DR. MAURO:    And that philosophy,  
8       you know, NIOSH has adopted across the board  
9       when there's uncertainties like this, and they  
10      deal with with regard to chemical form,  
11      particle size.  You know, always defaulting to  
12      the one that's going to tend to give the  
13      benefit of the doubt.  So we were surprised  
14      that you would go with a new construct which  
15      averaged across them, and we would have  
16      thought that they would have gone with the  
17      same basic philosophy.

18                   Well, then, we'll just go with the  
19      limiting one, the limiting mix of  
20      radionuclides for that reactor type, I mean  
21      limiting for that particular person's cancer.

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1       So we were just surprised that they went with  
2       a construct that really sort of averaged it  
3       out. They really haven't done in the past.  
4       In the past, they usually did go -- NIOSH did  
5       go with the limiting mix.

6                        Anyway, so that's what we're  
7       putting on the table as a way to resolve this  
8       issue. And certainly, NIOSH, you know, it's  
9       something that they could consider.

10                      CHAIR MUNN: Paul?

11                      MEMBER ZIEMER: I think we had this  
12       discussion before because it's not just the  
13       average. The mixes are different for each of  
14       the four systems. So the only way you could  
15       do, I think, what's being described is to take  
16       the maximum nuclide from one reactor and then  
17       a different one from a different reactor, and  
18       you would get a funny mix of maximizing all  
19       the individual nuclides and putting that  
20       together. Is that what you're talking about?

21                      DR. MAURO: No, Paul. Well, I --

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1                   MEMBER ZIEMER:    Or are you just

2                   saying take the maximum of the four --

3                   DR. MAURO:    Yes.

4                   MEMBER ZIEMER:   -- mixes?

5                   DR. MAURO:    Yes.    Yes.    I remember

6                   we talked about this.    No, it would be

7                   implausible to have a mix that would represent

8                   the worst of each one of those reactors and

9                   pick that worst mix.

10                  We think that if you don't know

11                  which class of reactors you're dealing with,

12                  you pick that class that would be the one that

13                  would be most bounding.    So it would be

14                  plausible.    That is, if you don't know, you

15                  pick the one that could plausibly have been

16                  the reactor this person was exposed, where he

17                  got his exposures from, and the one that would

18                  give the mix of beta-gamma emitters in the

19                  urine that would result in the limiting dose

20                  to the organ of concern.

21                  So it would really be a matter, I

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1 guess, of running the four cases and finding  
2 out which one gives you the highest for --

3 MR. HINNEFELD: Well, actually,  
4 John, it would be running the four cases times  
5 every target organ.

6 DR. MAURO: Oh, well, no, for the  
7 particular person.

8 MR. HINNEFELD: Yes, but I mean --

9 DR. MAURO: But you could help me  
10 with this.

11 MR. HINNEFELD: -- for the dose  
12 reconstructor to know what to do --

13 DR. MAURO: Yes.

14 MR. HINNEFELD: -- I mean you're  
15 going to have the dose reconstructor run all  
16 four cases for that particular case or, ahead  
17 of time, in this document you're going to say,  
18 for this organ, here's your mixture, or for  
19 this collection of organs, this is the mixture  
20 you use.

21 DR. MAURO: Yes.

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1                   MR. HINNEFELD:       And for this  
2       collection of organs, you use this mixture.  
3       Either way, for every one of these dose  
4       reconstructions that use this technique, that  
5       means you do four IMBA runs instead of one, or  
6       you do four times the number of dose -- you  
7       know, target organs you might have one time,  
8       and do it that way.

9                   DR. MAURO:    Yes.  I mean you could  
10      understand our rationale.

11                  MR. HINNEFELD:   Yes, I understand  
12      the rationale.  I'm just trying to figure out  
13      where we end up.

14                  DR. MAURO:    Yes.  No, I understand.

15                  MR. HINNEFELD:   -- what difference  
16      there is.  I don't know if we've ever looked  
17      at the difference.

18                  DR. MAURO:    Well, but I think our  
19      rationale is appropriate, given the philosophy  
20      that we have all agreed to.  I also appreciate  
21      that maybe implementing that rationale, the

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1 mechanics of it, could be burdensome. I'm not  
2 sure. You know, it sounds like running these  
3 four cases instead of just one --

4 MR. HINNEFELD: I can get a paper  
5 out of this.

6 (Laughter.)

7 MEMBER ZIEMER: Well, could I  
8 comment further? It seems to me, this is sort  
9 of intuitive, but you not only would have to  
10 do that for each individual, but what the  
11 maximum is is going to depend not only on the  
12 target organ, but some intake times and some  
13 other parameters. So I don't think you know a  
14 priori which mix to even use. Do you know  
15 what I'm saying? We don't even know what the  
16 maximum is for an individual.

17 MR. HINNEFELD: No, actually,  
18 you're probably right because of intake times  
19 and diagnosis dates. Dose would fit --

20 MEMBER ZIEMER: Because you have a funny  
21 mix of nuclides, you don't know what the

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1 maximum is going to be for a given target  
2 organ for an individual.

3 MR. MARSCHKE: That's why I was  
4 thinking I would have kind of gone a different  
5 way than what John was suggesting. I would  
6 have kind of gone with the maximum  
7 radionuclide or for each radionuclide, the  
8 maximum value, and come up with a default  
9 which is a mix from all the different reactor  
10 types. Now I don't know what that does to the  
11 total dose or if it sends it through the roof  
12 or what because I don't know how close they --

13 DR. MAURO: Well, hold on for a  
14 second. Maybe it's more complicated than I  
15 have in my mind, and I'm looking at it too  
16 simply.

17 But, for a moment, let's say we're  
18 looking at a person and he has a record of  
19 gross beta-gamma analysis of urine samples.  
20 You know, maybe he had monthly, yearly, or  
21 quarterly, or whatever. And you've got the

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1 data.

2 But the problem you have is you  
3 don't know what mix of radionuclides to use,  
4 to assign. What did he inhale to get that  
5 mix? And right now, you have a protocol that  
6 says, well, if he worked at this kind of  
7 reactor, we'll use this mix. If he worked at  
8 this kind of reactor, we use this mix. And it  
9 all seems pretty straightforward.

10 But now along comes a problem which  
11 may be the exception to the rule that you only  
12 rarely encounter, but you say, well,  
13 unfortunately, we really don't know which  
14 reactor he was working with, you know, and as  
15 a result, we don't know what mix to assign.  
16 But we know it had to be one of these four  
17 categories. It's fair enough, let's say.

18 I guess, why couldn't you just pick  
19 that mix that you felt he could have been  
20 exposed to that really puts an upper bound?  
21 And it's really choosing from before.

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1                   You know, I guess, is there more to  
2                   the problem than that?

3                   MR. MARSCHKE: You don't know which  
4                   of the four is the upper bound. If I  
5                   understand what Stu and Paul are saying, it is  
6                   that the upper bound depends upon what organ  
7                   you're looking at.

8                   DR. MAURO: Right.

9                   MR. MARSCHKE: It also depends upon  
10                  what inhalation rates, and so on and so forth,  
11                  that are being utilized. So there's more to  
12                  it than just looking at -- you can't just tell  
13                  by looking at the four mixes which one is the  
14                  bounding one.

15                  DR. MAURO: You would have to run  
16                  it four times. Right, you would have to run,  
17                  for that organ, for this particular scenario,  
18                  for that person -- now you tell me if this  
19                  would be burdensome.

20                  So here we have this person, but,  
21                  unfortunately, because you don't know which

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1 reactor, you're sort of stuck; you're going to  
2 have to run all four, and then see which one  
3 gives you the highest dose to the organ of  
4 concern. So, clearly, it will be four times  
5 more work related to running IMBA.

6 I've seen you've done that many  
7 times. So I guess I wasn't thinking that this  
8 would be unusually burdensome as compared to  
9 the kinds of things you were doing already in  
10 order to optimize or place an upper bound on  
11 worker doses.

12 But is it more than that, than just  
13 running it four times?

14 MR. HINNEFELD: Well, I think, no  
15 matter how we end up with this, I don't know  
16 how it's doable unless we have a preset almost  
17 list of intake and dose regimes per whatever  
18 mixture we choose, whether it's an average,  
19 whether it's one, or do it for the four.  
20 Because I don't think we could have the dose  
21 reconstructor run the IMBA runs every time,

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1 even if we had an agreed-upon set of  
2 radionuclides, because you run IMBA by  
3 radionuclide. So, you do the cesium-137, the  
4 intake, and, then, you do the strontium-90  
5 intake, and, then, you do the iron-59 intake,  
6 or whatever.

7 So, if you had a dose reconstructor  
8 and say, okay, we're going to these dose  
9 reconstructions so that each time the dose  
10 reconstructor does a dose reconstruction,  
11 they're actually going to run IMBA for that  
12 dose reconstruction, they're already -- I  
13 haven't looked at the table for how many  
14 nuclides are here, but I know it's a list.

15 DR. MAURO: Yes.

16 MR. HINNEFELD: You'll have to run  
17 IMBA that many times if you have an agreed-  
18 upon set of intake values.

19 So, to be workable, this kind of  
20 has to be precalculated, predispositioned, so  
21 that the dose reconstructor can make the

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1 selections that are relevant for that case in  
2 terms of exposure time, amount of exposure  
3 based on the bioassay data, dates of exposure,  
4 and dates of diagnosis, and the specific  
5 cancer. So, they can make the entries based  
6 on that information that is specific to that  
7 case and use this pregenerative whatever  
8 calculational method that you're going to have  
9 to do it. So, I think, I mean, you would have  
10 to have four of those precalculated workbooks  
11 each time.

12 I don't know. I really can't  
13 commit to too much. I mean we can certainly  
14 take this back to the people at ORAU who have  
15 far more knowledge about dose reconstruction  
16 than I do and workings, and what would work in  
17 terms of producing dose reconstructions than I  
18 do.

19 DR. MAURO: Well, the only reason  
20 I'm saying what I'm saying is that,  
21 apparently, doing it for one kind of reactor,

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1 for that complete mix that's there for that  
2 reactor, No. 1, you do, and you're fine with  
3 that. And I guess I just simply thought,  
4 well, if you could do it one time, every time  
5 you have to do, you have to pick one of these  
6 reactors and do it. And I don't know how you  
7 actually exercise that.

8 Now what we're saying is, well,  
9 maybe, unfortunately, when you have this  
10 unknown, you might have to do that, but not  
11 one time, but four times.

12 MR. HINNEFELD: Yes.

13 DR. MAURO: And it may turn out  
14 that it is very burdensome. All we could do  
15 is say that we think the logic that we're  
16 bringing to the table regarding being  
17 claimant-favorable is consistent with the  
18 general philosophy, and the averaging approach  
19 appears to break that philosophy. That's all.

20 There's a way to skin that cat, to  
21 make sure that you're being claimant-favorable

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1 that's simpler than another way to come to it.

2 Or, if you could say that, no, using the  
3 average thing, however you approached it or  
4 were tweaking that a bit, there may be a way  
5 to cover it.

6 All we're really looking for is  
7 some assurance that, when you have the  
8 situation arise when you don't know which  
9 reactor it is, the degree of confidence that  
10 you are not underestimating the guy's dose.

11 CHAIR MUNN: Yes, Paul?

12 MEMBER ZIEMER: Well, I have an  
13 additional question here. Maybe it was  
14 discussed before, but it seems to me that  
15 there were already some claimant-favorable  
16 assumptions built into each of the four models  
17 to start with dealing with perhaps enrichment  
18 and the length of the time the reactor was  
19 operated, and some burnup things, and that  
20 kind of thing.

21 I don't really remember off the top

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1 of my head, but I think, John, you're  
2 struggling a little bit with the idea that  
3 we're assigning what's identified as an  
4 average dose here.

5 DR. MAURO: Yes.

6 MEMBER ZIEMER: And maybe we need  
7 to go back and get some clarity on that to  
8 help us come to closure. But I believe that  
9 there were some claimant-favorable assumptions  
10 made. Because you can't take each individual,  
11 I don't think, and figure out how many  
12 operating days that reactor had, what the  
13 inventory was, and all of those parameters.  
14 So, there's some practical issues there.

15 But you can make claimant-favorable  
16 assumptions about each of the models and,  
17 then, say, okay, and we're averaging these  
18 claimant-favorable assumptions. Do you  
19 understand what I'm saying?

20 DR. MAURO: Yes. No, and I'm fine  
21 with that.

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1                   MEMBER   ZIEMER:       Yes, if that's  
2                   what's happening.

3                   DR. MAURO:    Yes.

4                   MEMBER   ZIEMER:       But maybe some  
5                   clarity on that. I'm just a little fuzzy in  
6                   my mind.

7                   DR. MAURO:    One more dimension to  
8                   this. It may turn out that the simple  
9                   solution is to have a single mix that you use  
10                  universally that would apply to all  
11                  circumstances that you feel would be bounding  
12                  and plausible for every worker.

13                  In other words, I'm not one looking  
14                  for more work that has to be done to do these  
15                  dose reconstructions. If it turns out what  
16                  you're saying, Paul, is basically built into  
17                  each four are a lot of claimant-favorable  
18                  assumptions in a way that you feel confident  
19                  that for the individual reactors you're  
20                  bounding.

21                  There may be even another

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1 simplifying step. Just pick a single mix that  
2 is bounding. Now you always have these  
3 questions about plausibility. But that might  
4 be the solution.

5 Or, as you point out, it may turn  
6 out that built into the four are enough  
7 conservatism that, even if you go with an  
8 averaging-type approach -- we'll call it  
9 averaging approach; I'm not sure if it's  
10 exactly averaging -- that the outcome of that,  
11 a case could be made it would be limiting for  
12 this person because of the inherent carryover  
13 of conservatisms.

14 I mean we're fine with that, but we  
15 haven't heard that, but that may be the  
16 resolution.

17 CHAIR MUNN: Well, that was the  
18 underlying tenet of what we had discussed when  
19 we went over this at considerable length last  
20 time --

21 DR. MAURO: Right.

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1                   CHAIR MUNN: Was that the amount of  
2 conservatism already built in was, as I  
3 recall, creating some concern as to whether or  
4 not we were staying inside the plausibility  
5 limits.

6                   The question that comes to my mind,  
7 and perhaps I'm missing something really key  
8 here, is why there is so much angst over what  
9 type of reactor was involved with this  
10 individual's exposure. These reactors, their  
11 presence and their location is well-known.  
12 It's difficult for me to understand why this  
13 is such a large problem for us if we have work  
14 records for the individuals involved.

15                  MR. HINNEFELD: Well, you see, we  
16 won't necessarily know someone who works at  
17 Idaho Falls, for instance, what his entire  
18 history of exposure to various reactors was.

19                  CHAIR MUNN: That's true. However,  
20 the reactor types that we're choosing are more  
21 than adequate for the types at Idaho Falls.

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1                   MR. HINNEFELD:    Yes, but, I mean,  
2                   how would we select?  I mean in certain years  
3                   maybe he worked at ATR, in certain years he  
4                   worked -- I can't remember what -- the boiler,  
5                   or certain years he worked at EBR-II.  And we  
6                   don't know what years, but he worked there,  
7                   say, during the years that these various  
8                   reactors ran.  We don't know what years he was  
9                   at what reactor.

10                  And so, how do we, in terms of  
11                  putting a temporal thing on his dose  
12                  reconstruction, which one of those fission,  
13                  nuclide mixtures do we use?

14                  CHAIR MUNN:       I understand what  
15                  you're saying, and I also understand what Paul  
16                  was saying earlier.  Power factors in any  
17                  given year, exposures, the proximity to the  
18                  reactor itself, the amount of shielding that  
19                  was being used for one or other of the  
20                  experiments that was going on, all of those  
21                  factors go into it.

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1                   So, the real question as it appears  
2                   to be on the table right now is the one I just  
3                   stated just a moment ago, which is, can we  
4                   agree that this mix of reactors is not only  
5                   reasonable, but falls within the limits of  
6                   plausibility, since there isn't much of a  
7                   question about whether or not there's going to  
8                   be an underestimate here? Is that correct,  
9                   John? We're not arguing --

10                   DR. MAURO: I would say, if that  
11                   case can be made, we haven't heard that. That  
12                   is, the mix that was set as the default one,  
13                   when you don't know the reactor, a case could  
14                   be made that embedded in that is enough  
15                   conservatism, that there's a level of  
16                   assurance that you're not going to  
17                   underestimate the dose.

18                   I mean that's all we're really  
19                   looking for. It wasn't that complicated in  
20                   terms of looking at the problem. It's simply  
21                   the solution sounds like it's complicated, but

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1 the problem is just some level of assurance  
2 that we're going to a process right now that  
3 gives everyone confidence that, by going to  
4 this default mix for the circumstance when you  
5 don't know, like you said, at Idaho Falls  
6 would be an example, INL, you may not know  
7 which reactor.

8 And I'm not even sure if it makes  
9 not much difference when you go from reactor  
10 to reactor, the mix is that much different.  
11 I'm just presuming they are because you did  
12 develop four different mixes.

13 But if a case could be made that  
14 this fifth mix, the fourth mix, is probably  
15 inherently conservative, that would do the  
16 trick.

17 MR. BURNS: This is Bob Burns.

18 I would add that the statement John  
19 just made, I think it's fair to say, was our  
20 philosophy when we compiled the document, that  
21 there was so much, I'll say, conservatism, for

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1 lack of a better word, or favorability perhaps  
2 may be better, in the reactors individually,  
3 that the operational simplicity we achieve by  
4 averaging, we were still confident we weren't  
5 underestimating anyone's dose.

6 CHAIR MUNN: Can we agree that at  
7 this point what needs to happen is we need to  
8 have a response from NIOSH to SC&A's statement  
9 here, essentially saying what you just said,  
10 Bob, that we're okay here? So that SC&A can  
11 see that in writing. Will that resolve our  
12 momentary problem here?

13 MR. HINNEFELD: Yes, I think the  
14 next action is ours, is a NIOSH/ORAU team  
15 response to this comment from SC&A. Rather  
16 than just restating the fact, some sort of  
17 evidence that --

18 CHAIR MUNN: Yes.

19 MR. KATZ: Illustrate the  
20 conservatism with some sort --

21 MR. HINNEFELD: Give evidence that

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1       there are sufficient conservatisms here, that  
2       we're not underestimating anybody's dose.

3                   MS. BRACKETT:       This is Liz  
4       Brackett.

5                   I would just point out that Section  
6       6.3 of OTIB-54 is titled, "Verification that  
7       Default Source Terms Do Not Underestimate  
8       Dose."

9                   MR. HINNEFELD:   Somebody read the  
10       actual document.

11                   (Laughter.)

12                   MS. BRACKETT:   And so, I believe  
13       it's documented in here, and it gives  
14       approximate factors by conservatism.   And  
15       maybe that would address the issue.

16                   DR. MAURO:       Very good, Liz.   I  
17       think you just caught us.

18                   (Laughter.)

19                   MR. BURNS:       I would add to that  
20       there was a comment on that section that is  
21       still outstanding.   I mean I agree with Liz.

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1 That was the intent in putting that  
2 information in the OTIB, but SC&A had raised  
3 some additional questions about that section  
4 that we're in the process of addressing.

5 MR. HINNEFELD: Okay. Well, it  
6 sounds like we're working on what needs to be  
7 worked on.

8 DR. ULSH: Well, there's several  
9 more findings here.

10 MR. HINNEFELD: Yes.

11 DR. ULSH: I think what Bob is  
12 saying is some of those findings would have to  
13 relate to that.

14 MR. HINNEFELD: So, what he's  
15 saying is what we're doing will lend us -- you  
16 know, we're essentially going to provide what  
17 we would provide for this anyway.

18 CHAIR MUNN: All right. Let's,  
19 then, for the moment, assume that the status  
20 of No. 14 is going to be response due from  
21 NIOSH.

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1 MEMBER ZIEMER: Is that 14 or --

2 MR. MARSCHKE: Yes, it's 14.

3 DR. ULSH: So, the status is open  
4 then?

5 CHAIR MUNN: Yes.

6 MR. KATZ: In progress.

7 CHAIR MUNN: It's in progress.

8 DR. ULSH: In progress?

9 MR. MARSCHKE: Actually, it does  
10 come up on the database, and the first 13  
11 we're showing, basically, they are -- well,  
12 most of them we're showing as being closed or  
13 in progress, or I mean showing as closed or  
14 being in abeyance, I should say. So, the only  
15 one that we need to change, I guess, Steve, is  
16 issue number 9. The last time we talked about  
17 it, we said, basically, SC&A needs to go back  
18 and look at it. I guess you have looked at  
19 it, and now you're saying that one also can  
20 be --

21 MR. KATZ: But can I ask about this

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1 status? You said the action is DCAS, but they  
2 just said 6.3 illustrates the conservatisms.

3 MR. HINNEFELD: Well, Bob said  
4 there are other comments later on --

5 MR. KATZ: Right, but those are --

6 MR. HINNEFELD: That relate to  
7 that.

8 MR. KATZ: Right.

9 MR. HINNEFELD: So, we can provide  
10 it, something here.

11 MR. KATZ: Okay.

12 MR. BURNS: Yes, it's Comment 16,  
13 specifically.

14 MR. HINNEFELD: Okay.

15 CHAIR MUNN: All right. Good.

16 MR. KATZ: But it seems to me that  
17 SC&A needs to review again 6.3, then, to see  
18 if that puts to bed, with the exception of  
19 this other comment -- it's the issue of  
20 conservatisms.

21 MR. HINNEFELD: Okay.

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1                   CHAIR MUNN: With any luck at all,  
2 all it will take is a memo from NIOSH saying  
3 this is covered in 6.3.

4                   MR. KATZ: Right. All I'm saying  
5 is that, rather than await a memo from NIOSH  
6 saying look at 6.3, except for this other  
7 item, SC&A can look at 6.3 now and come to the  
8 table, agreeing or not agreeing with --

9                   CHAIR MUNN: I certainly have no  
10 objection to them looking at it right now and  
11 agreeing that it's okay.

12                   (Laughter.)

13                   MR. KATZ: I don't mean now at the  
14 table while we're sitting here. I just mean  
15 it doesn't need to await a NIOSH response, it  
16 seems.

17                   DR. MAURO: Yes, the way I see it,  
18 this will be NIOSH recommending something.  
19 SC&A, take a look at 6.3. See if, in fact, it  
20 resolves most of your concerns.

21                   There's still, I guess, a question

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1 on the table related -- I don't know what  
2 number it is -- related to 6.3. I'd like to  
3 hear what that is. You know, what is the  
4 nuance with regard to 6.3 that maybe we still  
5 need a little bit more evidence to be  
6 expounded?

7 CHAIR MUNN: Okay.

8 DR. MAURO: So, maybe that's where  
9 we should be right now, just to talk about  
10 that issue.

11 CHAIR MUNN: Okay. So, I'm going  
12 to record the current action is SC&A's going  
13 to look at the OTIB to verify that that has is  
14 covered in the document.

15 MEMBER LEMEN: That's 6.3.

16 CHAIR MUNN: It's 6.3, correct.

17 MEMBER LEMEN: That's for No. 14.

18 CHAIR MUNN: That's No. 14.

19 Now the next item, which I don't  
20 have up, 15.

21 MR. MARSCHKE: Fifteen is basically

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1 -- we can read the finding. It's a reactor  
2 source term finding. "Some radionuclides were  
3 not released in significant quantities for all  
4 four reactor types. The average source term  
5 for those radionuclides as listed in Table E-2  
6 (default source terms) underestimates the  
7 value given in Table E-1, Simplified Source  
8 Terms."

9 And the NIOSH response was to see  
10 Comment 14, and the SC&A response or reply  
11 was, basically, keep it in progress, just like  
12 Comment 14. So, basically, 15 tracks 14.

13 MEMBER LEMEN: Fifteen what?

14 MR. MARSCHKE: Fifteen, the comment  
15 and the response to 15 would follow the  
16 response and the resolution to 14.

17 CHAIR MUNN: Okay. So, we'll just  
18 include 15 in our --

19 DR. ULSH: So, is the action still  
20 the same then? For 14, SC&A is looking at  
21 Section 6.3. Should we put that, also, as the

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1 status on 15 in terms of the action item? Is  
2 that what you're saying?

3 MR. MARSCHKE: Yes.

4 MR. HINNEFELD: On 14, ORAU still  
5 is writing a response. ORAU's writing a  
6 response on 14.

7 MR. MARSCHKE: Yes, both NIOSH and  
8 SC&A have a response for 14, is my  
9 understanding.

10 MR. HINNEFELD: Yes.

11 MEMBER LEMEN: So, we're coming  
12 back to those at a later Board meeting?

13 CHAIR MUNN: Yes.

14 MEMBER LEMEN: Or a later  
15 Subcommittee meeting?

16 CHAIR MUNN: Next time we'll do 14  
17 and 15 --

18 MEMBER LEMEN: Got you.

19 CHAIR MUNN: And 16.

20 MR. MARSCHKE: Sixteen, at the last  
21 meeting we had it as in progress. And as per

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1 Steve Ostrow's review of the NIOSH response,  
2 we are recommending a change to in abeyance.

3 Do you want me to read the finding?

4 MEMBER GRIFFON: Steve, this is  
5 Mark Griffon.

6 MR. MARSCHKE: Yes.

7 MEMBER GRIFFON: On No. 16, I'm  
8 unclear why that would be in abeyance. The  
9 NIOSH response says they're in the process of  
10 establishing appropriate methods to assess the  
11 sources of uncertainty. It doesn't sound like  
12 it's just a simple thing of, yes, we'll add  
13 this language. Am I misunderstanding that?  
14 It doesn't seem like a simple change to the  
15 procedure. It seems like a little more than  
16 that. How do we know that we're in agreement  
17 with what they're going to come up with for  
18 addressing the uncertainty?

19 MR. HINNEFELD: Yes, I think you're  
20 right, Mark. I think in progress should be --

21 MR. MARSCHKE: It should remain in

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1 progress. I would agree.

2 Steve Ostrow, do you want to say  
3 anything?

4 DR. OSTROW: No. I'm just having  
5 sort of a mental lapse of why I put down in  
6 abeyance. It should be in progress.

7 MR. MARSCHKE: In progress. Good  
8 catch, Mark.

9 DR. MAURO: So, this is John.

10 Just to make it clear, it sounds  
11 like we're still talking about the same  
12 subject. In other words, even though we have  
13 these different items -- they're all really  
14 the same, and what it is is SC&A go back, take  
15 another look at 6.3; see if, in fact, it  
16 provides a pretty compelling argument.

17 Meanwhile, it sounds like NIOSH,  
18 they're still looking at it, at some of the  
19 assumptions, and you're putting some material  
20 together that will enrich your case in 6.3.

21 And when we both finish doing what

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1 we're doing, we'll be in a position to close  
2 all these out.

3 MR. MARSCHKE: Right. Yes, because  
4 it does look like we have read 6.3, and we  
5 don't agree with the conclusion that the  
6 default source term produces an upper bound.

7 CHAIR MUNN: Are we at 17?

8 MR. MARSCHKE: Now 17, 18, 19 --

9 CHAIR MUNN: Do not have anything  
10 new?

11 MR. MARSCHKE: We're probably are  
12 going to want to wait until maybe Joyce gets  
13 on the phone this afternoon.

14 If I'm not incorrect, Steve, you've  
15 left these blank because you feel that you  
16 want to get Joyce's input?

17 DR. OSTROW: Yes, that's true.

18 CHAIR MUNN: Well, 17's in  
19 progress.

20 MR. MARSCHKE: On the database,  
21 it's showing as being, yes --

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1 CHAIR MUNN: Eighteen is closed.

2 MR. MARSCHKE: Eighteen is closed?

3 CHAIR MUNN: Yes. And 19's in  
4 progress.

5 MEMBER LEMEN: Where do you see 18  
6 is closed? I don't see that.

7 MR. HINNEFELD: It's on the  
8 database.

9 MR. MARSCHKE: On the database  
10 itself.

11 CHAIR MUNN: On the database.

12 MEMBER LEMEN: Okay. We've got two  
13 documents going.

14 MR. MARSCHKE: We've got two  
15 documents going.

16 CHAIR MUNN: Nineteen is in  
17 progress.

18 Twenty's in progress.

19 Twenty-one, in progress.

20 Twenty-two, in abeyance.

21 MEMBER LEMEN: I thought 21 -- 20

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1 says in abeyance on this one.

2 MR. MARSCHKE: Wanda, Steve has  
3 basically got an update on the recommendation  
4 for 20 from what it was at the last time.

5 CHAIR MUNN: Excellent.

6 MEMBER LEMEN: So, it's not in  
7 abeyance.

8 CHAIR MUNN: Yes, 20 is --

9 DR. ULSH: We're jumping around a  
10 bit.

11 I don't know what the status is,  
12 the current status is for 17.

13 MR. MARSCHKE: The current status  
14 for 17, the current status is 17 is in  
15 progress; 18 is closed; 19 is in progress.

16 DR. ULSH: Okay. Thanks.

17 MR. MARSCHKE: Twenty is in  
18 progress.

19 CHAIR MUNN: We have something new  
20 on 20.

21 MR. MARSCHKE: Seventeen, 18, and

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1 19, we don't have anything new on. Twenty is  
2 in progress, but we do have a new  
3 recommendation from Steve in response to the  
4 NIOSH response.

5 And, basically, if you want me to  
6 read it, Wanda?

7 CHAIR MUNN: Yes, please.

8 MR. MARSCHKE: The comment has to  
9 do with the urinalysis. "SC&A cannot  
10 reproduce the percentages listed in Table G-1  
11 to G-4 following the procedure described by  
12 NIOSH, with the values listed for strontium-90  
13 presenting the greatest difference. On the  
14 other hand, Table 7-1, values for strontium-90  
15 were reproduced using SC&A-derived values, but  
16 not using Table G-2 values."

17 The NIOSH response was, "We, too,  
18 noted the issues with the attachment G data,  
19 and a revision is in progress to correct it.  
20 This will also affect the values in Table 7-2.

21 In addition, some of the IRF values used will

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1 also be revised."

2 And the SC&A reply was, "Accepted.

3 NIOSH to make indicated changes in next  
4 revision."

5 And the recommended status change  
6 is in abeyance.

7 CHAIR MUNN: Any problem with that?

8 (No response.)

9 Let's accept in abeyance and change  
10 it?

11 MEMBER LEMEN: And change it? I  
12 thought it was in abeyance.

13 MEMBER ZIEMER: Well, we have to  
14 accept it --

15 MEMBER LEMEN: On that one? So,  
16 we're changing it on the big chart?

17 CHAIR MUNN: Yes, uh-hum, from in  
18 progress to in abeyance.

19 No. 22 or 21.

20 MR. MARSCHKE: Twenty one, the  
21 status was in progress. Steve has looked at

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1 it since the last meeting, and he has accepted  
2 the NIOSH response and recommends it being  
3 changed to closed.

4 The comment is regarding the  
5 urinalysis. "The radionuclides listed in  
6 Tables G-1 to G-4 are the ones taken from  
7 Table D-1. And the simplifications introduced  
8 in Tables E-1 and E-2 were not used."

9 The NIOSH response was, "That is  
10 correct. The simplified source terms given in  
11 attachment E are the basis for Tables 7-3 and  
12 7-4. Attachment G in Tables 7-1 and 7-2 are  
13 based on the nuclide mix given in Table D-1."

14 And as I said before, SC&A has  
15 accepted that response and recommends that  
16 this issue be closed.

17 CHAIR MUNN: Any objection to  
18 closing this issue?

19 (No response.)

20 Done.

21 MR. KATZ: I just have a process

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1 question about we went through a number of  
2 items that are in progress, but there's  
3 nothing new to report. So, we just whizzed by  
4 them. But my process question is, do we need  
5 to sort of question as to what's going on or  
6 when something is going to be delivered on  
7 these in progress items? Or do we just sort  
8 of flip through them and ignore them?

9 MR. HINNEFELD: Well, I don't know  
10 that I'll be able to give you a date on this  
11 or a --

12 MR. KATZ: Okay.

13 MR. HINNEFELD: Schedule today. I  
14 mean most of these in progress things, since  
15 Steve Ostrow has commented on and said your  
16 initial response wasn't convincing,  
17 essentially, those are back in our court. And  
18 today I just don't know --

19 MR. KATZ: Okay.

20 MR. HINNEFELD: That I can provide  
21 a schedule.

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1 DR. MAURO: This is John.

2 I was thinking the same thing in  
3 terms of, who has the action? When it's in  
4 progress and it's blank -- I remember reading  
5 it; I don't have it in front of me right  
6 now -- I wasn't quite sure who has the ball  
7 right now. Is it the onus on SC&A to make a  
8 case of what the problem is or --

9 CHAIR MUNN: No. No, whenever a  
10 case is in progress, it means we have agreed  
11 on what needs to be -- we have discussed what  
12 is being done; NIOSH is addressing it.

13 DR. MAURO: Okay. So, that  
14 means --

15 MR. HINNEFELD: Well, actually,  
16 it's the person who most recently provided  
17 input to the discussion is off the hook until  
18 the other party provides it.

19 CHAIR MUNN: Yes.

20 MR. HINNEFELD: So, in this case,  
21 for these, since SC&A most recently provided

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1 the input to the discussion, that puts us on  
2 the hook.

3 CHAIR MUNN: Yes.

4 MR. HINNEFELD: There's the one  
5 exception of 14 we're going to look at that  
6 16.3 to see if it helps.

7 CHAIR MUNN: Right.

8 DR. MAURO: Okay. Got it. Good.  
9 Thank you.

10 CHAIR MUNN: Item 22.

11 MR. MARSCHKE: Item 22.

12 CHAIR MUNN: The Subcommittee  
13 revised to in abeyance. There is no change  
14 there, is there?

15 MR. MARSCHKE: I don't think so.

16 CHAIR MUNN: And 23.

17 MR. MARSCHKE: Twenty-three --

18 CHAIR MUNN: There's a new comment  
19 from SC&A. I think all we need to do, I think  
20 we have the two preceding comments. We need  
21 to read SC&A's response to NIOSH's response.

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1                   SC&A now says -- would you like to  
2 read that, Steve?

3                   MR. MARSCHKE:    "NIOSH's statements  
4    hear that OTIB-54 was never intended to  
5 provide anything more than a favorable  
6 overestimate and that doses should be assigned  
7 as upper bounds are not reflected in the text  
8 in the OTIB. For example, one would expect  
9 that this interpretation would appear in  
10 Sections 2, (Purpose), and 3, (Scope).  
11 Further discussion is required to clarify that  
12 the OTIB should and should not" -- excuse me  
13 -- "Further discussion is required to clarify  
14 what the OTIB should and should not be used  
15 for. SC&A recommends that the issue remain in  
16 progress."

17                   CHAIR MUNN:    Any argument about  
18 that? The ball is in the NIOSH court.

19                   MR. HINNEFELD:       Yes, that's  
20 relatively clear.

21                   CHAIR MUNN:    Okay.

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1                   MR. MARSCHKE: And I think the same  
2 is true for issues 24 and 25 and 26.

3                   CHAIR MUNN: There's nothing new  
4 from SC&A. Just they remain open, in  
5 progress.

6                   MR. MARSCHKE: For the same reason  
7 that 23 remains open and in progress.

8                   CHAIR MUNN: Okay. Right. Okay.  
9 So, 24, 25, 26, which brings us to the end of  
10 OTIB-54.

11                   Does anyone else have any  
12 commentary or any argument they want to make  
13 with respect to what we just did with 54?

14                   MEMBER LEMEN: All the remainder  
15 will stay in progress? Is that what you're  
16 saying?

17                   CHAIR MUNN: Correct.

18                   MR. MARSCHKE: And we're going to  
19 come back this afternoon and revisit 17, 18,  
20 and 19, when Joyce is on the phone perhaps.

21                   CHAIR MUNN: Yes.

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1                   MEMBER ZIEMER: Well, 18 we already  
2                   said was closed.

3                   MR. MARSCHKE: Okay. Seventeen and  
4                   19. I'm sorry.

5                   DR. MAURO: Steve, one of the  
6                   things that I always appreciated before when  
7                   we were running the software is being able to  
8                   update, you know, how many did we close. Now  
9                   what did we accomplish? It sounds like we did  
10                  a lot on 54.

11                  CHAIR MUNN: We did.

12                  DR. MAURO: Are you able to do  
13                  those kinds of runs again or --

14                  MR. MARSCHKE: No.

15                  DR. MAURO: Oh, okay.

16                  MR. MARSCHKE: That's one of the  
17                  capabilities we lost since last October.

18                  DR. MAURO: Okay. But it sounds  
19                  like, it was 26 issues, and it sounds like a  
20                  bunch of them have been either put in abeyance  
21                  or closed. So, I mean, there's some good news

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1 here.

2 MR. MARSCHKE: Some of them had  
3 already been put in abeyance and closed.

4 DR. MAURO: Oh, they were already  
5 there? Okay. Never mind.

6 CHAIR MUNN: Yes, NIOSH loaded us  
7 up with responses last time.

8 DR. MAURO: Okay.

9 CHAIR MUNN: So, thank you all, and  
10 we need a break. Fifteen minutes max, which  
11 puts us back here at 11:20.

12 MR. KATZ: Okay. Folks, I'm just  
13 putting the phone on mute.

14 (Whereupon, the above-entitled  
15 matter went off the record at 11:03 a.m. and  
16 resumed at 11:22 a.m.)

17 MR. KATZ: Okay, we're back  
18 together.

19 Folks on the phone, do we have you,  
20 too?

21 Okay, Wanda?

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1 CHAIR MUNN: The next item we have  
2 on our agenda is the OTIB-13 issues.

3 DR. ULSH: It's OCAS-TIB-13.

4 CHAIR MUNN: Oh, I'm sorry,  
5 OCAS-TIB-13. I'm sorry.

6 MR. MARSCHKE: Since the last  
7 meeting, I believe NIOSH has revised or  
8 OCAS-TIB-13 has been revised. I can find out.  
9 I know --

10 MEMBER GRIFFON: Steve, this is  
11 Mark Griffon. I'm sorry to interrupt.

12 Was there a handout that you sent?

13 MR. MARSCHKE: I'm getting to that,  
14 Mark.

15 MEMBER GRIFFON: Okay. Okay.  
16 Sorry.

17 MR. MARSCHKE: And SC&A has looked  
18 at the revised TIB-13, and we have made some  
19 comments and recommendations on the revision.

20 And yesterday, part of that email, when I  
21 sent out six files, one of the files was

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1 included called OCAS-TIB-13SC&AREPLY.DOC, and  
2 it includes the history of the OCAS-TIB-13  
3 comments up through Comment No. 5 or 6, up  
4 through Comment No. 6.

5 And Bob Anigstein was the one at  
6 SC&A who looked over the revised OTIB, not  
7 OTIB, TIB-13, and evaluated the resolution of  
8 the SC&A comments.

9 And, Bob, are you on the phone?

10 DR. ANIGSTEIN: Yes, I am.

11 MR. MARSCHKE: And so, do you want  
12 to discuss the results of your review?

13 DR. ANIGSTEIN: Sure. Well, the  
14 comments, the first two comments were  
15 basically editorial and we accepted the  
16 changes. In other words, we had comments on  
17 how the -- I'm sure everybody here knows we  
18 have a set procedure which we follow when  
19 reviewing the various TIBs and OTIBs, and we  
20 look at things like: is it well-written; is  
21 it well-organized, is it understandable?

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1                   So, we had some editorial comments,  
2                   and those were resolved. The revised TIB is  
3                   much more sort of longer. It's clearer. It  
4                   has diagrams and illustrations. So, those  
5                   were adequately answered.

6                   However, we still have the  
7                   technical comments.

8                   MR. MARSCHKE: Can I stop you for a  
9                   minute, Bob?

10                  So, I mean, Wanda, on Issue No. 1  
11                  and Issue No. 2, SC&A is recommending the  
12                  status be changed from in abeyance to closed.

13                  CHAIR MUNN: Is there any objection  
14                  to closing those two?

15                  (No response.)

16                  If not, done. No. 1, closed; Issue  
17                  2, closed.

18                  Now Bob is talking about No. 3,  
19                  right?

20                  MR. MARSCHKE: Correct.

21                  CHAIR MUNN: Very good. Go ahead,

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1 Bob.

2 DR. ANIGSTEIN: Yes. Well, No. 3  
3 is our position, or at least my position, is  
4 that any analysis should be reproducible.  
5 Enough information should be given that  
6 another knowledgeable person with the right  
7 tools can reproduce the results.

8 And we were still not given enough  
9 information, at least not in print form. We  
10 were given privately -- we communicated back  
11 in 2007. Greg Macievic did give us some more  
12 information as to the parameters that he was  
13 using. But it was still not quite adequate.

14 Okay. The issue, or at least one  
15 of the issues we raised was, in Issue 3, in  
16 response to Issue 3, that the wrong photon  
17 spectrum was used. There was the decay scheme  
18 of uranium-238 was not correctly interpreted.

19 Subsequent to this, I did some MCNP  
20 runs myself, actually, yesterday evening. And  
21 it turns that the ratio that we found of the

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1 dose to the torso and the dose to the lapel,  
2 to the film badge, in fact, was not affected  
3 by changing the spectrum at least to what is  
4 the correct spectrum that was used. The  
5 difference was within the statistics.

6 So, that comment in this particular  
7 instance does not change the result. We still  
8 feel that, for appearance's sake, which should  
9 be the scientifically-correct, physics,  
10 nuclear physics should be incorporated. But  
11 we don't consider this a serious issue.

12 MR. MARSCHKE: What do we recommend  
13 the status change, basically, Bob, at this  
14 point on this? I'm confused.

15 DR. ANIGSTEIN: Indeed. Well, the  
16 geometry, the given information, the material,  
17 the source materials, okay -- no, I would say  
18 it's resolved. I would accept it as closed.

19 MR. MARSCHKE: So, we're  
20 recommending --

21 CHAIR MUNN: So, you'll have to

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1       excuse the Chair. I seem to be reading an  
2       entirely different finding. That's because  
3       this has gone to an entirely incorrect  
4       procedure. That makes it rather difficult.  
5       I'll have to try again.

6                   MEMBER ZIEMER: Well, while you're  
7       looking, could I ask, just for clarification?  
8       Bob, this is Ziemer.

9                   You were somewhat concerned about  
10      the location of the film badge on this one,  
11      and the geometry?

12                  DR. ANIGSTEIN: Yes, that, too.

13                  MEMBER ZIEMER: But did you  
14      ascertain, then, that in the final analysis,  
15      that wouldn't affect the results very much?

16                  DR. ANIGSTEIN: No. No. Perhaps  
17      that's more an issue -- I think I'm getting a  
18      little on the question of which issue -- the  
19      Issue 3 was that they did not give, they did  
20      not specify how they did it. So, there are  
21      diagrams that accompanied the revised

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1 procedure which do, in fact, specify. You  
2 can calculate even. You know, it gives enough  
3 information there that you can do a little  
4 geometry, apply a little trigonometry, and any  
5 missing parameter can be very easily  
6 calculated. That could be accommodated.

7 So, the first three are matters of  
8 presentation. It doesn't mean we agree with  
9 the results. It just means that we accept the  
10 fact that, yes, they were clearly presented  
11 and that the fact that the spectrum is not  
12 presented, even though it was privately  
13 communicated to us, is not presented does not  
14 constitute a problem because it does not  
15 really -- in fact, it does affect the results.

16 MEMBER ZIEMER: Well, I'm looking  
17 at the statement that -- I thought this was  
18 the bottom line. It said, "We do not agree  
19 with the above NIOSH statement that the  
20 correction is dependent only on geometry."

21 DR. ANIGSTEIN: Yes, exactly.

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1                   MEMBER ZIEMER:    Is that still an  
2    issue or, when you say you recommend closing  
3    this --

4                   DR. ANIGSTEIN:    Yes, I went back  
5    and did a reanalysis using exactly the same  
6    geometry.  And before, we had done two sets of  
7    analyses.  We had done one analysis to attempt  
8    to reproduce the Attila results.  In our  
9    writeup -- it's not in this summary, but in  
10   the big document, where all the TIBs are  
11   reviewed -- we have a table.  This is Section  
12   2.7 that discusses TIB-13.  So, we have a  
13   Table 2.7.2 where we ran the MCNP using the  
14   same spectrum, the same photon spectrum that  
15   NIOSH had used.  And we get a very different  
16   result than the Attila result that is  
17   published here.

18                   Then, we went and did it the way we  
19   thought it really should be done, and we have  
20   another table at 2.7.3 where we give the  
21   results.  The only thing I did subsequent to

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1 that was I went back and I basically redid  
2 what is Table 2.7 -- I redid the -- we first  
3 replicated the Attila results. We're trying  
4 to replicate the Attila results using the  
5 geometry that we understood to be the case,  
6 using the photon spectrum furnished by NIOSH.

7 So, I redid it leaving everything the same,  
8 but changing the photon spectrum to what we  
9 believe is the correct uranium spectrum.

10 And it turns out that there is no  
11 significant difference in the ratio. There is  
12 the absolute dose rate, but if you take the  
13 ratio of the dose at the torso, at the nearest  
14 point to the ingot at the surface, that's the  
15 dose that the film badge would register if it  
16 had been in that position. It's the Hp10  
17 dose, the Hp10 comma 0. No angular  
18 dependence, but just the dose. The Hp10 is  
19 simply the dose to the ICRU slab at 10  
20 millimeters below the surface, which is what  
21 the film badge at least is supposed to be

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1 calibrated to.

2 And, then, we did the same thing  
3 with the film badge at the lapel, and we got  
4 the ratio for the ingot of 7.6; whereas, the  
5 Attila results reported by NIOSH were 2.125.

6 So, to see whether the energy of  
7 the photons played a role, I redid that using,  
8 simply taking exactly the same input file, but  
9 taking out the NIOSH spectrum and putting in  
10 our own spectrum, which is based on what we  
11 believe is the correct nuclear physics. And  
12 we got essentially the same, the same ratio,  
13 not the same doses absolute, but the ratio of  
14 7.6 plus/minus statistical error.

15 So, I wrote that comment, and I now  
16 wish to correct it. The correction I wouldn't  
17 say is dependent only on geometry, but at  
18 least changing the spectrum from the incorrect  
19 mix of isotopes to a corrected mix of isotopes  
20 does not change the results in this instance.

21 MEMBER ZIEMER: Okay. Thank you.

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1                   MR. MARSCHKE:     So, we owe the  
2                   Subcommittee a revised reply to this Issue 3?

3                   DR. ANIGSTEIN:    Correct. Correct.

4                   DR. MAURO:           And your  
5                   recommendation, given that -- given the new  
6                   words, language, is to close the issue? In  
7                   other words, in the end, I understand Issue 3,  
8                   you're comfortable that we could either  
9                   withdraw or close the issue, that this matter  
10                  of the spectrum really wasn't important?

11                  CHAIR MUNN:     Yes, that's what I  
12                  heard.

13                  DR. ANIGSTEIN:   Let me just go back  
14                  to the original statement.

15                  DR. MAURO:     Yes.

16                  DR. ANIGSTEIN:     The original  
17                  statement in our original report, the October  
18                  report which has review objective 1.3 -- "The  
19                  TIB is not clear on the methodology and  
20                  parameters assumed in the NIOSH Atilla  
21                  calculation." Important parameters, geometry,

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1 height were not included; source geometry were  
2 not included. And more exact input parameters  
3 were obtained in private communication.

4 So, it is now clear that the  
5 parameters are in the revised TIB. And,  
6 really, this issue did not deal with whether  
7 this photon spectrum is correct or not. I  
8 wrote that in in this summary because the  
9 response to it said the photon spectrum  
10 doesn't matter. So, the issue sort got  
11 expanded perhaps where it wasn't supposed to  
12 go.

13 DR. MAURO: Yes, Bob, right now I'm  
14 looking at Steve's email that he sent out, and  
15 I'm looking at TIB-13, No. 3.

16 DR. ANIGSTEIN: I know.

17 DR. MAURO: Okay. Good.

18 DR. ANIGSTEIN: But that's not what  
19 I'm talking about. What happened here was  
20 that this is a mixture of mixing the issues.  
21 This statement is not really part of, the

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1 discussion of the correct spectrum is really  
2 not part of Issue 3.

3 DR. MAURO: Oh, okay.

4 DR. ANIGSTEIN: Issue 3 was only,  
5 Review Objective 1.3 was really whether there  
6 was enough detail given in the TIB.

7 DR. MAURO: Okay.

8 DR. ANIGSTEIN: And the revised TIB  
9 does, in fact, have enough detail.

10 DR. MAURO: Okay.

11 CHAIR MUNN: So, the bottom line is  
12 we do not have an article for the journal of  
13 their reproducible results. We accept the  
14 information as being valid, and what we need  
15 is a corrected statement from SC&A with  
16 respect to Item No. 3 for TIB-13? And if we  
17 have that corrected statement, then we can  
18 change this item to closed?

19 Yes, Paul?

20 MEMBER ZIEMER: Just a request for  
21 John or Bob. This document that was

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1 distributed is undated. I don't know if it  
2 shows up in the system anywhere. But if it  
3 gets disattached from the email, which I often  
4 file these documents separately, I would  
5 appreciate having, on the next version, having  
6 a date on this document.

7 MR. MARSCHKE: Understood, Paul.  
8 The document, all the documents that were  
9 transmitted, that I transmitted yesterday, are  
10 more or less internal SC&A working documents.  
11 And, really, what I should be doing --

12 MEMBER ZIEMER: Yes, but when they  
13 come to us, I've got to do something with it.

14 MR. MARSCHKE: Yes.

15 MEMBER ZIEMER: It can easily  
16 lose --

17 MR. MARSCHKE: Understood. So, we  
18 will put the --

19 MEMBER ZIEMER: Yes. Yes, just  
20 identify it. Even if it's an internal  
21 document, you could put "Distributed to the

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1 Board on" a certain date.

2 MR. MARSCHKE: What we would  
3 anticipate doing is taking Bob's response here  
4 and putting it into the database.

5 MEMBER ZIEMER: Yes.

6 MR. MARSCHKE: And this document  
7 will disappear from the universe.

8 (Laughter.)

9 MEMBER ZIEMER: Well, it doesn't  
10 really. You should hope.

11 (Laughter.)

12 That's fine. It's just helpful --

13 MR. MARSCHKE: We will put, we will  
14 try to --

15 MEMBER ZIEMER: To always have  
16 dates on whatever it is we have.

17 MR. MARSCHKE: I will make up  
18 -- yes.

19 CHAIR MUNN: This item will carry  
20 over to our next meeting, just so that we can  
21 see SC&A's corrected rewrite of response to

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1 No. 3. At that time, we will close it. For  
2 the moment, it remains in abeyance.

3 The next item, Item 4.

4 DR. ANIGSTEIN: Yes, okay. Item 4  
5 and Item 6 are repetitive, simply because our  
6 procedures are such that the same issue fell  
7 into two different review objectives of our  
8 procedures. So, it was mentioned twice,  
9 actually. It was initially mentioned under  
10 2.2, but, then, in the statement in our  
11 official document, October 2007, it simply  
12 says, "See Review Objective 7.3," where it is  
13 discussed in greater detail.

14 And the main point that, and then  
15 if we skip over, if I may, I would like to  
16 skip over Issue 4 for a second because it  
17 really discusses this on 6. And the reason  
18 for the sequence would be Issue 5 partially  
19 should really be discussed first.

20 And Issue 5 refers to, now that we  
21 know what the geometry was, is it appropriate?

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1       And the answer is that, for two reasons, we  
2       find that the geometry needs to be either  
3       revised or justified.

4               One is the size of the worker.  
5       It's not clear, I honestly, by looking at the  
6       diagrams and trying to do -- some dimensions  
7       are given. Taking my ruler and scaling it, I  
8       found it hard to determine what the worker's  
9       height was. It stated in the report, though,  
10      that it's 6 feet. So, I will accept that.

11              And using the philosophy that we  
12      want to cover all workers, or at least the 95  
13      percent of the workers, 6 feet doesn't do it.

14      Six feet is not even the 90th percentile.  
15      The 90th percentile is 6 feet 1.6 inches, if  
16      you will, and the 95th percentile, because  
17      having the mean in the 90th percentile, we can  
18      derive the 95th, it would be 6 foot 3. So,  
19      that would be slightly more claimant-favorable  
20      because you could have workers that were that  
21      tall. That's not remarkable for an American

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1 male.

2 CHAIR MUNN: For that period,  
3 though, it is rather.

4 DR. ANIGSTEIN: Excuse me?

5 CHAIR MUNN: For that period, it is  
6 rather.

7 DR. ANIGSTEIN: I'm sorry?

8 CHAIR MUNN: I said, for the period  
9 that we look at, that is to say, the last half  
10 of the 20th century is essentially what we're  
11 looking at when we work here, and a 6 foot 3  
12 male was highly unusual.

13 DR. ANIGSTEIN: I see. Yes, well,  
14 the heights have increased. I was quoting a  
15 1987 document from the Department of Health  
16 and Human Services where it gave these  
17 statistics. So, again, if it was printed in  
18 1987, it was probably data collected in, say,  
19 the earlier 1980s. Again, we're talking about  
20 95th percentile, which, again, is already 1  
21 out of 20.

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1 DR. ULSH: So, if I understand  
2 correctly, we have said 6 foot 0, and you're  
3 saying it should be 6 foot 3, I think you  
4 said?

5 DR. ANIGSTEIN: Yes. And, then,  
6 the other is the position of the film badge,  
7 the assumed position of the film badge, is not  
8 really discussed. It is not really going into  
9 any anatomy or realistic photographs and  
10 saying, where would a film badge be worn? So,  
11 we say the film badge would be worn, here they  
12 have it in the middle of the chest. The  
13 reality is it could be worn on the lapel,  
14 which is off to one side, which, again, gives  
15 a little more distance.

16 It's simply not justified. It  
17 didn't say we took this diagram, we measured  
18 it, or we took a volunteer, a couple of staff  
19 members, and, you know, took some measurements  
20 with a tape measure, or however they wish to  
21 do it. It is just a given. It is not

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1 justified; it's not discussed.

2 And we feel it should be better  
3 documented and perhaps changed because I think  
4 the lapel, obviously, is to one side and not  
5 in the center. So that, again, gives a small,  
6 small but not necessarily negligible, effect.

7 So, these are the objections in 5,  
8 the geometry needs to be justified, explained.

9 Why do we take these values? How did we come  
10 up with it? Or, if there's not good  
11 justification or it should be rethought,  
12 repositioned --

13 CHAIR MUNN: Dr. Ziemer?

14 MEMBER ZIEMER: I have a question.

15 This is for NIOSH as a starting point. The  
16 assumption of 6 feet, were you assuming that  
17 that was a 95th percentile for a population?  
18 It's not clear to me that you're obligated to  
19 assume a 95th or any particular, 90th or 95th,  
20 in selecting that parameter, even though one  
21 might argue that geometries become more

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1 favorable. But, again, that also depends on  
2 where the source is compared to the individual  
3 as well.

4 MR. HINNEFELD: Yes.

5 MEMBER ZIEMER: So, there's a lot  
6 of other issues that come into play.

7 MR. HINNEFELD: Well, this really  
8 wasn't approached with that sort of rigor that  
9 we're going to choose the 95th percentile  
10 height because that will give us this bounding  
11 estimate.

12 MEMBER ZIEMER: Right.

13 MR. HINNEFELD: I guess you have to  
14 take a look at how's this going to change  
15 between -- you know, how does our adjustment  
16 factor change between 60 and 63, or whatever  
17 you choose.

18 To me, this is an adjustment for --  
19 certain specific geometries that were at  
20 Mallinckrodt. You know, there's a spill on  
21 the floor, so you have radiation from a spill

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1 on the floor. You have radiation from, I  
2 think, a machine, an ingot, and I don't even  
3 remember the third. I think maybe there were  
4 three.

5 And it was not recognizing that the  
6 workforce is going to vary from 5 feet tall to  
7 6 feet 8 probably because there would be women  
8 in the workforce, too, at some point. Because  
9 we're doing dose reconstructions right up to  
10 people working today, although Mallinckrodt  
11 finished up long ago. I don't know. Maybe  
12 we're not dealing with women.

13 But you're going to have this  
14 range. You know, what are you going to pick?

15 I guess we never really thought to go check  
16 the root or do the rigor of a 95th percentile.

17 We tried to present a representative number  
18 to make these adjustments to the film badge  
19 reading.

20 And I guess there's certainly an  
21 argument to be made for rigor and doing things

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1     like that, but, by and large, it was, well, a  
2     good point was raised that in a situation like  
3     Mallinckrodt there were a number of geometries  
4     that were perhaps different than your normal  
5     work geometry, and so what would that mean in  
6     terms of diagnoses?

7             Really, if the sources are low, it  
8     would be diagnoses to cancers in the lower  
9     part of the body, where you would have an  
10    upward adjustment on the film badge. I don't  
11    know that we would ever make a downward  
12    adjustment on a film badge based on the  
13    geometric consideration, you know, someone  
14    diagnosed in their head and having exposure on  
15    the floor.

16            So, it was not approached with that  
17    sort of rigor. That's just a fact.

18            CHAIR MUNN: Is it fair to request  
19    a response from NIOSH to this Item 5  
20    commentary from SC&A? Is what we are hearing  
21    a position that further explanation or further

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1 justification is called for? Is that what I'm  
2 hearing?

3 DR. ANIGSTEIN: Yes.

4 CHAIR MUNN: All right. Is it fair  
5 to ask for that from NIOSH?

6 MR. HINNEFELD: We can write  
7 something, sure.

8 CHAIR MUNN: All right.

9 DR. MAURO: This is John.

10 I just want to step back a little  
11 bit because, when I was reading this earlier,  
12 I noticed that there was a fairly large  
13 difference in the adjustment factor that we  
14 came up with and that NIOSH came up with.

15 DR. ANIGSTEIN: Oh, yes. John, I'm  
16 getting to that.

17 DR. MAURO: Well, yes.

18 DR. ANIGSTEIN: I just wanted to  
19 get the minor things out of the way first.

20 DR. MAURO: Yes. Quite frankly, I  
21 would be frank, I don't think this issue is

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1 important, you know, the 6'3 versus 6 feet,  
2 whether it's the lapel, the center of chest or  
3 the lapel.

4 It's unfortunate that we teased it  
5 out and we're going to issue, you know, one,  
6 two, three. The big picture is that we do  
7 have a substantial difference in terms of what  
8 the adjustment factor is, and I think we've  
9 got to go there.

10 DR. ANIGSTEIN: John, I was getting  
11 to that.

12 DR. MAURO: Oh, okay. Yes.

13 DR. ANIGSTEIN: I just wanted to  
14 get these out of the way. That's what I said;  
15 that would be No. 6.

16 DR. MAURO: Oh, okay. Yes.

17 DR. ANIGSTEIN: That's the  
18 significant, that's the big one.

19 DR. MAURO: Okay. Thank you.

20 CHAIR MUNN: This is the 3, 4, 6  
21 that we're talking about now, right? Items

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1 No. 3, No. 4, and No. 6 all essentially bear  
2 on the same issue you're about to address?

3 MR. HINNEFELD: Actually, 4 and 6.

4 CHAIR MUNN: Four and 6?

5 MR. MARSCHKE: And actually, in the  
6 database, we have already changed the status  
7 of Issue 6 to be addressed in Finding 4. So,  
8 we've kind of already acknowledged that these  
9 two or the Subcommittee has already  
10 acknowledged that these two issues are the  
11 same.

12 CHAIR MUNN: So, we can focus on 4?

13 MR. MARSCHKE: And we're saying  
14 focus on --

15 MR. HINNEFELD: Well, whichever  
16 one.

17 MR. MARSCHKE: Whichever one.

18 MR. HINNEFELD: It's the same  
19 finding. However you want to strike to it,  
20 whichever one.

21 DR. ANIGSTEIN: Steve, I just took

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1       5 first just to get it out of the way because  
2       it's minor.

3                   MR. MARSCHKE: Understood.

4                   DR. ANIGSTEIN: And, then, to focus  
5       on the major one.

6                   MR. MARSCHKE: Understood. But,  
7       right now, we're going to leave that as --  
8       well, it was in abeyance.

9                   DR. ANIGSTEIN: Yes.

10                  MR. MARSCHKE: I don't know why it  
11       was in abeyance. It should probably be in  
12       progress.

13                  MR. HINNEFELD: It should be in  
14       progress probably.

15                  MR. MARSCHKE: So, we'll change  
16       that from in abeyance back to in progress, and  
17       NIOSH will give us an expanded explanation as  
18       to 6 foot versus 6 foot 3 inches and/or the  
19       badge placement, their rationale for the  
20       selection of the badge placement. I believe  
21       those were the two main thrusts of your

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1 writeup, Bob.

2 CHAIR MUNN: All right. So, we  
3 have SC&A rewrites on No. 3 and No. 4.

4 MR. MARSCHKE: No. 5.

5 CHAIR MUNN: No. 5. No, No. 5 is  
6 NIOSH action.

7 MR. MARSCHKE: No. 5 is NIOSH  
8 action. No. 4 is, if you go back and look at  
9 the email that transmitted the revised TIB-13,  
10 there is no claim by NIOSH that the revision  
11 addressed Issues 4 or 6. So, the revision  
12 really did not address Issues 4 or 6.

13 So, that being said, what we were  
14 instructed to do at the July 26th meeting was  
15 the Subcommittee instructed SC&A to review the  
16 NIOSH initial response. And so, that's  
17 basically what Bob has done.

18 And so, I guess, with that, Bob,  
19 it's back to you.

20 DR. ANIGSTEIN: Okay. Okay, so  
21 going on to Issue 6, which is really the heart

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1 of the matter. The heart of the matter is  
2 that we get very, very different results.  
3 Perhaps NIOSH could explain. I'm not claiming  
4 that the Attila code is defective because we  
5 have no access to it. One of the comments we  
6 made the first time we ran across this in  
7 reviewing TIB-10, the glovebox workers is  
8 that, whereas MCNP is easily available, anyone  
9 can purchase it from RSICC, anyone who is not  
10 a foreign agent, and so forth, can purchase it  
11 from RSICC, and there are probably thousands  
12 of people in the United States who are  
13 familiar with it and can run it -- now an  
14 associate of ours, formerly with Los Alamos  
15 staff, Richard Olsher, gives a training course  
16 several times a year, including I think he  
17 even trained some the ORAU staff.

18           Whereas the Atilla code, we looked  
19 into it when we first ran across it, and it  
20 turns out that you can't even buy it; you have  
21 to license it, and the license costs \$30,000 a

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1 year. So, SC&A did not feel it was justified  
2 or reasonable for us to acquire that code.  
3 So, it certainly has a much more limited user  
4 base than MCNP. And the same for why NIOSH is  
5 using it; it has some conveniences.

6 So, we can't comment. We have not  
7 verified it. We have not seen the validation,  
8 V&V, verification and validation documents for  
9 Attila. So, we just have no way of judging  
10 it.

11 But we do have a way of judging it  
12 by doing these parallel cases. I am going to  
13 ask now, this ratio of -- I've got a question  
14 to NIOSH -- this is ratio of 2.125 for the  
15 lower torso to the lapel badge, does that  
16 consist of a ratio of doses at two points or  
17 was there a range of points and this  
18 represents some kind of an average?

19 MR. HINNEFELD: This is Stu  
20 Hinnefeld.

21 I don't know. Brant, I suppose you

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1 don't know, either?

2 DR. ULSH: No.

3 MR. HINNEFELD: Yes, our principal  
4 person isn't available today, on this document  
5 isn't available. So, we'll have to take the  
6 question back and learn more about it.

7 DR. ANIGSTEIN: It's a little risky  
8 to speculate, but I know that the first time  
9 we ran across the use of Attila in TIB-10,  
10 they did, in fact, and it's even one of the  
11 responses to our, you know, this back-and-  
12 forth that Steve distributed in this email.

13 It does talk about using the  
14 crystal ball, which is the Monte Carlo add-on  
15 to Excel, to use to get a range. You can do  
16 statistics. You get the average, the standard  
17 deviation, and so forth, any kind of statistic  
18 you want.

19 And the only reasonable explanation  
20 I can come up with why it is so different is  
21 that they simply took the doses at the

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1 position of various organs, some of which were  
2 near the ingot, some of which were further  
3 from the ingot, and took an average of those  
4 and compared that to the lapel badge. And I  
5 could see where they could come up with a  
6 ratio of two or a ratio of anything, depending  
7 on how the organs were chosen.

8 But what we picked was, taking the  
9 diagram furnished, originally furnished  
10 privately and now the same diagram appears in  
11 the revised TIB, and we took the point nearest  
12 to the ingot. This itself is about an inch or  
13 so air space. I'm going by memory. On the  
14 order of an inch. It would be a few  
15 centimeters.

16 And, then, we took the counts at  
17 two points. And the reason, the rationale for  
18 that would be that, after all, in the end, the  
19 NIOSH procedure, the OCAS one, I believe,  
20 procedure is to take assumed badge readings  
21 and assume, one of the assumptions, one of the

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1       inputs --       there       are       several       different  
2       possibilities, but Hp10 is one of them. You  
3       take Hp10 and say, okay, this is the dose;  
4       this is the Hp10 dose. Then, we're evaluating  
5       a cancer of the stomach.

6                       Then, you look up in the ICRP-74  
7       tables or at least there is sort of a summary  
8       of the ICRP-74, those conversions, those  
9       coefficients in OCAS-1, and say, okay, this is  
10      the multiplier. You take this reading or this  
11      dose estimate, if it's modeled, an exposure --  
12      one of these AWE sites where you don't have  
13      dosimeters, but we model exposures, and say,  
14      okay, this was the dose at the surface of the  
15      body. This is the organ affected. This is  
16      the ratio of the two. This is how we  
17      calculate the organ dose.

18                      Therefore, we need to say, since we  
19      don't know ahead of time, and the worker  
20      compensation claim does not come in with a  
21      range of, a distribution of organs. It comes

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1 in with specific organs. So, we have to take  
2 the organ that would have the highest dose.

3 We would take the point on the body  
4 and say, okay, this is the dose here. The  
5 organ dose is going to be calculated from  
6 that, but, in reality, we have measured it up  
7 here on the lapel and this is the ratio.

8 So, using the NIOSH geometry, we  
9 come up with 7.6 without deliberacy, not  
10 including any correction for the angular  
11 dependence of the film badge. If we do  
12 consider the angular dependence of the film  
13 badge, and it is somewhat a slightly different  
14 geometry with the lapel, but we still didn't  
15 put it in the higher for the worker, but we  
16 did displace the badge 10 centimeters to the  
17 side, we come up with 10.2. I think most of  
18 that effect is probably from the angle rather  
19 than from the additional displacement.

20 So, we come up with, say, a value  
21 of 10, and NIOSH has a value of 2. And that

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1 is really the whole gist of the matter. The  
2 others are minor or relatively minor issues.

3 MR. MARSCHKE: Bob, the NIOSH  
4 response, as I look at it here, one of the  
5 sentences that is in there says, "The TIB is  
6 vague on the issue of dose calculation and  
7 must be updated."

8 Now the revision of the TIB that we  
9 got did not indicate that it addressed Finding  
10 4 or Finding 6. So, I can only assume that it  
11 has not been updated.

12 DR. ANIGSTEIN: The numbers are  
13 identical.

14 MR. MARSCHKE: The numbers there  
15 are identical. So, basically, I'm not sure  
16 what NIOSH means when they say the TIB must be  
17 updated, whether it's the calculations must be  
18 updated or just the TIB itself must be made  
19 clearer to explain exactly what was done.

20 But, by looking at the initial  
21 NIOSH response, something is going to be

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1 updated here.

2 MR. HINNEFELD: Yes, and I guess  
3 I'm not in a position to know for sure when  
4 that's going to be. This is ours. This is a  
5 DCAS TIB. So, it's not like I can ask the  
6 ORAU people exactly what they are going to be  
7 doing because this is ours.

8 So, we will have to just provide it  
9 in our response. I mean we've got two, at  
10 least two unresolved findings, or is it three?  
11 I forget what happened to 5.

12 DR. ULSH: Four and 6, which are  
13 the same, I guess.

14 MR. HINNEFELD: Yes, 4 and 6 are  
15 the same.

16 DR. ULSH: And something you had to  
17 do on 5.

18 MR. HINNEFELD: I think we had to  
19 do something on 5. So, yes, those findings  
20 out there, we owe them a next round of  
21 discussion for them.

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1 MR. MARSCHKE: Okay.

2 DR. ANIGSTEIN: If I can issue an  
3 opinion, I think 4, 5, and 6 could probably be  
4 rolled into one.

5 CHAIR MUNN: Well, 5 is slightly  
6 different, but 4 and 6 --

7 DR. ANIGSTEIN: But 5 is  
8 explanation of the geometry, and 4 and 6 are  
9 the differences in the calculation.

10 CHAIR MUNN: Well, the Subcommittee  
11 has already put 4 and 6 together, in our view.

12 DR. ANIGSTEIN: Yes.

13 CHAIR MUNN: And one would be  
14 answered by the other.

15 So, what I am going to carry over  
16 for our next meeting is that SC&A is going to  
17 rewrite a response to No. 3, and NIOSH will  
18 respond to the SC&A concerns on No. 4 and No.  
19 5.

20 DR. ANIGSTEIN: Four and 6 are  
21 virtually, simply the same thing. Because of

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1 our procedure, we had to state them, we had to  
2 mention them twice.

3 CHAIR MUNN: And we have already  
4 indicated that angular dependence of  
5 dosimeters is an overarching issue and not  
6 going to --

7 DR. ANIGSTEIN: Yes, but even if  
8 you leave out the angular dependence, we still  
9 have the difference between 2.125 and 7.6.

10 CHAIR MUNN: I understand. That  
11 was just a superfluous comment on my part.

12 Dr. Ziemer?

13 MEMBER ZIEMER: I have a question,  
14 Bob. I haven't gone back to your original  
15 analysis to check this out, so maybe you have  
16 already covered it. But can you remind me, in  
17 your analysis, do you assume a point source --

18 DR. ANIGSTEIN: No.

19 MEMBER ZIEMER: No?

20 DR. ANIGSTEIN: It's identical  
21 geometry. It's from the same cylindrical

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1       ingot that is illustrated in the enclosed  
2       diagram.

3                   MEMBER ZIEMER:    Oh, okay.  And what  
4       distance is it from -- where's the ingot in  
5       that drawing?

6                   MR. HINNEFELD:     It's the circle  
7       right in front of the guy's --

8                   MEMBER ZIEMER:     Oh, it's right  
9       close in there.

10                  MR. HINNEFELD:     From this vantage  
11       we're looking at the end of the ingot.

12                  MR. MARSCHKE:     Bob, we're looking  
13       at the report and we're looking at figure 7.2,  
14       I mean 2.7.A-7, 2.7-1.

15                  DR. ANIGSTEIN:     Okay, and the  
16       distance here is, I think we scaled it.  At  
17       that time, it was a little hard to see, but we  
18       did our best to reproduce.  We started with  
19       that diagram, which had been furnished to us  
20       earlier by Greg Macievic, and we tried to  
21       represent this in the MCNP run.

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1                   So, the distance is, I would have  
2                   to --

3                   MEMBER ZIEMER:   So, basically, you  
4                   take the sphere or the cylinder and point-by-  
5                   point integrate the dose to the point of  
6                   interest?

7                   DR. ANIGSTEIN:   That's what MCNP  
8                   does.

9                   MEMBER ZIEMER:   Right.

10                  DR. ANIGSTEIN:   You tell it that  
11                  you have a uniform source --

12                  MEMBER ZIEMER:   Right. Okay.

13                  DR. ANIGSTEIN:   And it randomly  
14                  samples throughout the cylinder with some  
15                  biasing because the photons in the middle  
16                  really rarely get out.

17                  MEMBER ZIEMER:   Right. And, then,  
18                  for the film badges, it does the same thing,  
19                  but gives a value in air, I guess.

20                  DR. ANIGSTEIN:   Yes.    In both  
21                  cases, what we modeled was we used -- okay,

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1 what the MCNP actually calculates is simply  
2 the photon fluence. But this gives you  
3 photons as a function of energy. Then, the  
4 ICRP-74, there is a table, 8.21 perhaps or  
5 .22, which gives the conversion factors from  
6 the fluence -- it's a two-step process. They  
7 give the conversion factors from air kerma,  
8 but another table gives you the conversion  
9 factors of fluence in your kerma. So, we fold  
10 in the two sets, and we enter a set of  
11 conversion factors into MCNP, the MCNP  
12 profile, which takes each photon and converts  
13 it to a dose in picosieverts that correspond  
14 to the energy of that photon interpolated from  
15 the table that was taken from ICRP-74.

16 So, what we do is we collect, we  
17 calculate the doses at a point, a single  
18 point, to make it. Because you can't  
19 calculate the photon fluence at a point  
20 because it's that zero-plus section. So, what  
21 MCNP does, we can put into our entries. You

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1 take a little sphere --

2 MEMBER ZIEMER: Yes, that's fine.

3 That's fine.

4 Sort of intuitively, just looking  
5 at that diagram, I mean in both cases you got  
6 about the same absorption in the ingot.

7 DR. ANIGSTEIN: Yes, exactly.

8 MEMBER ZIEMER: And just looking at  
9 inverse-square kind of would tell you that a  
10 factor of two seems awfully low.

11 DR. ANIGSTEIN: Yes, but remember  
12 inverse -- inverse-square really applies only  
13 to a point.

14 MEMBER ZIEMER: Yes. Yes, of  
15 course. Of course, but --

16 DR. ANIGSTEIN: It falls off a  
17 little more slowly than inverse-square because  
18 you have an extended source. But it is low, I  
19 agree with you.

20 MR. MARSCHKE: I think Paul was  
21 agreeing with you.

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1                   MEMBER ZIEMER:    Well, I was just  
2                   saying, intuitively, if the badge is worn that  
3                   high, it just looks like a distance factor by  
4                   itself is going to change things quite a bit.

5                   CHAIR MUNN:    No, it's going to vary  
6                   from one individual to the next.

7                   MEMBER ZIEMER:    There's some other  
8                   issues in there, yes.

9                   CHAIR MUNN:    Lots of people wore  
10                  them on lanyards.

11                  MEMBER ZIEMER:    Right.

12                  MR. MARSCHKE:    I think we recognize  
13                  that there is a problem here, and NIOSH is  
14                  going to go back and look into it.

15                  DR. ANIGSTEIN:    And a point of  
16                  information, just with my hand calculator,  
17                  just by those two distance by inverse-square,  
18                  you get a factor of 10.

19                  MEMBER ZIEMER:    Right, right.

20                  DR. ANIGSTEIN:    And the reason it's  
21                  lower than that is because it's not a point

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1 source. So, it falls off a little more  
2 slowly.

3 MEMBER ZIEMER: Right. Right.

4 CHAIR MUNN: The responsibilities  
5 for responses haven't changed, though.

6 All right. Let's move on to our  
7 last item before lunch. We were going to --

8 DR. ANIGSTEIN: Wanda?

9 CHAIR MUNN: Yes?

10 DR. ANIGSTEIN: Could I ask you a  
11 question? Is there going to be a discussion  
12 of TIB-10 late in the afternoon?

13 CHAIR MUNN: We do not have TIB-10  
14 listed until our batch of carryover items, and  
15 our experience has been poor with getting to  
16 carryover items in the last couple of  
17 sessions. If our time permits us, yes, we  
18 will at about four o'clock take up TIB-10, but  
19 I'm not sure that we will get to that.

20 MR. MARSCHKE: The other question  
21 is I don't think we have received the MCNP

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1 runs. I mean that issue was we were going to  
2 look at some MCNP runs that NIOSH had made,  
3 and I don't think we've received them. So,  
4 when we get to it, I don't think anything is  
5 going to happen on TIB-10.

6 CHAIR MUNN: If you don't have the  
7 information you were going to look at, then,  
8 obviously, that's not going to happen.

9 MR. MARSCHKE: Unless those MCNP  
10 runs came in and I wasn't aware of them. That  
11 would be, basically, it is on the schedule,  
12 but there's nothing that is going to really  
13 happen on TIB-10. So, Bob, I think you are  
14 released.

15 DR. ANIGSTEIN: Thank you.

16 CHAIR MUNN: That's right.

17 MR. MARSCHKE: I think that's what  
18 you were trying to get at.

19 DR. ANIGSTEIN: Exactly.

20 CHAIR MUNN: Thank you, Bob.

21 DR. ANIGSTEIN: Okay. Thank you.

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1 CHAIR MUNN: Thanks, Bob.

2 Our last item was overarching  
3 issues. We talked about trying to identify  
4 what that list contains right now. And who  
5 has --

6 DR. ULSH: I'll take it, if you  
7 would like.

8 CHAIR MUNN: Oh, good. Thank you,  
9 Brant.

10 DR. ULSH: We do have Jim Neton on  
11 the line also. So, he will correct me or  
12 supplement what I say.

13 CHAIR MUNN: Good. It was our  
14 understanding that Jim was the keeper of the  
15 keys here.

16 DR. ULSH: Yes. He sent me some  
17 slides that he used the last time this issue  
18 was discussed. And there are a number of  
19 items that are currently identified as  
20 overarching dose reconstruction issues. I  
21 will go through these fairly quickly, and if

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1 you want to go into more detail, we can do  
2 that.

3 Currently, the list includes  
4 oronasal breathing, is the first one.  
5 Workplace ingestion is the next one. I'll  
6 give you a little time to write if you're  
7 keeping track. Doses from hot particles,  
8 nonstandard external exposures, thoriated  
9 welding rods, interpretation of unworn badges.

10 MEMBER ZIEMER: The welding rods  
11 were thoriated?

12 DR. ULSH: Thoriated. And, then,  
13 interpretation of unworn badges. Only two  
14 more. Material tracking and internal dose  
15 from Super S plutonium.

16 Now those are the issues that we're  
17 tracking. If there are others that are not on  
18 this list, we would certainly like to hear  
19 about it.

20 MR. HINNEFELD: Yes, I looked at --  
21 we had our TST run a query of findings that

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1       were transferred in the database in the  
2       procedures. And the ones that looked to me as  
3       if they are transferred to overarching issues  
4       are oronasal breathing and ingestion, two of  
5       the ones on the list.

6                       It remains to be seen, though, from  
7       dose reconstruction review. Some of you are  
8       on the Dose Reconstruction Review Subcommittee  
9       as well. I think there may be some things  
10      there, and we will need to do a search through  
11      those yet to see if there's anything else on  
12      there that we have not added to the list. So,  
13      we haven't completed that yet.

14                    CHAIR MUNN: Well, and we were just  
15      looking at what we were talking about, TIB-13,  
16      we were talking about geometry being an  
17      overarching issue. But don't we have a TIB  
18      that addresses --

19                    MR. HINNEFELD: Well, no, not the  
20      specific issue of angular dependence of a film  
21      badge. I mean that's kind of a broad issue as

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1 to whether -- because, as a general rule, we  
2 take that the film badge measures the dose at  
3 its location directly.

4 CHAIR MUNN: Yes.

5 MR. HINNEFELD: You know, we have  
6 kind of done that. We have kind of behaved  
7 that way.

8 If, in fact, you are concerned that  
9 angular dependence of that badge as it's worn,  
10 just in general -- you know, there are certain  
11 specific cases like Mallinckrodt where we've  
12 also come up with, in these specific cases, we  
13 have these adjustments we will make, and  
14 gloveboxes is another example we have made.

15 But just a general question that  
16 has come up in some dose reconstructions about  
17 certain kinds of situations, how do you know  
18 that a particular badge, interpreting that as  
19 normal instant radiation is the correct  
20 interpretation? Because there are radiation  
21 sources around in the workplace, sort of

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1 undefined, but you know that there are  
2 radiation sources around. So, is that normal  
3 incidence to the -- is that the correct  
4 assumption?

5 And the assumption that the  
6 dosimeter correctly measures the dose at its  
7 location, is that a correct assumption? That  
8 one we haven't really gone into yet, and we  
9 have not written anything about that.

10 To me, I grew up in the profession,  
11 and in the profession a film badge or a TLD,  
12 that's about what you can do. They're pretty  
13 good at measuring what they measure where they  
14 are. You've got to know their limitations,  
15 but they're pretty good at measuring where  
16 they are. That's how I grew up.

17 And most of us at DCAS are health  
18 physicists. So, that is kind of what we  
19 brought to it. And so, that's how we have  
20 always behaved.

21 So, to say that just as a general

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1 in many, many kind of situations -- when  
2 someone is working in any number of  
3 workplaces, that's not an appropriate  
4 assumption. That's something we have not  
5 talked about, and I don't really know where to  
6 go on that. That's almost philosophical.

7 I mean there's some technical  
8 things to cite. I think at one time we cited  
9 some research done by, it must have been IARC,  
10 about that, and IARC concluded that the badge  
11 reading was the appropriate, was the best  
12 estimate to use. So, that's just out there  
13 somewhere. I mean that's out there.

14 CHAIR MUNN: I strongly support  
15 that position, but the alternative concerns  
16 seem to come up on a regular basis. And as I  
17 just pointed out, we just said in 13 that it's  
18 a broader, overarching issue.

19 So, the question is, does film  
20 badge geometry fall into the category of one  
21 of those issues that --

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1                   MR. HINNEFELD:    Well, I think it  
2                   probably does, and that's one of the things, I  
3                   think it comes out of dose reconstruction. I  
4                   think it may come up in a couple of other Site  
5                   Profile and Evaluation Report reviews as well.

6                   CHAIR MUNN:    I suspect it has. But  
7                   is it the recommendation, should we recommend  
8                   that it be added to the -- since we have  
9                   encountered it on several occasions here in  
10                  this --

11                  MEMBER ZIEMER:   Well, the geometry  
12                  issue that they're dealing with in 13 has to  
13                  do with the factor that is used to distinguish  
14                  between the chest and organ of interest.

15                  MR. HINNEFELD:    Right.

16                  MEMBER ZIEMER:    Which is different  
17                  than angular dependence.

18                  MR. HINNEFELD:    Right. Right.

19                  CHAIR    MUNN:            That's different  
20                  than --

21                  MEMBER   ZIEMER:            I think you're

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1 talking about angular dependence.

2 MR. HINNEFELD: I'm talking about  
3 angular dependence.

4 CHAIR MUNN: Yes, and so am I, yes.

5 MEMBER ZIEMER: But I don't know  
6 what we do with angular dependence.

7 Where do we stand on these  
8 resuspension factors? I know we've  
9 transferred those from some individual cases  
10 to this group as an overarching issue.

11 MR. MARSCHKE: We're going to be  
12 discussing resuspension factors probably when  
13 we get into OTIB-70 this afternoon. I don't  
14 know if you want to --

15 MR. HINNEFELD: Yes, and it's come  
16 up other places as well, although 70 is a good  
17 place to kind of look at it because that's a  
18 common -- you know, because OTIB-70 is dose  
19 reconstruction from residual periods when  
20 you've got contamination or some measure, some  
21 way to estimate in a residual period when --

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1                   MEMBER ZIEMER: We have had a lot  
2 of individual cases where there have been  
3 resuspension factor issues.

4                   MR. HINNEFELD: Yes.

5                   MEMBER ZIEMER: And we are tending  
6 to move them into this one. Does that qualify  
7 as overarching or --

8                   MR. HINNEFELD: Well, it could very  
9 well. We'll see how our discussion goes this  
10 afternoon. And, then, I will have to go back  
11 to those cases and see how they play out, if  
12 they are, in fact, residual. If they are the  
13 kinds of cases that would be covered by  
14 OTIB-70, then resolving them in 70 would be  
15 resolving those. If they are other  
16 applications where resuspension was used, other  
17 than -- so, in dose reconstruction, we used  
18 resuspension, but we wouldn't have used OTIB-70  
19 to do that dose reconstruction. Then, in that  
20 case, it may be some other reason to carry it  
21 farther than OTIB-70.

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1 DR. NETON: Yes, this is Jim.

2 I think OTIB-70 would cover almost  
3 all cases of resuspension factors.

4 CHAIR MUNN: Good.

5 MR. HINNEFELD: Good.

6 DR. NETON: I can't think of an  
7 instance where it wouldn't. And what happens  
8 with a lot of these things is they get listed  
9 as overarching issues, but at the end of the  
10 day, what typically happens is it becomes a  
11 site-specific issue at the end of the day  
12 because all sites are different.

13 In fact, if you look at SC&A's  
14 comments on TIB-70, that's kind of where they  
15 end up, is there's no unique resuspension  
16 factor that can be applied across the complex.

17 DR. MAURO: Yes, I would like to  
18 say our thinking, especially for the residual  
19 period, OTIB-70 -- this is John Mauro --  
20 applies, has matured. And I think we should  
21 have an interesting discussion. And we're

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1 going to resolve, I believe, some of the  
2 discussions related to resuspension factor  
3 that have come up, especially as it applies to  
4 the residual period. We will be talking about  
5 that. It's going to be interesting.

6 CHAIR MUNN: Yes, hopefully, we  
7 will have a good discussion first thing this  
8 afternoon.

9 In the meantime, Jim, as long as  
10 you're there, what are your thoughts on the  
11 angular angle --

12 MEMBER ZIEMER: The angular angle?

13 (Laughter.)

14 CHAIR MUNN: Yes, angular angle.  
15 The angular film badge issue?

16 DR. NETON: I think it's something  
17 that we need to address. Stu correctly  
18 summarized where we are with that. I mean  
19 it's been brought up in a few instances.

20 I vaguely recall addressing this in  
21 some Working Group meetings a while ago, but I

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1 would have to go back and pull out what, of  
2 course.

3 But I do think it is something that  
4 needs to be addressed in one way or another.  
5 Whether it ends up becoming a policy issue or  
6 a science issue, I'm not sure at this point.

7 CHAIR MUNN: Well, I'm not sure,  
8 either. I guess my real question to you is  
9 whether you feel it should be on your list of  
10 overarching issues at this moment.

11 DR. NETON: Yes, I think it could  
12 be. It may actually fall as a subcategory of  
13 nonstandard external exposure.

14 CHAIR MUNN: Yes, it could easily.

15 DR. NETON: That would include both  
16 the -- that's sort of what Bob did in his  
17 review of TIB-13 I was listening to. It  
18 included both the exposure geometry and the  
19 angular dependence of the badge.

20 CHAIR MUNN: If we can make the  
21 assumption that angular dependence is going to

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1       become a subcategory of that nonstandard  
2       external, then I think we can put our concerns  
3       to rest with respect to whether it needs to be  
4       as a separate issue on the list.

5                       I'm certainly content with that.  
6       What's the feeling of other Board Members?

7                       MEMBER ZIEMER:       Yes, it makes  
8       sense.

9                       MEMBER LEMEN:    That's fine.

10                      CHAIR MUNN:     Mike, are you all  
11       right with that?

12                      (No response.)

13                      Mark, are you all right with that?

14                      MEMBER GRIFFON:   Wanda, I'm sorry.  
15       I just stepped back in. I missed --

16                      MEMBER LEMEN:    Just say you're okay  
17       with it.

18                      CHAIR MUNN:     Yes.

19                      MEMBER GRIFFON:   I'm okay with it.

20                      (Laughter.)

21                      MEMBER ZIEMER:    Whatever it is.

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1                   MEMBER    GRIFFON:           Was    that  
2    announcing that we're going to lunch?    I'm  
3    okay with it.

4                   (Laughter.)

5                   CHAIR MUNN:    Yes, that was my very  
6    next statement.

7                   No, we had just gone through the  
8    list of currently listed overarching issues,  
9    one of which is nonstandard external exposure.  
10    We had been discussing whether or not angular  
11    dependence of the placement of film badge was  
12    a separate issue, and we had just here around  
13    this table pretty much come to the conclusion  
14    that it is a legitimate subcategory of the  
15    existing    nonstandard    external    exposure  
16    listing.

17                  MEMBER    GRIFFON:    Then I am okay  
18    with that.

19                  CHAIR MUNN:    All right.    Very good.  
20                  That being the case, does anyone  
21    else have any comment, any question, anything

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1 to add to this discussion?

2 (No response.)

3 If not, we are adjourned for lunch.

4 We'll be back here at 1:30.

5 MEMBER GRIFFON: Thank you.

6 MR. KATZ: Thanks, everyone on the  
7 line.

8 (Whereupon, the foregoing matter  
9 went off the record for lunch at 12:23 p.m.  
10 and went back on the record at 1:31 p.m.)

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1 I guess the other person we're  
2 interested in is Dr. Lipsztein. Is she  
3 available?

4 MR. MARSCHKE: Well, what are we --

5 DR. MAURO: I just spoke with her.

6 I told her she could join us at 1:30. Good.

7 So, she may be calling in. But, at a  
8 minimum, she guaranteed she would be here at  
9 3:30. So, I just emailed her. I asked if she  
10 could join us at 1:30. That would be great.  
11 But, right now, I left it to her. She  
12 definitely is on at 3:30, though.

13 MR. KATZ: Great. Thank you, John.

14 DR. MAURO: Okay.

15 CHAIR MUNN: We appreciate that.

16 OTIB-70, I believe the ball is in  
17 SC&A's court, is it not?

18 MR. MARSCHKE: Yes. We received  
19 NIOSH's initial responses on OTIB-70, and we  
20 have loaded up into the database our replies  
21 to those initial responses as well as there

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1 was a file, again, in the email that I sent  
2 yesterday, there was a file which has the same  
3 issue history, OTIB-70 issue history, as is in  
4 the database. So, you can either follow along  
5 with the Word file or you can follow along  
6 with the database, whichever is more  
7 convenient.

8 I guess the question is --

9 CHAIR MUNN: The first item that  
10 was shown on the material that was just sent  
11 to us is OTIB-70-01-17.

12 MR. MARSCHKE: I don't see where  
13 you're reading the 17.

14 CHAIR MUNN: Oh, from the material  
15 that was --

16 MR. MARSCHKE: Oh, okay, 17 down,  
17 that's the page number.

18 DR. ULSH: Wait. I don't think  
19 you're looking at the same thing. This is  
20 what Steve sent out yesterday.

21 CHAIR MUNN: Yes, yesterday's stuff

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1 I don't have. Yes.

2 MEMBER LEMEN: You want the stuff  
3 that you sent out yesterday, right, Steve?

4 MR. MARSCHKE: That was the stuff  
5 that I was reading. That's what I was  
6 thinking about. And what you've got, yes,  
7 okay, this is OTIB -- the 17 is the page  
8 number.

9 CHAIR MUNN: Yes.

10 MR. MARSCHKE: Okay?

11 CHAIR MUNN: From the OTIB.

12 MR. MARSCHKE: Okay.

13 MEMBER LEMEN: I should have it  
14 myself.

15 MR. MARSCHKE: What you're looking  
16 at, Wanda, probably does not have the SC&A  
17 reply.

18 CHAIR MUNN: No, but did I just  
19 hear you say that you loaded those?

20 MR. MARSCHKE: Yes, they are in the  
21 database.

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1 CHAIR MUNN: Then, there's no  
2 problem.

3 MR. MARSCHKE: If you can get into  
4 the database, you can see them.

5 CHAIR MUNN: They're there.

6 MEMBER LEMEN: It was in what you  
7 sent out yesterday?

8 MR. MARSCHKE: Yes, the file's name  
9 is ORAU- --

10 MEMBER LEMEN: I found it. I've  
11 got it.

12 MR. MARSCHKE: Okay.

13 MEMBER LEMEN: I just have to open  
14 it now. Got it.

15 MR. MARSCHKE: Okay. How do you  
16 want to proceed, Wanda? Do you want to read  
17 the issues and --

18 CHAIR MUNN: I think what we need  
19 to do is read the issue and, then, your  
20 current response where we are. I don't think  
21 the material in between is necessary, unless

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1 someone wants to hear it or does not have it  
2 on their screen.

3 MR. MARSCHKE: Okay.

4 CHAIR MUNN: But if we have the  
5 initial finding and, then, your most recent  
6 response?

7 MR. MARSCHKE: Finding 1 is, "The  
8 most obvious fault concerning the default  
9 value of the 1 percent per day source term  
10 depletion as derived above is the use of a  
11 resuspension factor of 8 to the minus 5th per  
12 meter. This value is near a two orders of  
13 magnitude higher than NIOSH's recommended  
14 resuspension factor of  $1e-06$  per meter."

15 If we jump down to the most current  
16 SC&A response, we say, "Part of the problem is  
17 that adequate justification of the 1 percent  
18 per day factor is lacking. NIOSH states in  
19 Section 2.6 that the assumption of a 1 percent  
20 per day source depletion factor (consistent  
21 with research summarized in Section 2.5

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1 above), if one looks at Section 2.5, the only  
2 justification for the 1 percent per day is an  
3 equation developed by Linsley, who quotes a  
4 factor of 1 percent per day for the decrease  
5 in the resuspension factor with time, not the  
6 decrease in the source term.

7 "Elsewhere in OTIB-70, the factor  
8 of 1 percent per day refers to source term  
9 depletion based on a time-independent  
10 resuspension factor. It should be noted that  
11 the work of Linsley was based on outdoor  
12 measurements, and that the extension of  
13 outdoor conditions to indoor is  
14 scientifically-questionable.

15 "In Section 2.6, NIOSH presents the  
16 following equation for source term decay due  
17 to ventilation in a work area.  $\Lambda$  equals  
18  $24KnH/\text{day}$  where  $\lambda$  is the decay constant,  
19 decay is the resuspension factor per meter,  $H$   
20 is the room height in meters, and  $n$  is the air  
21 turnover rate per hour.

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1                   "For illustrative purposes, we  
2           assume that there H is 5 meters and N is 1 per  
3           hour. We believe that these are reasonable  
4           rates for an industrial setting with no forced  
5           ventilation. If the resuspension rate, rather  
6           than the resuspension factor, is available,  
7           then lambda equals 24f per day, where f is the  
8           resuspension rate.

9                   "We note that, while K could be  
10          time-dependent, as suggested in 2.5 of  
11          OTIB-70, throughout the balance of the  
12          document K is assumed to be time-independent.

13          We also note that NRPB-W1, Calculation of  
14          Resuspension Doses for Emergency Response,  
15          Walsh, 2002, recommends, 'a time-independent  
16          resuspension factor' for indoor situations.

17                   "Assuming that the 1 percent per  
18          day factor for source term depletion is  
19          scientifically-supported (which we do not  
20          believe was done in OTIB-70), the fundamental  
21          approach is flawed. The problem is that the

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1 value, 1 percent per day, cited in Section 2.6  
2 of OTIB-70 does not match the resuspension  
3 factor of  $1e-06$  per meter. If, for example,  
4 one was to apply Method 5 in Table 4-1 of  
5 OTIB-70, one should use a resuspension factor  
6 of  $5E-5$  per meter and a decay constant of 1  
7 percent per day or a resuspension factor of  
8  $1e-06$  per meter and a decay constant of .012  
9 percent per day.

10 "It would seem that, in cases where  
11 the resuspension factor plays a role (i.e.,  
12 Methods 2, 4, and 5), one option would be to  
13 evaluate the resuspension factor on a case-  
14 specific basis and select an appropriate value  
15 based on the site circumstances. For example,  
16 if cleanup had occurred at the end of  
17 operation, then the use of a factor of  $1e-06$   
18 per meter would be appropriate. One would  
19 then calculate a decay constant consistent  
20 with the assumed resuspension factor.

21 "If the objective of OTIB-70 is to

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1 provide a bounding claimant-favorable  
2 approach, it is not possible to select a  
3 single combination of resuspension factors and  
4 decay constants that would always be limiting.

5 For an AWE worker who was employed at the  
6 beginning of the residual period, use of a  
7 resuspension factor of  $8E-5$  per meter and a  
8 decay constant of 1 percent per day would be  
9 the appropriate parameter set, since within  
10 the first year the source term would have been  
11 depleted and the worker's exposure would be  
12 maximized. However, if the worker's  
13 employment began after the first year  
14 following cessation of operations, then use of  
15 a resuspension factor of  $1e-06$  per meter and a  
16 decay constant of .012 percent would be  
17 limiting since the source term would not be  
18 depleted for about 23 years.

19 "If it is not possible to estimate  
20 the resuspension factor on a case-specific  
21 basis, an alternative approach to the problem

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1       could be to assume that a resuspension factor  
2       of either  $1e-06$  per meter or  $1e-04$  per meter,  
3       and calculate lambda using the equation cited  
4       above, applying situation-appropriate values  
5       for H and n based on the employee's work  
6       history relative to the residual period, one  
7       could determine which resuspension factor was  
8       limiting and use that factor in a dose  
9       reconstruction calculation."

10               CHAIR MUNN: Steve, my apologies to  
11       you. I didn't realize when I said, "Would you  
12       please read it" that it was going to be that  
13       long. I could just have easily have read it  
14       and saved your breath, for goodness' sake.

15               (Laughter.)

16               MR. MARSCHKE: I'm going to have a  
17       drink of water.

18               CHAIR MUNN: Yes, I think it's a  
19       good idea for you to have a drink of water.

20               This is information that has just  
21       been received. And whether or not NIOSH has

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1 anything to say at this juncture, without  
2 having absorbed that, I don't know.

3 MR. HINNEFELD: I'm not sure I  
4 understood it.

5 CHAIR MUNN: It was pretty thick  
6 there.

7 MR. HINNEFELD: Is there a linkage  
8 here, an assumed linkage, between the  
9 resuspension factor and the removal rate? Is  
10 that right?

11 MR. MARSCHKE: No, the removal rate  
12 works on the source term.

13 MR. HINNEFELD: On the source term?

14 MR. MARSCHKE: Yes, and the  
15 resuspension factor remains --

16 MR. HINNEFELD: Just fixed?

17 MR. MARSCHKE: -- fixed.

18 MR. HINNEFELD: Okay.

19 DR. MAURO: Is Bill Thurber on the  
20 line?

21 MR. THURBER: Yes, he is.

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1 DR. MAURO: Yes, Bill, I know,  
2 Steve, you read through it, but, you know,  
3 when you read through it, there's a story in  
4 here. Our thinking regarding resuspension  
5 factors and OTIB-70 and the different  
6 strategies that are laid out, this is sort of  
7 like another way to look at this thing.

8 Quite frankly, we think that maybe,  
9 when you look at OTIB-70 -- stay with me for a  
10 minute; stay with me for a minute -- because  
11 it's important to step back first and take the  
12 whole thing in. It's an important OTIB and  
13 one that we are very favorably inclined, but  
14 we do have certain concerns.

15 In the big picture, and after I  
16 give my introduction, I'm going to ask Bill to  
17 go into the specific issue. But in the grand  
18 scheme of things, in the residual period, when  
19 NIOSH uses OTIB-70, they usually apply the  
20 approach where they take a dust loading that  
21 was observed at the end of the operation or

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1 decontamination period and use that as the  
2 beginning of the residual period. That sort  
3 of places an upper bound on what the  
4 concentration might be in the beginning of the  
5 residual period if you had no air-sampling  
6 data. It certainly would be an upper bound  
7 from the beginning.

8           And very often, NIOSH has access to  
9 data which was collected during the FUSRAP  
10 program, which could be 20, 30, 40 years  
11 later. And that's the only real data you have  
12 during the residual period.

13           So, in order to place a plausible  
14 upper bound, the approach that OTIB-70 adopts,  
15 I would say this is the really time/area  
16 approach. It is to basically draw an  
17 exponential line from the high-end number at  
18 the beginning of the residual period that's  
19 really based on measured values during  
20 operations and go down exponentially to the  
21 concentrations that were observed much later

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1 when the FUSRAP program, where they took some  
2 dust measurements.

3 And this is the basic approach that  
4 has been adopted, for example, on Linde and  
5 other locations where we support that  
6 approach. But that's just one of, I think,  
7 six or seven approaches to coming at the  
8 residual period that's laid out in OTIB-70.

9 And it basically leaves the door  
10 open to the dose reconstructor on which of the  
11 six or seven different strategies will be  
12 used, depending on the data that is or is not  
13 available to the dose reconstructor.

14 So, this first method I just  
15 described is the method that, quite frankly,  
16 is used most of the time. And we're very  
17 supportive of it.

18 But now, if you're not going to use  
19 that approach and you start to go to these  
20 other approaches where, for example, the 1  
21 percent per day comes in, or we are talking

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1 about using a resuspension factor. You notice  
2 in the first approach, the one I just  
3 described earlier, there's no resuspension  
4 factor. You don't need one. You have  
5 measured values and you just interpolate.

6 But when you are going to resort to  
7 a resuspension factor approach and a declining  
8 airborne activity without the 1 percent per  
9 day number, we have a problem with the  
10 methods, these other methods. And in effect,  
11 the writeup that you have before you tells the  
12 story of how we think you could come at this  
13 problem when you don't use the interpolation.

14 We'll call the first one the interpolation  
15 approach, which is what I would call the  
16 preferred approach. But if you don't have the  
17 information you need to do that, what we just  
18 read was the approach that we think can be  
19 used, which really would replace the other  
20 methods that you described in OTIB-70. We  
21 feel there's some problems with it.

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1                   With that, I don't know, but, Bill,  
2           maybe you want to explain conceptually the  
3           difference between the methods that are  
4           adopted in OTIB-70 and why we have problems  
5           with it and this other strategy that is sort  
6           of laid out here that Steve effectively just  
7           read to us. But, you know, there is really a  
8           picture here that has to take form, and I  
9           think it's important.

10                   DR. NETON: John, this is Jim. Can  
11           I say something before Bill starts in?

12                   DR. MAURO: Sure, sure.

13                   DR. NETON: Yes, I think you hit  
14           the nail on the head. I mean we have to sort  
15           of look at what TIB-70 was designed to do, and  
16           that was to give the dose reconstructors sort  
17           of a toolbox as to how to approach the  
18           residual period. It's actually not the dose  
19           reconstructors, but the people writing the  
20           reports, the Site Profiles and such.

21                   And you're right, the gold standard

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1 at least is to have an operational dose,  
2 operational air samples, followed by some sort  
3 of a measurement down in the residual period  
4 that you can extrapolate between.

5 But the other methods are there to  
6 fill in the gaps when information is lacking.

7 I think maybe part of the issue is the  
8 resuspension factors that are listed in there  
9 need to be defined a little better. Like this  
10 one times ten to the minus six, a big deal has  
11 been made of it, although I think you stated  
12 that you would agree that one times ten to the  
13 minus six would either be appropriate for  
14 facilities that had been cleaned up or what we  
15 would call a quiescent condition.

16 DR. MAURO: Yes.

17 DR. NETON: Nothing going on in  
18 them.

19 DR. MAURO: Right, and by the way,  
20 Wanda and the rest of the Subcommittee, this  
21 is an important maturation of thought on our

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1 part. You know, we have been troubled for a  
2 long time by the ten to the minus six. And  
3 the reason for that is in most contexts where  
4 we engaged on this matter it was during  
5 operations, and the question was, if you have  
6 some residual -- we have a lot of dust, a lot  
7 of uranium, bottom line.

8 If you're in a facility with a lot  
9 of uranium on surfaces that you could see it,  
10 and there are people walking around and  
11 working in it, well, in those circumstances  
12 the ten to the minus six is not a good number.

13 It's something like ten to the minus five to  
14 maybe even ten to the minus four. And there's  
15 lots of literature on that.

16 However, it's very important to  
17 point out, though, if the site has been  
18 cleaned up, if you're in the residual period,  
19 you went through a cleanup, and you really got  
20 rid of as much of the contamination that you  
21 could, and you're really left with a place

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1 that's fairly clean, well, then, that's when  
2 the ten to the minus six starts to make sense.

3 In fact, the Nuclear Regulatory  
4 Commission recommends ten to the minus six for  
5 use at sites after they have been cleaned up  
6 because you have removed most of the  
7 removable, the stuff that's going to be  
8 readily resuspended. So, we agree that ten to  
9 the minus six would be a good value when the  
10 surfaces have been well cleaned up, but not  
11 when it is contaminated.

12 But, then, we move on to this other  
13 matter of the rate at which that airborne  
14 activity declines. And, Bill, the logic  
15 behind linking the resuspension factor with  
16 the rate of decline is what really is the new  
17 twist that we have introduced here, which is a  
18 lot different than the approach that NIOSH is  
19 recommending as the alternative approach to  
20 the extrapolation method.

21 DR. H. BEHLING: John, can I

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1 interrupt you?

2 DR. MAURO: Sure.

3 DR. H. BEHLING: I think we need to  
4 recognize that OTIB-70 really represents seven  
5 different discrete methods for doing a dose  
6 assessment or exposure assessment. And those  
7 are Methods 1 through 7, and they are all  
8 based on the availability of data.

9 DR. MAURO: Right.

10 DR. H. BEHLING: As you mentioned,  
11 Method 1 is based on the availability of air  
12 sampling during operational time periods and  
13 the availability of air sampling during post-  
14 operational. Now, as OTIB-70, obviously,  
15 states clearly, that is not always, this  
16 preferred method is not always available  
17 because the data isn't available.

18 So, there's no question that, if  
19 the operational and post-operational period  
20 had significant amounts of air-sampling data,  
21 that would be used. The truth is, obviously,

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1 Method No. 2, which says we only have  
2 operational air-sampling data, but there's  
3 nothing during the post-operational period on  
4 which we can hang our hat on, this is where  
5 the 1 percent comes into play --

6 DR. MAURO: Yes.

7 DR. H. BEHLING: -- where you  
8 artificially decide what that number could be.

9 In terms of No. 3, you have no  
10 operational air-sampling data, but you only  
11 have post-operational. So, the choice of  
12 methods among the seven is driven by the  
13 availability of data. It's not a choice,  
14 John.

15 DR. MAURO: Right, but, then, I  
16 think the concern we have, though, is when you  
17 move into one of these other approaches where  
18 you have limited data, and you start to use a  
19 resuspension factor, and also maybe some rate  
20 at which that airborne activity might decline,  
21 that's what this piece that you just read is.

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1 Well, how do you do that?

2 DR. H. BEHLING: Yes, John. John,  
3 I realize this, and this is exactly why the  
4 findings exist.

5 DR. MAURO: Yes.

6 DR. H. BEHLING: I'm the author, by  
7 the way, of the final report.

8 DR. MAURO: Right.

9 DR. H. BEHLING: So, I'm very  
10 familiar with it, and I do have to raise the  
11 question about the 1 percent per day depletion  
12 rate because it's an unrealistic number.

13 If anyone has ever worked in a  
14 facility where you deal with contamination,  
15 flow contamination or any other contamination,  
16 for instance, a nuclear power plant, you  
17 realize the contamination on the floor just  
18 because you shut down the reactor or even  
19 removed all of the radioactivity within the  
20 reactor core, and you're left with a  
21 contamination level on the floors within the

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1 reactor building or elsewhere, it does not  
2 remove at 1 percent per day. Otherwise,  
3 decommissioning of a reactor facility would  
4 simply mean having people walk around after  
5 the reactor shuts down for a period of a few  
6 months, and you would be decommissioned. That  
7 is not the case.

8 So, our whole issue here of the 1  
9 percent is based on a resuspension rate that,  
10 furthermore, assumes that once it's airborne  
11 and you have a ventilation system working, it  
12 is 100 percent removed, and it is not.

13 DR. MAURO: Right.

14 DR. H. BEHLING: We clearly have to  
15 come to that conclusion that the 1 percent per  
16 day is not a supportable value that is based  
17 on realistic or empirical data.

18 And in fact, in my review, on page  
19 17 of my review, I cite the issue of the Dow  
20 Chemical Company. Actually, no, it's not.  
21 Page 15. Where we do have, in fact, some

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1 monitoring data during the operational and  
2 post-operational period. And I ended up  
3 devising an empirically-derived depletion  
4 factor that is a factor of 37 times lower.

5 And so, again, if you look at this  
6 as an example, you realize that the depletion  
7 factor of 1 percent per day simply doesn't  
8 hold up in the real world.

9 MEMBER ZIEMER: Where did the 1  
10 percent come from as a starting point? Was  
11 that out of a literature source?

12 DR. H. BEHLING: Yes. In fact, I  
13 quote one of them, which is really Finding No.  
14 2, and it's based on a study of 1971 by Healy.

15 And he talks about a residential facility, a  
16 house or an apartment from outdoor  
17 contamination. I even quoted it in my report,  
18 and he provides the following statement:

19 "For estimating the quantity of  
20 materials affected, it was assumed that 30  
21 percent of the material brought in per day was

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1 transferred to the residential indoor living  
2 area, and that it remained in a resuspendable  
3 form with a half-life of one week, with lambda  
4 being 0.1 per day."

5 And he says, "Again, there are no  
6 data to indicate the order of magnitude for  
7 this effect and the seven-day trigger for the  
8 half-life was arbitrarily chosen."

9 So, as far as I'm concerned, if  
10 this was the basis for coming up with the 1  
11 percent, it is a very whimsical, if not  
12 ludicrous, method by which one could justify  
13 this value.

14 DR. MAURO: A good way to think  
15 about it, what convinced me about this issue  
16 is, in order for you to have 1 percent per  
17 day, and this is the writeup that you're  
18 looking at, if you were to have eight times  
19 ten to the minus five, a resuspension factor,  
20 ten to the minus four -- that's a fairly high  
21 resuspension factor, something that would

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1 occur when you have lots of loose  
2 contamination on surfaces. And if that is  
3 what your resuspension factor is, and you have  
4 an air turnover rate of 1 per hour, then you  
5 could get 1 percent per day.

6 So, if you have a very high  
7 resuspension factor because there's a lot of  
8 loose contamination, certainly not ten to the  
9 minus six, but something closer to ten to the  
10 minus four, and then you had a ventilation  
11 system operating on that material as it became  
12 airborne, so you're holding that eight times  
13 ten to the minus four resuspension factor and  
14 it was continually coming up, so that you  
15 always have one times ten to the minus four  
16 resuspension factor, then that means the air,  
17 and if you had a 1 per hour air turnover rate,  
18 which is a typical air turnover rate, you  
19 could get 1 percent per day. And that's what  
20 this writeup says.

21 But you certainly can't get 1

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1 percent per day if you've got a resuspension  
2 factor of ten to the minus six.

3 MR. MARSCHKE: And that factor,  
4 that percent factor that you calculate using  
5 that methodology that John just described, it  
6 really is a source term reduction factor as  
7 opposed to reducing the resuspension factor.

8 The other area where the 1 percent  
9 per day comes from is this equation by  
10 Linsley, 1978. You can see in the exponential  
11 term here he's got .01 times T, which is  
12 really .01 is 1 percent per day.

13 DR. MAURO: That is environmental,  
14 though.

15 MR. MARSCHKE: That's an external,  
16 that's outside, yes.

17 DR. MAURO: Outside, yes.

18 MR. MARSCHKE: That's outside.

19 DR. MAURO: See, that's important,  
20 yes, because the way in which --

21 MR. THURBER: But, John, that's

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1 not --

2 DR. MAURO: Yes. Well, okay, help  
3 me out, sure. If I'm --

4 MR. THURBER: Their 1 percent per  
5 day was the change in the resuspension factor  
6 with time. That was not 1 percent per day  
7 reduction in the source term for time.

8 So, as we pointed out in what Steve  
9 read for us all, and supporting what Hans  
10 said, there's no good basis for the 1 percent  
11 per day. In this particular case, we're  
12 talking about now, that was the change in the  
13 resuspension factor with time. And in the  
14 other example which Hans mentioned, it was a  
15 number that the author used as a demonstration  
16 calculation, in my view, without any  
17 particular scientific basis for it.

18 So, the 1 percent number is not  
19 well-justified. But I think the key point in  
20 this discussion here is that, if you are going  
21 to use the approach that NIOSH did, that you

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1 have to properly link the resuspension factor  
2 you use and support it, technically justify  
3 it, and use a decay rate that is consistent  
4 with that, a source term decay rate that is  
5 consistent with that.

6 DR. NETON: This is Jim.

7 I think we would agree with that.  
8 I mean the only two of the scenarios, I think,  
9 that this 1 percent per day applies, out of  
10 all these values, out of all these scenarios,  
11 is where you either have no post-operational  
12 data, whether it is an air sample or a surface  
13 contamination value. So, two out of the seven  
14 scenarios is where that applies.

15 And I would agree that universally  
16 applying the 1 percent per day without looking  
17 at the facility-specific conditions is  
18 probably not appropriate. So, I think we can  
19 cut to the chase here, and we can justify or  
20 modify that approach to accommodate that  
21 logic.

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1                   MR. SHARFI:     Jim, this is Mutty  
2     Sharfi.

3                   DR. NETON:    Yes.

4                   MR. SHARFI:     I can speak to the  
5     matching of the 1 percent and the 8 minus 5.

6                   DR. NETON:    Yes.

7                   MR. SHARFI:     The reason why those  
8     don't match is the 8 to the minus 5 is  
9     assuming that really the ventilation is the  
10    only source term to remove, is the only source  
11    of depletion for the source term.

12                  DR. NETON:    Right.

13                  MR. SHARFI:     And, realistically,  
14    your resuspension ventilation isn't your only  
15    source in how you remove material from a  
16    facility. You know, there's a number of real  
17    reasons how or mechanisms that remove or  
18    dilute material out of an area. And  
19    therefore, the 1 percent per day accounts for  
20    all those factors, not just resuspension.

21                  The equation was designed really

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1 just to give you an account for, if you only  
2 considered a resuspension, then you would have  
3 to have a much higher resuspension. But when  
4 you consider other mechanisms, such as  
5 tracking offsite, dilution, you know, moving  
6 material into crevices, I mean when you  
7 consider other mechanisms for making material  
8 less resuspendable, then your depletion rate  
9 in the sense of what's available to be inhaled  
10 increases because really resuspension is not  
11 the only mechanism.

12 So, you're kind of mixing two  
13 factors --

14 MR. THURBER: No, but that is a  
15 qualitative argument. That's not quantified.

16 MR. SHARFI: That is what the OTIB,  
17 I'm just saying that is the argument made in  
18 the OTIB.

19 DR. NETON: But, no, I understand  
20 that all. And eight times ten to the minus  
21 five is 80 times higher than one times ten to

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1 the minus five. I understand that.

2 But the problem is I think that we  
3 have other instances in the approaches where  
4 we use a hard-and-fast one times ten to the  
5 minus six --

6 MR. SHARFI: Yes. Correct.

7 DR. NETON: -- without any  
8 qualification at all. And I think what I'm  
9 saying is that we probably need to go back and  
10 qualify those statements to some degree.

11 MR. SHARFI: Yes, and those are  
12 limited. I mean we don't use that number for  
13 D&D activities or during cleanup. I mean  
14 those are limited to post-shutdown no more  
15 things happening.

16 DR. NETON: Exactly. And I think  
17 that is the source of the issue here, is that  
18 the way the TIB is written, it seems to be  
19 hard-and-fast application. In fact, we know  
20 that that is not the way it works in practice.

21 So, I think we can go back and fix

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1 these to some degree and put some better  
2 limits --

3 MR. SHARFI: Okay. I just wanted  
4 to clarify the comment, which is Comment 1,  
5 versus --

6 DR. NETON: I know.

7 MR. SHARFI: -- the discussion of  
8 whether 1 percent is valid. Comment 1 really  
9 just deals with how the 1 percent and 80 to  
10 the minus 5 correspond, and I wanted to  
11 clarify that versus whether or not you believe  
12 1 percent is valid.

13 DR. NETON: Well, I know, but the  
14 argument, then, is, is eight times ten to the  
15 minus fifth the right resuspension factor?

16 And John Mauro just agreed that, if  
17 you had this huge resuspension factor and that  
18 ventilation rate, it would be 1 percent per  
19 day, at least for the loose material.

20 MR. SHARFI: If you only assume  
21 resuspension.

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1 DR. MAURO: And that's true. If we  
2 had other information, I mean we try to find  
3 data on what that rate is declining. And the  
4 only strong data we have on the rate at which  
5 the resuspension factor declines is outdoors,  
6 the work that Linsley did and Anspaugh did at  
7 the Nevada Test Site.

8 And I think that what we're seeing  
9 is, after this initial high resuspension rate,  
10 you see this decline in the resuspension  
11 factor at about 1 percent per day because  
12 we're outdoors, and there's weathering;  
13 there's seeping down into the soil. And as  
14 time goes on, the material that is on the  
15 surface is not on the surface anymore  
16 outdoors.

17 DR. NETON: Well, see, I think  
18 indoors, John, you've got the situation where,  
19 typically, the measurements we have are loose  
20 plus fixed contamination.

21 DR. MAURO: Yes.

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1 DR. NETON: And we're assuming it's  
2 all fixed -- or all loose.

3 MR. THURBER: I want to say you're  
4 not really seeing a reduction in the  
5 resuspension factor. It's a reduction in the  
6 source term.

7 DR. NETON: Yes.

8 MR. THURBER: There's a difference  
9 there, you know.

10 DR. NETON: Right.

11 MR. THURBER: You know, the  
12 resuspension, things are being moved  
13 regardless, you know, energy being put into  
14 material in the ground and being resuspended  
15 up into the air. As the source term depletes,  
16 I mean, obviously, air concentration  
17 decreases. But it doesn't mean the ratio  
18 between, if the activities are the same,  
19 decreases.

20 DR. MAURO: Well, I think we're  
21 debating a model, in effect, on how to deal

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1 with this. The way I look at it is pretty  
2 simply. You know, if you can do the  
3 interpolation or extrapolation approach,  
4 great, that's the best way to go. If you  
5 can't and you just have some surface activity,  
6 let's say you have some knowledge of what's on  
7 the surface and you're going to resuspend it,  
8 and you know that it's been largely cleaned  
9 up, and you have a relatively clean  
10 environment, you're in the residual period --  
11 you know, it's sort of like the way my model  
12 is, the Linde plan. And, you know, it's been  
13 cleaned up, but you still think there might be  
14 some potential for resuspension.

15 In my mind, if you're not going to  
16 use the interpolation approach, and you can't  
17 because you don't have the data, but you do  
18 have some ppm per 100 centimeters squared  
19 numbers, and it's low, it's low because most  
20 of it has been taken away, then the ten to the  
21 minus six works. But that would basically

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1 stay constant.

2 I mean, if you're at ten to the  
3 minus six, I wouldn't try to use a one percent  
4 per day decline because I don't think that's  
5 going on. Now it may be more than .001. In  
6 other words, the rate of decline, as you  
7 correctly point out, may be more than just  
8 from the ventilation. It may be a combination  
9 of ventilation and what you would call perhaps  
10 some kind of weathering, where people walk and  
11 carry stuff out.

12 But, you know, I think that it  
13 would be, if you are going to resort to a  
14 backup position to the interpolation, maybe  
15 just go with the ten to the minus six  
16 resuspension factor in a relatively clean  
17 residual period.

18 MR. THURBER: But, John, I think  
19 you're confusing two issues, though. I mean  
20 we don't change the resuspension over time;  
21 the 1 minus 6 stays constant. What you're

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1 saying is that over time the surface  
2 contamination is decaying at 1 percent per day  
3 over time, but the resuspension is constant.

4 DR. MAURO: Well, no, I'm saying  
5 that, to assume that the activity in the room  
6 in a relatively clean room is going to be  
7 declining at 1 percent per day, I think that's  
8 too high.

9 DR. H. BEHLING: And, John, you  
10 have to realize that this issue of 1 percent  
11 applies to two different methods. Method No.  
12 2, which says we have operational air sampling  
13 and nothing else, so now you have to define  
14 what your air sampling or air concentration  
15 might be during the post-operation.

16 So, this 1 percent applies to  
17 Method No. 2, according to OTIB-70, as well as  
18 to Method No. 5, where you no longer have any  
19 air concentration, but you have operational  
20 surface contamination. And now you have to  
21 apply 1 percent to that value for the post-

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1 operational surface contamination.

2 Those are the two criteria.

3 MR. THURBER: What about 4, Hans?  
4 What about Method 4? I don't have the OTIB  
5 open.

6 DR. H. BEHLING: Method 4 is where  
7 you have operational surface contamination and  
8 post-operational surface contamination. Those  
9 are the different methods defined by  
10 availability of data.

11 So, the 1 percent applies to,  
12 obviously, Method No. 2 and Method No. 5.

13 MR. THURBER: Right. That's what I  
14 suggested earlier. And it's only when you  
15 don't have an anchor point to fit an  
16 exponential function.

17 DR. H. BEHLING: And I still say,  
18 for instance, let's forget about whether it's  
19 cleaned up. The facilities that we have had  
20 to deal with in the past, it's that when they  
21 simply stop doing something that is no longer

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1 under the auspices of the EEOICPA, where you  
2 don't have it cleaned up. They just stopped  
3 producing certain things that no longer fall  
4 into place.

5 That means the source term is  
6 basically your contamination on the floor.  
7 That's what we're dealing with. This is what  
8 we --

9 DR. MAURO: Yes, but if it's not  
10 cleaned up, I would use --

11 DR. H. BEHLING: I know. That's  
12 what I'm saying.

13 DR. MAURO: Yes, I would use ten to  
14 the minus six.

15 DR. H. BEHLING: Five to the minus  
16 six is not a realistic --

17 DR. MAURO: Yes, but, you know, the  
18 only reason why I mentioned this is that we  
19 did take a close look at this for Linde, and  
20 there was good reason to believe it was really  
21 cleaned up very well during the decon period.

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1       And the question was, what are we going to do  
2       during the residual period where we had  
3       nothing? We had no airborne samples until way  
4       down like 30 years later, 40 years later.

5                   DR. H. BEHLING: Well, I sort of  
6       think that there's nothing wrong with using  
7       perhaps surrogate data under those instances.

8       For instance, in Dow Chemical, we have two  
9       sets of data for air sampling. What does that  
10      tell us? It certainly tells us that perhaps  
11      this E minus 6 or the 1 percent may not apply  
12      here. Otherwise, we wouldn't have these  
13      empirical data for those facilities where this  
14      contamination ever persists at a much higher  
15      concentration for much longer periods of time.

16                   And I would also like to answer the  
17      issue, if ventilation is not the primary  
18      source for removal of contamination, I have to  
19      seriously question what are secondary. For  
20      instance, the more realistic value that we  
21      have, obviously, identified, that is, if 8 E

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1 minus 5 were to be used, that would only imply  
2 that the ventilation removal would have a very  
3 minor component.

4 For instance, I'm reading the  
5 response here from NIOSH that says we would be  
6 tracking it from one higher area to a lower.  
7 Well, it can go in the reverse, and so forth.

8 So, if you have a contaminated,  
9 let's say a football field that's indoors, and  
10 you track people back and forth, ultimately, a  
11 person tracking material from point A to B  
12 will also track point C back to A again. So,  
13 ultimately, it all evens out.

14 I don't see how other mechanisms  
15 really come into play that are significant. I  
16 still believe that the ventilation, that's  
17 assuming, also, that the ventilation has heat  
18 resistance in it that do, in fact, remove  
19 everything from the air, so that it is not  
20 simply recirculated.

21 Many of the heating/air-

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1 conditioning systems in a facility recirculate  
2 the air, which means that not everything is  
3 removed through ventilation. So, therefore,  
4 this simplistic approach of saying, okay, if  
5 we have so many exchanges per hour and it's  
6 subject to some filtration system, that that  
7 activity now is completely and forever  
8 removed.

9 First of all, in one of the other  
10 areas of my report, I stated that the  
11 contamination level at the breathing zone  
12 level at about the 5-6-foot level is not the  
13 same as the ventilation system which usually  
14 has an outtake at the ceiling, because you do  
15 have a very, very stratified concentration.  
16 Resuspension subject to particles falling back  
17 down or redepositing is not uniform. So that,  
18 when you have an air concentration that the  
19 person is exposed to at the breathing zone  
20 level, you may or may not have a good handle  
21 on what is really being removed by the

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1       filtration system.       Anyway, that's another  
2       issue.

3                   DR. MAURO:   See, Jim, I don't think  
4       we're that far apart on this.   I think we're  
5       just troubled by the 1 percent per day is what  
6       it --

7                   DR. NETON:   I agree, John.   I think  
8       the thing that bothers me, really, we're  
9       actually talking about the same dose.   It's  
10      whether the dose is delivered over a short  
11      period of time or a very extended period of  
12      time because it comes down to picocurie per  
13      meter hours.

14                  DR. MAURO:   Yes.

15                  DR. NETON:   So, if you have a  
16      higher resuspension value, you end up  
17      assigning more dose in the earlier years than  
18      the later years.

19                  MR. THURBER:   That's right, Jim,  
20      but, as we pointed out, you have to also  
21      factor in what the person's work history was.

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1 DR. NETON: Oh, exactly. Yes.

2 MR. THURBER: Because if he didn't  
3 work in the first year, in the first year of  
4 the residual period, and came onboard in the  
5 second year, and you used a high rate of  
6 depletion of the source term, then he would  
7 get nothing.

8 DR. NETON: Oh, I understand that.

9 MR. THURBER: Whereas, if you use  
10 an approach where it's stretched out over a  
11 longer period of time, the dose would be  
12 greater.

13 So, as we pointed out, you really  
14 have to consider not only a consistent dataset  
15 for the resuspension factor and the source  
16 term depletion rate, but you also have to  
17 overlay the person's work history on top of  
18 that to be sure that you're doing a bounding  
19 job.

20 DR. NETON: And the other thing  
21 that comes to mind, I don't know if it came

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1 out in TIB-70 or not; actually, it would go to  
2 zero on these 1 percent per day calculations.

3 Mutty might be able to help me out here,  
4 but --

5 MR. SHARFI: That's correct.

6 DR. NETON: My recollection, it  
7 never gets mathematically towards zero, but at  
8 some point it gets to be vanishingly small. I  
9 think we ultimately end up fixing the lower  
10 bound at some value.

11 MR. SHARFI: We take year three and  
12 go out ad infinitum.

13 DR. NETON: Right. So, we never  
14 decrement it past, I guess, year three.

15 MR. THURBER: Well, that's because  
16 you're using 1 percent per day, so it doesn't  
17 make any difference. It's all gone at that  
18 rate.

19 DR. NETON: Well, I don't know what  
20 we end up at year three with.

21 MR. SHARFI: It is pretty small by

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1 three years.

2 DR. MAURO: You probably stop at  
3 ten to the minus nine. That's what they did  
4 in the environmental. I mean the Anspaugh and  
5 the Linsley work, I think they go down -- they  
6 start at some number, you know, whatever it  
7 is, and they go down. But then at some point  
8 in time, they freeze it and then they hold it  
9 constant. And it might be ten to the minus  
10 nine.

11 DR. NETON: It seems to me that, of  
12 all these 15 or 17 findings, the main issue is  
13 this 1 percent per day justification. I think  
14 that it is incumbent upon us to go and either  
15 justify that or modify that. And I'm not  
16 suggesting we're going to modify it, but we  
17 need to beef it up some.

18 DR. MAURO: You know, I've got to  
19 say I don't remember you using it. When I  
20 check a lot of this work --

21 DR. NETON: I was thinking about

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1 this, and I think we may have, but I'm not --

2 DR. MAURO: You may have? Yes.

3 In other words, I look at the AWE  
4 cases a lot. That would be a place where you  
5 might use it.

6 DR. NETON: It would have to be an  
7 AWE, and it would have to be an AWE without  
8 any post-operational data whatsoever.

9 DR. MAURO: Correct.

10 DR. NETON: And there have to be a  
11 few cases of that.

12 DR. MAURO: Yes, maybe there are,  
13 yes.

14 MR. THURBER: It would likely be a  
15 non-FUSRAP site.

16 DR. NETON: Yes, a non-FUSRAP site  
17 and, typically, it would be some site that  
18 probably didn't have much contamination to  
19 begin with.

20 MR. THURBER: Well, as we point out  
21 here later on, actually, at Hooker you

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1       calculated the dust level at the time  
2       operation ceased and held it constant forever,  
3       which avoids all this --

4                   DR. NETON: Well, that was going to  
5       be my other thought. On some of these cases,  
6       we have done things like that, and it was --

7                   MR. THURBER: And that probably,  
8       again, as we discuss later on, is probably  
9       more defensible than a couple of the other  
10      approaches.

11                   DR. NETON: Well, I think two  
12      things. One is we need to go back and look  
13      and see where we have used the 1 percent per  
14      day, really how we have done that. Secondly,  
15      if we are going to stick with it, we need to  
16      justify it better.

17                   The other issues I think that I  
18      have read are more around things like what's a  
19      good value for an air concentration data at a  
20      uranium facility to start with to generate the  
21      surface contamination stuff. And that's all

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1 sort of being hashed out in the TBD-6000 era,  
2 as far as I can think.

3 CHAIR MUNN: So, am I hearing that  
4 NIOSH is going to revisit the 1 percent per  
5 day issue?

6 DR. NETON: Yes.

7 CHAIR MUNN: And we will expect  
8 some response to the concerns expressed in  
9 both Item 1 and Item 2 from NIOSH next time?

10 DR. NETON: Yes.

11 CHAIR MUNN: Okay.

12 DR. MAURO: Wanda, how many  
13 findings did you say that were in OTIB-70?

14 DR. NETON: Fifteen, but a lot of  
15 them end up being TBD-6000 related issues and  
16 kind of redundant.

17 DR. MAURO: I think once we resolve  
18 the matter we just discussed, they are all  
19 going to be resolved. I mean one way or the  
20 other. In other words, I think that they are  
21 all interconnected.

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1 DR. NETON: Well, I think that this  
2 use of one times ten to the minus six is also  
3 an issue.

4 MR. SHARFI: Exactly. I think  
5 those are the two primary issues, the 1  
6 percent and the  $1e-06$  resuspension.

7 DR. NETON: We default to one times  
8 ten to the minus six, but I think, as Mutty  
9 pointed out, that's typically only used in  
10 either quiescent conditions or those that have  
11 been cleaned up. And we don't clearly specify  
12 that.

13 So, again, I think we need to go  
14 back and look at what we have done in practice  
15 and then make sure that we're doing what we  
16 feel comfortable with.

17 CHAIR MUNN: So, we have only  
18 looked at Item 1 and Item 2, but I think I'm  
19 hearing from the conversation that the general  
20 feeling is that virtually all of the issues  
21 that we have here bear on the findings of 1

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1 and 2. Is that correct? Or am I overstating  
2 the case?

3 DR. BEHLING: No, Wanda, I think  
4 you're correct because I'm looking at Finding  
5 No. 3, which questions the whole issue of  
6 removal of contamination through the  
7 ventilation system. And in my writeup, I  
8 talked about the fact that the ratio between  
9 exhaust air and the general room air and the  
10 breathing air, you can be off by a factor of  
11 15. But then again, once we correct the 1  
12 percent per day and the  $1e-06$ , they are all  
13 connected. Most of the other findings that I  
14 cite in my report will somehow or other be  
15 tangentially corrected in the process.

16 CHAIR MUNN: I guess my question  
17 really bears on whether or not it is  
18 productive for us at this juncture to continue  
19 going through each of the items for OTIB-70  
20 one by one or whether we need to postpone that  
21 kind of activity until after we have seen

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1 NIOSH's revisit of these two key factors.

2 MR. MARSCHKE: One thing I would  
3 like to add, there were a few of the NIOSH  
4 responses to a few of the findings -- I am not  
5 sure how many -- where basically SC&A agreed  
6 with the NIOSH response and we would recommend  
7 that the issue be closed. That is one point.

8 The second point is three of the  
9 issues, I think as Jim or somebody mentioned,  
10 we stasured as being addressed in, I think it  
11 was, TBD-6000 or 6001.

12 CHAIR MUNN: Yes, I think it's one  
13 of those two.

14 MR. MARSCHKE: It is my  
15 understanding that that TBD no longer exists.

16 DR. MAURO: 6001.

17 MR. MARSCHKE: 6001 has been  
18 eliminated.

19 DR. MAURO: Right, right.

20 MR. MARSCHKE: So, the question on  
21 those ones that have been addressed in

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1 TBD-6001, are they going to fall through the  
2 cracks or do we need to restatus them? Do we  
3 need to take them back, I guess, to this  
4 Subcommittee?

5 CHAIR MUNN: Well, wait. I missed  
6 something there. We have cancelled TBD-6001?

7 I thought we established a Work Group to take  
8 that?

9 MEMBER ZIEMER: We did and they  
10 just --

11 MR. HINNEFELD: The situation was  
12 6001, there was a lot of information in there  
13 that just never ended up getting used. We  
14 just haven't needed it. We are not going to  
15 use it.

16 But there is sufficient information  
17 available from a TBD-6001 type approach of  
18 gathering information from several different  
19 sites of a particular nature, having them  
20 inform you about the site you're trying to  
21 investigate, that we can use those

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1 individually for the specific sites, which  
2 until now have been written as appendices.

3 So, that's the issue with 6001.  
4 Rather than try to resolve a lot of findings  
5 that were actually pertaining to parts of  
6 6001, which have not been used and we don't  
7 think will ever be used, let's just do away  
8 with that and don't worry about those  
9 findings, and then deal with the findings that  
10 pertain to the actual uses that will occur in  
11 the specific appendices. So, that's what's  
12 going on with 6001.

13 TBD-6000 is still out there. So,  
14 any of these that we said we are going to take  
15 care of in 6000, those are fine.

16 DR. MAURO: Yes. Well, let me help  
17 out a little, too. With TBD-6001, that is  
18 like the parent document. Then, of course,  
19 you have five attachments for five different  
20 facilities. I believe it is five, five or  
21 six.

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1                   And the position is that there are  
2                   a lot of problems with this generic TBD-6001,  
3                   but it turns out that NIOSH's feelings are  
4                   they could actually have standalone TBDs for  
5                   each of those five. And they don't need to  
6                   draw from this generic document, in other  
7                   words. So, basically, let's get rid of  
8                   TBD-6001 and have each one of those five  
9                   attachments stand on their own merit as full-  
10                  blown Site Profiles without having to lean on  
11                  TBD-6001.

12                  Now, on the other sites, TBD-6000,  
13                  that's a strong document. TBD-6000, I think  
14                  we have resolved most issues.

15                  MEMBER ZIEMER: There's no open  
16                  issues any longer.

17                  DR. MAURO: There are no more;  
18                  there you go.

19                  MEMBER ZIEMER: The only one is the  
20                  resuspension, which moves into this group  
21                  here.

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1 DR. MAURO: Yes. And I think we  
2 are close, I think we are very close to  
3 resolving it.

4 Now, remember, we're only talking  
5 the residual period now. TBD-6000 applies to  
6 both the residual and operations period.

7 DR. NETON: Here's the situation:  
8 TBD-6001 specifies air concentration values.  
9 That is what would be used to establish the  
10 contamination levels in those types of  
11 facilities.

12 So since we are going to generate  
13 facility-specific TBDs or documents, then the  
14 air concentration value would be included with  
15 them. So the cancellation of TBD-6001 really  
16 has no bearing on these findings anymore.

17 MR. MARSCHKE: I think that's what  
18 we wanted to hear, Jim, is that, basically,  
19 the cancellation of 6001, these issues would  
20 still be addressed in the subsequent documents  
21 that are --

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1 DR. NETON: Right, because the only  
2 thing there was I think SC&A was questioning  
3 the upper-bound value of the air concentration  
4 values cited for those facilities. And those  
5 would be documented independently in each of  
6 those facility-specific documents.

7 DR. MAURO: But then we couldn't  
8 reference -- in other words, right now, in  
9 OTIB-70 you are saying that there are a couple  
10 of places where we have transferred the issue  
11 to TBD --

12 MR. MARSCHKE: Not in OTIB-70; in  
13 our findings. Basically, we had a few  
14 findings in OTIB-70 which were duplicate  
15 findings that were in TBD-6001.

16 DR. MAURO: Okay.

17 DR. NETON: I think the solution is  
18 to take those out of TIB-70.

19 MR. MARSCHKE: Well, that's what we  
20 did. We had taken them out and we had sent  
21 them over to TBD-6001.

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1 DR. NETON: No, no, no. I mean --

2 MR. MARSCHKE: But, based upon your  
3 discussion, what you just said, Jim, I would  
4 say that that still is valid.

5 DR. MAURO: I was just going to  
6 come to the opposite conclusion. In other  
7 words, that they come back to OTIB-70 because  
8 we can't reference 6001 any longer.

9 MR. MARSCHKE: Why are we  
10 referencing it?

11 DR. MAURO: In other words, you are  
12 saying that they were, effectively, being  
13 addressed in TBD -- unless I'm not following  
14 this.

15 Help me out somebody.

16 CHAIR MUNN: The Chair has made an  
17 error here in even attempting to shortcut our  
18 process of going through these one step at a  
19 time. Clearly, what we are going to need to  
20 do is to look at each of these issues and at  
21 the point of each issue determine whether we

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1 can or cannot accept the current  
2 recommendation based primarily on whether or  
3 not we are referencing a transfer to 6001,  
4 which no longer exists.

5 DR. MAURO: I think you're right,  
6 Wanda. I think we have just got to bite the  
7 bullet and do it.

8 CHAIR MUNN: Let's just go back to  
9 No. 3 and take a look at what our statement is  
10 in No. 3 and see what we can do.

11 MEMBER ZIEMER: Question.

12 CHAIR MUNN: Yes, Paul?

13 MEMBER ZIEMER: Before you do that,  
14 maybe I will direct this toward Jim Neton.

15 Jim, it seems to me on the source  
16 term depletion factor, it would make sense  
17 that there might be several of these, then,  
18 for different conditions. I agree that the 1  
19 percent doesn't seem to make sense for a  
20 relatively clean facility with a resuspension  
21 of ten to the minus six, whereas it might for

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1 another facility with close to ten to the  
2 minus fourth loading.

3 So, is it your thought that you  
4 might have two or more depletion factors,  
5 depending on which of those scenarios you are  
6 talking about?

7 DR. NETON: Well, I would think  
8 that we would end up being more generic in  
9 TIB-70 in outlining the approach, which is to  
10 use a resuspension factor and air turnover  
11 rate, et cetera, on a facility-specific basis.

12 MEMBER ZIEMER: Okay. In other  
13 words, not specify a number, but a  
14 methodology?

15 DR. NETON: Exactly. Because then  
16 you're not locked into something like we are  
17 now.

18 MEMBER ZIEMER: Right.

19 DR. NETON: And people are critical  
20 of those things --

21 MEMBER ZIEMER: Yes.

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1 DR. NETON: Because they are not  
2 applicable across the board.

3 MEMBER ZIEMER: Right. And there's  
4 other factors. Hans mentioned, for example,  
5 the ventilation system being up high and the  
6 exposure to the workers at the floor level or  
7 slightly above, although even in that case,  
8 the respirable particles, which are the small  
9 ones, are more likely to find their way up to  
10 a higher level in a facility and be  
11 preferentially removed as opposed to the non-  
12 respirable particles.

13 DR. NETON: Right.

14 MEMBER ZIEMER: So, there's effect  
15 on the distribution as well.

16 But, in any event, that makes  
17 sense, then. You would develop a methodology  
18 which would be used, and that gives  
19 flexibility on what you use both for the  
20 resuspension and for the depletion.

21 DR. NETON: Exactly.

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1                   MEMBER ZIEMER: Okay. Thank you.

2                   CHAIR MUNN: Let's take a look at  
3 No. 3. And I will try to save Steve's voice a  
4 little bit by reading the original finding and  
5 reading the most recent response to where  
6 we've gone.

7                   This is OTIB-70, Finding No. 3,  
8 Internal Review Objective 6.1, 6.2, and 7.3.  
9 "Inappropriate assumption regarding the impact  
10 of ventilation on source term depletion  
11 implicit in Equation 5 employed by NIOSH for  
12 deriving the value of" -- I'm assuming that's  
13 lambda, but the source term depletion rate.  
14 "Is that airborne contaminants are, one,  
15 uniformly distributed throughout the interior  
16 volume of a facility and, two, removed with  
17 100 percent efficiency. Neither of these  
18 assumptions is likely to exist."

19                   And the most recent response,  
20 Thurber for SC&A. "The ORAU statement that  
21 `the OTIB does not indicate that the source

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1 half-life should be calculated from these  
2 input factors and subsequently applied' does  
3 not appear to be correct. For Section 3.1.1,  
4 'a source term depletion factor of 1 percent  
5 of the surface activity per day based on  
6 Section 2.6 is suggested for this purpose.'  
7 For Section 3.1.5, 'if no data are available  
8 for airborne radioactivity levels during the  
9 residual period, a source term depletion  
10 factor of 1 percent per day (Section 2.6) can  
11 be used in conjunction with the available  
12 operational period data.'

13 "SC&A recommends that this finding  
14 remain in progress."

15 DR. MAURO: Wanda, that is going to  
16 be swept up in the work that Jim described.

17 CHAIR MUNN: Yes.

18 MR. MARSCHKE: I agree.

19 CHAIR MUNN: So, we will leave --

20 MR. THURBER: And this comment was  
21 really specific to the ORAU response, and we

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1 just didn't agree that the ORAU was correct  
2 and consistent with the words in the document.

3 I agree that it will be cleaned up.

4 CHAIR MUNN: Correct.

5 DR. MAURO: Wanda, we probably  
6 could go quickly identify those issues that  
7 are going to be captured by Jim when he  
8 revisits this whole matter and those issues  
9 that maybe we had better take a look at, like  
10 the TBD-6001 issue. So, yes, we probably  
11 could knock these off pretty fast.

12 CHAIR MUNN: So, 03 remains as is?  
13 We're not going to do anything with it?

14 MR. MARSCHKE: Right.

15 CHAIR MUNN: Item No. 4?

16 DR. MAURO: It's closed.

17 CHAIR MUNN: Oh, is it?

18 MR. MARSCHKE: Basically, yes, we  
19 agreed with the ORAU comment and recommended  
20 that the finding be closed.

21 Do you want me to read it? Do you

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1 want me to read this one?

2 CHAIR MUNN: I don't believe so.

3 We all have it in one form or another.

4 Does anyone object to closing Item

5 4?

6 (No response.)

7 Change status to closed.

8 OTIB-70-05. And for some reason,

9 it doesn't want to open for me.

10 Internal Review Objective 1.5, 2.1,

11 2.2, 7.1. "Attachment B sites survey data for

12 three separate thorium facilities, but

13 provides no further guidance on how these

14 datasets are to be used. The three dataset

15 identified values differ significantly, but

16 there is no guidance for the dose

17 reconstructor regarding their use."

18 The response, the most recent from

19 SC&A by Thurber, does not agree with the NIOSH

20 response. "If an objective of OTIB-70 is to

21 provide a claimant-favorable estimate of

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1 inhalation exposure during the residual  
2 period, then it would seem appropriate to use  
3 the Linsley facility data. OTIB-70 should be  
4 prescriptive in indicating how Attachment B  
5 should be used rather than simply providing  
6 three sets of data.

7 "SC&A recommends that this finding  
8 remain in progress."

9 For our purposes, there is no  
10 change, correct?

11 MR. THURBER: Correct.

12 CHAIR MUNN: We will leave that  
13 status as it is.

14 The next finding, Finding 6,  
15 Internal Review Objective 5.1, 5.2, 5.3, 6.1,  
16 6.2, 7.3.

17 "Use of Horizons' Summary Survey  
18 Data as a default value for operational air  
19 concentration at a thorium refining facility  
20 is inappropriate and not claimant-favorable."

21 Response, the most recent: "is

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1 correct as ORAU states that Horizons' data are  
2 not proposed as default values. However,  
3 SC&A, via Thurber, believes that a more  
4 prescriptive approach, as described under  
5 SC&A's response to Item 6 above, is needed.

6 "SC&A recommends that this finding  
7 remain in progress."

8 MR. THURBER: That should be Item  
9 5, I guess.

10 CHAIR MUNN: Okay. That is  
11 puzzling.

12 MEMBER ZIEMER: "Five above?" This  
13 is 5.

14 MR. MARSCHKE: This is 6.

15 MR. THURBER: Yes, 6.

16 CHAIR MUNN: We're reading 6.

17 MEMBER ZIEMER: Oh, yes.

18 MR. THURBER: It should read --

19 CHAIR MUNN: It should read "5  
20 above."

21 MR. THURBER: "As described in our

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1 response to 5 above."

2 CHAIR MUNN: So, with that change,  
3 this item remains as it is for our purposes.  
4 No action on it.

5 Item 7, Internal Review Objective  
6 1.3.

7 "On the assumption that the  
8 geometric mean value of 4.8 dpm per meter  
9 cubed cited for Horizons in Attachment B of  
10 OTIB-70 reflects data contained in Exhibit No.  
11 5, it is unclear how this value was derived by  
12 NIOSH."

13 Most recent response from SC&A, via  
14 Thurber, agrees with NIOSH "that operational  
15 and process data should not be used as the  
16 basis for calculating residual exposures.  
17 SC&A has reviewed and accepted the data and  
18 spreadsheet provided by NIOSH.

19 "SC&A recommends this status be  
20 changed to closed."

21 Is there any concern about closing

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1 Item 7?

2 MEMBER ZIEMER: No concern.

3 CHAIR MUNN: If not, closed.

4 Change status.

5 We will go to Item 8. Internal

6 Review Objective 5.1, 5.2, 5.3, 6.1, 6.2, 7.3.

7 "Use of Horizons' Summary Data

8 Survey" -- no, wait. Wait, wait. I'm back on

9 6. I asked for 8 and I got 6. Sorry about

10 that.

11 This is Internal Review Objective

12 1.3.

13 "The derivation of air

14 concentration values cited in Attachment B for

15 nuclear materials was not adequately explained

16 by NIOSH and does not appear to correspond to

17 values reported in the survey, as given in

18 Tables 3 and 4."

19 The most recent response from

20 Thurber for SC&A agrees with NIOSH "that

21 operator and process data should not be used

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1 as the basis for calculating residual  
2 exposures. SC&A reviewed and accepted the  
3 data and spreadsheet provided by NIOSH.

4 "SC&A recommends that the status be  
5 changed to closed."

6 Any objection to changing the  
7 status to closed?

8 If not, 8 becomes closed, and we go  
9 on to 9, which is Internal Review Objective  
10 1.3.

11 "The derivation of air  
12 concentration values cited in Attachment B for  
13 Linsley was not adequately explained by NIOSH,  
14 and values does not appear to correspond to  
15 those reported in the survey."

16 I should have said, "does sic," "do  
17 not appear."

18 The most recent response from  
19 Thurber for SC&A agrees with NIOSH "that  
20 operational process data should not be used as  
21 the basis for calculating residual exposures.

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1 SC&A has reviewed and accepted the data and  
2 spreadsheet provided by NIOSH.

3 "SC&A recommends the status be  
4 changed to closed."

5 Any concern with closing Item 9?

6 If not, it is now --

7 MR. HINNEFELD: Well, by  
8 convention, didn't we promise to make this  
9 change in the next revision of the procedure?

10 Is that what our response is? Or have we  
11 done that? Our response on No. 9.

12 CHAIR MUNN: Let me see what it  
13 says here.

14 MR. MARSCHKE: Yes, "A slight  
15 change to the parameters listed in Appendix B  
16 is warranted and will be published in the next  
17 revision of the procedure."

18 CHAIR MUNN: So, this actually  
19 should --

20 MR. HINNEFELD: So, I mean it's  
21 pretty trivial -- if you wanted to close it,

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1 it wouldn't really hurt anything, but, by  
2 convention, it would be in abeyance.

3 CHAIR MUNN: Yes.

4 MR. HINNEFELD: We promised we were  
5 going to edit a document.

6 CHAIR MUNN: It should be in  
7 abeyance, yes. Let's follow our own  
8 conventions when we can.

9 The next item is Finding No. 10.  
10 Internal Review Objective 1.3, 6.1, 6.2, 7.3.

11 "NIOSH has recommended a  
12 resuspension factor of ten to the minus six  
13 per meter is inappropriate. Indoor  
14 resuspension factors" -- now this is going to  
15 be covered by our previous concerns, is it  
16 not?

17 MR. HINNEFELD: Yes.

18 CHAIR MUNN: So, this has a long  
19 response to it, but we will remain in progress  
20 until we have seen what the discussion is  
21 going to bring us. So, for our purposes,

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1       there's no change.

2                       We'll go to Item 11.       Internal  
3       Review Objective 1.3.

4                       "Use of NUREG-1400 as stated in  
5       OTIB-70 is both inappropriate and technically  
6       not feasible since the total absence of data  
7       precludes a quantitative assignment to the  
8       Source Term Q that reflects residual  
9       contamination."

10                      This is a significant response  
11       here.       "Since we're talking about the  
12       NUREG-1400 method, this may or my not" --  
13       let's read through this.

14                      Thurber response for SC&A:  
15       "According to Section 2.2 of OTIB-70, intake  
16       equals Q times one times ten to the minus six  
17       times R times C times D. Default values for  
18       R, C, and D are provided in the NIOSH  
19       document. Q is the total quantity of  
20       unencapsulated material processed in a year  
21       (NUREG-1400). It is not clear how this method

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1 would be implemented. Would the dose  
2 reconstructor take the total number of curies  
3 handled in the final year of operations and  
4 assume that this remains constant during the  
5 residual period?"

6 DR. NETON: Wanda, this is Jim.

7 CHAIR MUNN: Yes?

8 DR. NETON: I think I can shorten  
9 this a little bit.

10 We're going to go back and relook  
11 at the reasonableness of 1400. I don't think  
12 we have ever used it in a residual  
13 contamination context. So, we would agree to  
14 go back and relook at that and its scientific  
15 soundness for residual contamination.

16 CHAIR MUNN: So, the issue with  
17 NUREG-1400 is going to be a part of what your  
18 revisit is about?

19 DR. NETON: Well, it's a separate  
20 issue because it doesn't rely on any of these  
21 resuspension factors, but it does sort of.

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1 But, like I say, I don't think that we have  
2 ever used it. It was put in the toolbox for  
3 completeness, and I think we might want to  
4 rethink leaving it in there, my opinion at  
5 this point.

6 CHAIR MUNN: Yes. It did not  
7 appear to me to be the identical issue that we  
8 were talking about before. That's why I was  
9 reading it.

10 DR. NETON: No, it's actually a  
11 separate issue. It is sort of an outlier to  
12 the approaches that are outlined there, and it  
13 was thrown in for completeness' sake. And  
14 like I say, I don't know that we have ever  
15 used it.

16 CHAIR MUNN: In my notes, I'm going  
17 to include this as one of the things you're  
18 going to be looking at.

19 DR. NETON: Yes.

20 CHAIR MUNN: And it will remain in  
21 progress. So, there will be no change from

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1 our perspective here in the Subcommittee.

2 The next one is one that is  
3 addressed in a different finding, and our most  
4 recent suggestion "understands the issues to  
5 be resolved by TBD-6000. NIOSH prepared a  
6 White Paper showing the default values for  
7 surface contamination used in TBD-6000 from  
8 Harris and Kingsley are bounding when compared  
9 to the data in the Adley report."

10 So, they recommend changing the  
11 status to closed.

12 MR. MARSCHKE: I don't know if we  
13 can do that.

14 CHAIR MUNN: I don't know either.

15 MR. MARSCHKE: Basically, this is  
16 one of the ones that we sent over to the  
17 TBD-6000 Work Group.

18 CHAIR MUNN: Correct.

19 MR. MARSCHKE: And again, what  
20 we're saying here is that we think, basically,  
21 this White Paper by Harris and Kingsley or

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1 this NIOSH White Paper based on Harris and  
2 Kingsley resolved the issue. Unless the  
3 TBD-6000 Work Group maybe tells this  
4 Subcommittee that that is, in fact, true, I  
5 don't know if we can close it.

6 CHAIR MUNN: It seems unreasonable  
7 for us to do so. Based on our own  
8 conventions, we really should keep it in  
9 abeyance.

10 DR. MAURO: I recall looking  
11 carefully at David Allen's report related to  
12 this Adley and the TBD-6000 Work Group. And I  
13 think we discussed it and I think we closed  
14 that item on TBD-6000.

15 CHAIR MUNN: Did we?

16 DR. MAURO: And therefore, it's  
17 closed here.

18 MR. MARSCHKE: Well, there needs to  
19 be paperwork or a paper trail between the Work  
20 Groups.

21 DR. MAURO: Oh, I see what you're

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1 saying. Okay.

2 MR. THURBER: Yes. Yes, that's  
3 correct, what you said, John and Steve, both.

4 CHAIR MUNN: So, we need a note  
5 from the 6000 Work Group indicating that this  
6 item was closed.

7 MEMBER ZIEMER: I'll send you an  
8 email.

9 CHAIR MUNN: An email is the only  
10 thing that we usually use.

11 MEMBER ZIEMER: So we'll have a  
12 paper trail on it.

13 CHAIR MUNN: Yes. And then we can  
14 incorporate it easily.

15 Finding 13 relative to 6001, for  
16 determining inhalation doses, "may not be  
17 claimant-favorable under Task Order 3."

18 Now here's, I guess, where we had  
19 the discussion about what to do with 6001.  
20 The most recent response from SC&A by Thurber  
21 points out there may be a procedural problem

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1 here.

2 "NIOSH has decided to eliminate  
3 TBD-6001. Appendices to that document will be  
4 revisited and reissued as separate Site  
5 Profiles."

6 "With regard to SC&A's expressed  
7 concern about inhalation doses in TBD-6001  
8 prior to 1948, the issue was how to  
9 extrapolate doses backward in time. However,  
10 in the context of OTIB-70, this would only be  
11 a problem if the residual period at a site  
12 began prior to 1948," which seems unlikely to  
13 me.

14 MR. MARSCHKE: The question of the  
15 status of this issue right now is addressed  
16 in, I think it's addressed in finding, it's  
17 addressed in Finding TBD-6001.

18 MEMBER ZIEMER: But this was a  
19 generic approach to something which is not  
20 going to be used anymore.

21 So, it seems to me that it's no

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1 longer an issue because each case is going to  
2 be dealt with on its own merits.

3 DR. NETON: This is Jim.

4 I think we ought to put this one  
5 back onto NIOSH and the Work Group should hold  
6 onto it.

7 CHAIR MUNN: Yes, I think we need  
8 to have it until we get some piece of paper  
9 from you saying that that's what going to  
10 happen.

11 DR. NETON: Yes, because I'm  
12 looking at the relevant pages, page 13 and 14  
13 in TIB-70, and I had forgotten this, but,  
14 apparently, it is more than just the air  
15 sample values that are used. There are  
16 actually residual contamination estimates in  
17 those documents.

18 So, if we pull them out of  
19 TBD-6001, I don't know -- we're going to have  
20 to modify TIB-70 in some way to address that.

21 CHAIR MUNN: Exactly It seems to

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1 me rather than "addressed in finding," we need  
2 to go back to "in progress" for this.

3 DR. NETON: Yes, I think so because  
4 we need to go back and look a little closer at  
5 what was actually in 6001. It looks to me  
6 like it was actually recommended values for  
7 the residual contamination period. So, there  
8 was an approach in there that was developed.  
9 I suspect that it is similar to what's in  
10 TIB-70, but I'm not sure.

11 MR. THURBER: But the original  
12 finding that Hans made was based on the fact  
13 that there were some problems, he observed  
14 some problems with 6001. And one of the  
15 problems was that, when we reviewed 6001,  
16 there was no or very little data prior to  
17 1948, and NIOSH proposed a method for  
18 extrapolating backwards in time to cover  
19 situations prior to 1948.

20 And in our review of 6001, we said  
21 we don't think that the procedure proposed to

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1       extrapolate       backwards       in       time       is  
2       scientifically justifiable. So, that's how it  
3       got woven into OTIB-70, because it was an open  
4       issue that we had already commented on with  
5       regard to 6001.

6                       Now, as we noted here, if it can be  
7       shown that there are no residual periods prior  
8       to 1948, then the comment is irrelevant.

9                       DR. NETON: I agree, but, again,  
10       looking at TIB-70 itself, we have a statement  
11       that references TBD-6001 and actually has the  
12       table out of there in the documents.

13                      MR. THURBER: Oh, okay.

14                      DR. NETON: We've got to at least  
15       pull that table out.

16                      MR. THURBER: Right.

17                      DR. NETON: And then rethink about  
18       what we want to say about residual  
19       contamination at thorium facilities.

20                      MR. THURBER: Right.

21                      CHAIR MUNN: This is one of those

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1 situations where the Chair believes this item  
2 should be kept in progress, and that we should  
3 have for our own sake a comment, a response,  
4 from the Subcommittee listed on our matrix  
5 indicating that the Subcommittee has returned  
6 this to NIOSH for resolution of the issue.  
7 And how NIOSH resolves that will be a result  
8 of the deliberations that take place when you  
9 look at the entire body of questions that  
10 we're raising.

11 Steve, is it possible for us, do we  
12 have a spot where we can --

13 MR. MARSCHKE: We can change it  
14 back to "in progress" from, basically,  
15 "addressed in finding." We can change it back  
16 to "in progress."

17 CHAIR MUNN: In progress.

18 MR. MARSCHKE: And then I'll have  
19 to add -- this is No. 13 --

20 CHAIR MUNN: Yes.

21 MR. MARSCHKE: Offline, I will add

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1 a response.

2 CHAIR MUNN: Right.

3 MR. MARSCHKE: I'll add some words.

4 CHAIR MUNN: If you would, that the  
5 Subcommittee has returned this issue to NIOSH  
6 for continued deliberation and resolution.

7 Then, we will go to Item 14.

8 DR. NETON: The same problem.

9 MEMBER ZIEMER: The same thing as  
10 13, isn't it?

11 DR. NETON: Yes.

12 CHAIR MUNN: It appears to be. So,  
13 identical action on our part, identical change  
14 on our matrix to "in progress" from its  
15 current status as "covered in."

16 Fourteen, use of Battelle TBD-6001  
17 for determining inhalation basis.

18 MEMBER LEMEN: That's the one we  
19 just did.

20 CHAIR MUNN: We just did 14. Why  
21 did I bring it up again? We did 13 and now

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1 14.

2 MEMBER LEMEN: We already did 14.

3 So, now you're on 15.

4 CHAIR MUNN: Fifteen.

5 MR. THURBER: Thirteen and 14 were  
6 basically the same issue.

7 CHAIR MUNN: Right, and have been  
8 returned to "in progress."

9 Fifteen is TBD-9. Internal Review  
10 Objective 5.6, 7.3.

11 "Many of the fundamental  
12 assumptions that form the technical basis of  
13 OCAS-TIB-9, ingestion model, are too  
14 restrictive and may yield low values under  
15 Task 3, NIOSH's ingestion model, as described  
16 in OCAS-TIB-9.

17 "It was previously reviewed by  
18 SC&A, and a draft report issued May 30, 2006.

19 In that review, SC&A concluded that NIOSH's  
20 model is simplistic and is likely to yield  
21 intakes that are too low for multiple reasons.

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1       However, issue TIB-9-01 has not been formally  
2       finalized and is thus, regarded here as a  
3       conditional issue."

4               The latest response from SC&A via  
5       Thurber, "While the question has not been  
6       formally resolved, SC&A believes that use of  
7       OTIB-9 for the residual period is reasonable.

8       Recommend changing the status to in  
9       abeyance."

10              Any       concern       with       that  
11       recommendation?

12              If not, then it will go from "in  
13       progress" to "in abeyance."

14              And       that       completes       OTIB-70,  
15       correct?

16              MEMBER LEMEN:   Correct.

17              CHAIR MUNN:     Very good.     Does  
18       anyone have anything else to say about this  
19       before we move on?

20              DR. MAURO:     Is Jim still on the  
21       line?   Jim?   This is John.

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1 DR. NETON: Yes.

2 DR. MAURO: Yes, Jim, on that last  
3 item, we may not -- I'll be brief. The OTIB-9  
4 approach to ingestion, our position is that,  
5 and I think we discussed this, but we really  
6 never closed it down.

7 DR. NETON: Right.

8 DR. MAURO: It is that the approach  
9 is fine when you have very little  
10 contamination. It may be in a residual  
11 period; it's been cleaned up.

12 DR. NETON: Right.

13 DR. MAURO: But if you were in a  
14 dirty environment, going with the OTIB-9, at  
15 least our position is still that your  
16 ingestion is probably too low, maybe by a  
17 factor of 10 or more. So, we are halfway  
18 home.

19 DR. NETON: Yes.

20 DR. MAURO: We agreed that I think  
21 you can go with OTIB-9 when you have a

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1 relatively clean environment.

2 DR. NETON: I'm hoping, if we wait  
3 long enough, you guys will totally agree with  
4 me.

5 (Laughter.)

6 No, I understand what you're  
7 saying. My idea here is to close this out  
8 with an appendix to TIB-9 which documents our  
9 position. And it may end up being that we  
10 will agree to disagree on the higher levels,  
11 but we will try to shore that up a little bit  
12 when we write it up.

13 DR. MAURO: Okay.

14 DR. NETON: Appreciate that.

15 CHAIR MUNN: All right. The next  
16 item on our agenda is the big one that we have  
17 been working on for a while, the final edit of  
18 these four two-page summaries of OCAS-IG-2,  
19 OCAS-TIB-8, OCAUT-OTIB-66, and ORAUT-PROC-80.

20 Do all of you have not only those,  
21 the edits that I sent you, but also the most

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1 recent edits from SC&A that added to what we  
2 had?

3 MR. KATZ: They were distributed.

4 CHAIR MUNN: Those were  
5 distributed, yes. I sent them --

6 MEMBER LEMEN: Are those the ones  
7 in red?

8 CHAIR MUNN: I sent them to  
9 everyone.

10 MEMBER LEMEN: Yes, I got those.

11 MR. KATZ: We have a three o'clock  
12 break on the agenda. Can we make use of it  
13 or --

14 CHAIR MUNN: Yes, we certainly can  
15 make use of it. No question. Why not break?

16 MR. KATZ: Ten minutes?

17 CHAIR MUNN: A 10-minute break,  
18 back at 3:10.

19 MR. KATZ: Thank you.

20 (Whereupon, the above-entitled  
21 matter went off the record at 2:57 p.m. and

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1 resumed at 3:09 p.m.)

2 MR. KATZ: For the record, Dr.  
3 Lemen has left us.

4 CHAIR MUNN: Do we have both of our  
5 other Members on the line?

6 MR. KATZ: Do we have Mark and Mike  
7 still?

8 MEMBER GIBSON: Yes, Ted, I'm here.  
9 This is Mike.

10 MR. KATZ: Hi, Mike.

11 MEMBER GRIFFON: Yes, Ted, I'm back  
12 on now. It's Mark.

13 CHAIR MUNN: Very good.

14 MR. KATZ: Great.

15 CHAIR MUNN: Do we all have the  
16 most recent edits of our four documents,  
17 starting with IG-2?

18 We have been through these about  
19 four times now, trying to get them as simple  
20 as we can. What I have here right now has  
21 virtually no new changes. We've tried to hone

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1 this down to the point where we are no longer  
2 using our verbatim findings, in an effort to  
3 try to simplify what the findings mean to the  
4 causal reader.

5 What I am looking at, however,  
6 still has, the copy that I am looking at still  
7 has a number of section references which we  
8 had earlier indicated we were going to try to  
9 remove. And I have not removed them.

10 Are we still of a mind that the  
11 section references should come out? Because  
12 that's an easy-enough fix for me to do before  
13 we present this again to the full Board with  
14 the request on our telephone call that they  
15 approve them. Is that still our desire, that  
16 I take those section numbers out?

17 MEMBER ZIEMER: I think it's not  
18 important to have the section numbers.  
19 However, you would have to reconstruct these.  
20 You don't want to say, "Finding 5 does not  
21 provide adequate guidance."

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1 CHAIR MUNN: No.

2 MEMBER ZIEMER: You would have to  
3 say the document, or something, does not --

4 CHAIR MUNN: Yes. Yes, we would  
5 say --

6 MEMBER ZIEMER: For all of those.

7 CHAIR MUNN: Essentially, that's  
8 what we would say.

9 MEMBER ZIEMER: In Finding 6, you  
10 might still want to leave in figure 2.

11 CHAIR MUNN: Yes. That would make  
12 sense. But the other sections I think can  
13 come out easily and just simply the document  
14 provides or does not provide accurately or  
15 inaccurately, as we have done in Finding 2.  
16 That will take care of that.

17 Any other comments or concerns with  
18 respect to this one? Yes, Paul?

19 MEMBER ZIEMER: There are some  
20 places where we probably don't need to give  
21 acronyms. If something's not repeated, like

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1 the Energy Employees Occupational Compensation  
2 Program Act of 2000, EEOICPA, unless we're  
3 using that again, which I don't think we are,  
4 we can drop the EEOICPA.

5 CHAIR MUNN: Yes, we can.

6 MEMBER ZIEMER: And the same is  
7 probably true of ICRP-71.

8 CHAIR MUNN: Well, we had a  
9 discussion about ICRP, remember, and --

10 MEMBER ZIEMER: Okay. ICRP is  
11 referred to twice in the document.

12 CHAIR MUNN: Yes.

13 MEMBER ZIEMER: The first time it's  
14 given as ICRP-71. The second time it's  
15 another ICRP is given. So, I don't think you  
16 need both the second time, either one or the  
17 other. I mean it's redundant, right?

18 CHAIR MUNN: It is. Everything  
19 that we can remove from this, we should. And  
20 I guess it would be my preference, since we  
21 already have the full title in the text in

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1 both places, it would be my preference to just  
2 simply remove the parenthetical ICRP-71, if  
3 that's agreeable to everybody.

4 MR. MARSCHKE: Wait, wait, wait.

5 CHAIR MUNN: Finding No. 2.

6 MR. MARSCHKE: Finding No. 2, just  
7 take away the --

8 CHAIR MUNN: Right at the tail-end  
9 of it, it says, we're referring to the  
10 International Commission on Radiation  
11 Protection Publication 71. And, then, again  
12 down in Resolution of Findings No. 2, we refer  
13 to "International Commission on Radiological  
14 Protection (ICRP)."

15 MR. MARSCHKE: So, you want to put,  
16 in Finding No. 2, do you want to put, after  
17 "International Commission on Radiological  
18 Protection," you want to put "ICRP" --

19 CHAIR MUNN: No.

20 MR. MARSCHKE: And, then, get rid  
21 of the parenthetical at the end of it? And,

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1 then, when you get back to the bottom, down in  
2 the findings just put "ICRP" as opposed --

3 CHAIR MUNN: No, I want to remove  
4 the parenthetical in both cases.

5 MR. MARSCHKE: Okay, and leave the  
6 whole spelled out?

7 CHAIR MUNN: Since we've already  
8 spelled it out in both cases and it doesn't  
9 create a problem, why not?

10 MR. MARSCHKE: Okay. So, we get  
11 rid of the parenthetical on both.

12 CHAIR MUNN: Those FLAs and TLAs,  
13 four-letter and three-letter acronyms, have a  
14 tendency to throw casual readers off.

15 MR. MARSCHKE: Throw people off.

16 CHAIR MUNN: If we spelled it out  
17 already, then we don't have an issue.

18 Are we good to go with that one?

19 MEMBER ZIEMER: Do we need to  
20 repeat -- wait a minute. There's a "NIOSH"  
21 and a "DCAS" in here, too. Did we get rid of

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1 those? I guess "NIOSH" is repeated, so maybe  
2 we leave that in. DCAS, is "DCAS" used later?

3 CHAIR MUNN: I don't see it right  
4 now.

5 MEMBER ZIEMER: That's paragraph 3,  
6 line 7, gives "Division of Compensation  
7 Analysis and Support, DCAS," but if we never  
8 use DCAS again, which I don't think we do,  
9 then we don't need it.

10 MR. MARSCHKE: No, it's not used  
11 again, according to the findings.

12 CHAIR MUNN: I'm not finding it.  
13 Paragraph 3?

14 MEMBER ZIEMER: It's paragraph 4,  
15 no, paragraph 3, line 7.

16 CHAIR MUNN: Oh, my. Are we  
17 looking at the same thing? We're not looking  
18 at the same thing.

19 MEMBER ZIEMER: Well, these line  
20 numbers can change because you had the copy  
21 that's --

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1                   CHAIR MUNN:     But I don't have  
2     "DCAS" on mine at all.     What I have for  
3     paragraph 3 right now is, "Under the Energy  
4     Employees Occupational Illness and  
5     Compensation Program Act of 2000 (EEOICPA), an  
6     estimate must be made of the dose to a  
7     particular tissue or organ where the  
8     cancer" --

9                   MEMBER ZIEMER:     That's different  
10    than my whole paragraph.

11                  DR. OSTROW:     Paul, this is Steve  
12    Ostrow.

13                  I think Wanda is looking at the  
14    version that she had put out while Paul is  
15    looking at the version that SC&A had marked  
16    up.

17                  CHAIR MUNN:     I had hoped that I was  
18    looking at the most recent version.

19                  MR. MARSCHKE:     The most recent  
20    version should have "SC&A 12-30-10" at the end  
21    of the file name.

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1 CHAIR MUNN: Yes, I recall that.

2 MEMBER ZIEMER: At the end of the  
3 file name?

4 MR. MARSCHKE: In parentheses.

5 CHAIR MUNN: I recall that.

6 MR. HINNEFELD: It won't show on a  
7 printout.

8 MR. MARSCHKE: What's on the screen  
9 here is Steve Ostrow's most recent version,  
10 the SC&A --

11 MEMBER ZIEMER: Yes, that's the one  
12 I'm looking at.

13 MR. MARSCHKE: Yes.

14 MEMBER ZIEMER: There's the DCAS  
15 there.

16 DR. OSTROW: That's what Paul is  
17 looking at.

18 MR. MARSCHKE: Yes.

19 CHAIR MUNN: Yes, and that's what I  
20 thought I had. Did I transmit it?

21 MEMBER ZIEMER: Well, the paragraph

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1 you read was slightly different than what I  
2 see here.

3 CHAIR MUNN: Well, yes.

4 MEMBER ZIEMER: Now the other thing  
5 is, where it gives the title and then the OCAS  
6 number again, do we need to give that number  
7 again? It's in the title of the document.  
8 And then every time we come to it, we repeat  
9 both of those.

10 See, there is it again, Steve.

11 MR. MARSCHKE: Right, I see it.

12 MEMBER ZIEMER: I don't see any  
13 point in repeating it every time we use it.

14 CHAIR MUNN: My electronics are  
15 mistreating me here. Sorry to hold you up.

16 MR. HINNEFELD: Or I can forward  
17 you Steve's December 30th --

18 CHAIR MUNN: No, I have it. I have  
19 it. I'm just trying to pull it up. I'm being  
20 talked to not very smartly by my own system.  
21 I'll just go back to where I sent it out.

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1                   Now maybe we can get all on the  
2 right page. I just simply sent it out and  
3 didn't file it properly.

4                   All right. Now we were back to  
5 taking out "DCAS." All right, we can remove  
6 "DCAS."

7                   DR. OSTROW: I have a comment on  
8 that. This is Steve.

9                   CHAIR MUNN: Yes?

10                  DR. OSTROW: I would like to leave  
11 "DCAS" in there, if possible, because the  
12 reason I put it there is because if someone is  
13 new to the program like a claimant and they  
14 want to check on how we resolved this  
15 procedure, "DCAS" and "OCAS" are common -- the  
16 program. So I thought that it would be  
17 helpful for somebody looking at this if they  
18 saw the word "DCAS" there and the footnote  
19 that it used to be OCAS.

20                  CHAIR MUNN: Certainly, I  
21 appreciated the footnote with respect to the

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1 fact that it used to be OCAS. I had forgotten  
2 that this was the first place that occurred.  
3 I think that's appropriate because that has  
4 even confused some of us from time to time.  
5 Are we talking about a different agency or is  
6 it the same --

7 MEMBER ZIEMER: Well, hold on.  
8 Isn't there a cover thing that goes with all  
9 of these?

10 CHAIR MUNN: Yes, there is.

11 MEMBER ZIEMER: Doesn't that  
12 cover --

13 CHAIR MUNN: It talks about NIOSH,  
14 but I don't think it talks about either OCAS  
15 or DCAS. We could, of course, insert it in  
16 there. It isn't graven in stone yet.

17 MEMBER ZIEMER: Well, I sort of  
18 don't object to it being in here, although if  
19 that's one of the functions of these things,  
20 the other ones don't provide that information.

21 And it seems to me, if it's important generic

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1 information for people that want to track  
2 these things, we either need a final thing  
3 down below that says if you wish to follow up  
4 on this, you can contact such-and-so, or else  
5 we include it in that initial introductory  
6 page that goes with everything. I don't think  
7 the burden should be on this one to provide  
8 that.

9 CHAIR MUNN: No. No, you're  
10 probably correct. If I may volunteer myself  
11 to do so, I would be more than glad to go back  
12 to our introductory paragraphs and see that --

13 MEMBER ZIEMER: Either put it there  
14 or see if we need to add something.

15 CHAIR MUNN: -- a statement similar  
16 to this goes in there, so that regardless of  
17 where a person starts reading, they will have  
18 that information in front of them.

19 DR. OSTROW: This is Steve again.  
20 The four procedures that we marked up that  
21 you're looking at and, in addition, the 12 new

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1 ones that we just sent you last week, all have  
2 this OCAS/DCAS part into it. It's repeated in  
3 every one of them.

4 CHAIR MUNN: Yes, and what we're  
5 saying, Steve, is we would like to get away  
6 from that by putting it into the introductory  
7 paragraphs that precede all of these  
8 documents, so that we will have covered that  
9 before we ever start to write the two-pager.

10 DR. OSTROW: Okay.

11 MR. MARSCHKE: The footnote goes  
12 away.

13 CHAIR MUNN: Yes, the footnote  
14 would then go away.

15 MR. MARSCHKE: But what about the  
16 DCAS? Does that go away or, like Steve said,  
17 that's a handy term for people who are  
18 familiar with -- that's a term that some of  
19 the claimants and those types of people will  
20 be familiar with and may feel comfortable  
21 seeing.

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1 CHAIR MUNN: Well, there's  
2 certainly no harm leaving it there.

3 MR. MARSCHKE: So just the footnote  
4 goes away.

5 MEMBER ZIEMER: What goes away?

6 MR. MARSCHKE: The footnote.

7 CHAIR MUNN: The footnote below it  
8 that says "Formerly known" --

9 MEMBER ZIEMER: I see.

10 CHAIR MUNN: Yes.

11 MEMBER ZIEMER: Because you're  
12 going to cover that elsewhere?

13 CHAIR MUNN: Yes.

14 MR. MARSCHKE: Yes, that's been  
15 covered elsewhere.

16 CHAIR MUNN: That's what I'm going  
17 to cover with the footnote, I mean with the  
18 additional comment.

19 MEMBER ZIEMER: Can I add a couple  
20 of other things then?

21 CHAIR MUNN: Yes.

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1                   MEMBER ZIEMER:        At the very  
2 beginning, we talked about the Department of  
3 Energy and then DOE. Do we need the "DOE?"  
4 Do we need the "AWE" for Atomic Weapons  
5 Employer?

6                   One of the things we were trying to  
7 do is eliminate acronyms.

8                   CHAIR MUNN:    Yes, we are. And I  
9 don't see either "DOE" or "AWE" repeated  
10 elsewhere in the --- so, you're correct, we  
11 can remove it. "DOE" can come out.

12                  MEMBER ZIEMER:  Another comment is  
13 on the third resolution. First, all the  
14 thoriums, we don't capitalize elements unless  
15 they're abbreviations. So those should be  
16 lowercase.

17                  But I am wondering, as I read  
18 through Resolution 3, I think it's very  
19 confusing. It's not clear to me that a sixth-  
20 grade-level reader, or whoever, is going to  
21 know what we're talking about there.

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1                    Couldn't we just say that, "Decided  
2                    no revision of the guideline is in order since  
3                    the finding refers only to an example?" And  
4                    just leave it there?

5                    CHAIR MUNN: I certainly agree that  
6                    the casual reader would have --

7                    MEMBER ZIEMER: I mean read the  
8                    next sentence.

9                    CHAIR MUNN: Yes.

10                  MEMBER ZIEMER: I mean, if you  
11                  don't know anything about radioactivity --  
12                  "NIOSH indicated that the quotation from the  
13                  procedure assumes the established fact that  
14                  thorium-232 gamma-emitting decay products --  
15                  naturally existed at all times in known  
16                  quantities relative to the thorium-232  
17                  present."

18                  CHAIR MUNN: Yes.

19                  MEMBER ZIEMER: I had to read that  
20                  three times myself to figure out what it's  
21                  saying, and I don't think it's -- well, that's

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1 my opinion of that.

2 CHAIR MUNN: No, I think it is a  
3 valid opinion, and I certainly agree with it.

4 Does anyone have any grief with our  
5 removing that and leaving only the first  
6 sentence there?

7 (No response.)

8 If not, it is gone.

9 Any other comments or edits?

10 (No response.)

11 If not, then I will go through this  
12 one more time and send it out to you before we  
13 need to send it to the full Board to provide  
14 it to them for the report, asking for their  
15 approval.

16 So remember what we have done here.

17 And if you find that I have made corrections  
18 erroneously, please call it to my attention  
19 promptly.

20 If not, then we will call that one  
21 good.

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1                   And we will go on to the next one.

2                   MEMBER ZIEMER: Which is?

3                   CHAIR MUNN: Which is TIB-8.

4                   MEMBER ZIEMER: I have a comment.

5                   CHAIR MUNN: Go right ahead.

6                   MEMBER ZIEMER: Actually, on all of  
7 these, I did want to compliment SC&A. I think  
8 they have done a good job of making these both  
9 concise and more readable.

10                  CHAIR MUNN: Absolutely.

11                  MEMBER ZIEMER: So any editorials  
12 I'm proposing are in that spirit. I think  
13 these are much, much closer to what we are  
14 looking for.

15                  CHAIR MUNN: They certainly are. I  
16 thank everyone involved.

17                  MEMBER ZIEMER: I thought I would  
18 compliment them on that.

19                  On this one, again, I don't think  
20 we need the "DOE" and the "AWE" at the  
21 beginning because those are not repeated, and

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1 we want to eliminate acronyms.

2 One of the difficulties I felt on  
3 this first page is the following, and it  
4 starts in paragraph 1, where they talk about  
5 radioactive particles and then a little later  
6 talking about the same thing, talked about  
7 radionuclides attached to these particles.  
8 And then in the next paragraph, airborne  
9 particles containing radionuclides. And then  
10 in the third paragraph, airborne  
11 radionuclides.

12 And I think all of these are  
13 intended to refer to the same thing, but all  
14 of them have a slightly different connotation.

15 Radioactive particles versus particles to  
16 which radionuclides are attached are slightly  
17 different.

18 CHAIR MUNN: They are.

19 MEMBER ZIEMER: Or airborne  
20 particles containing radionuclides. I'm only  
21 suggesting we select one of these and then

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1 sort of be consistent on using the term.

2 CHAIR MUNN: My preference would be  
3 radioactive particles. I think that conveys  
4 both the intent and a logical visualization  
5 for the reader.

6 Does anyone have any objection to  
7 using radioactive particles?

8 MR. MARSCHKE: Tiny radioactive  
9 particles.

10 CHAIR MUNN: Beg your pardon?

11 MR. MARSCHKE: Tiny radioactive  
12 particles?

13 CHAIR MUNN: No. Well, in the  
14 first place we say, "tiny radioactive  
15 particles," and that's reasonable because --

16 MR. MARSCHKE: That's what I was  
17 thinking, is the "tiny" redundant?

18 MR. KATZ: "Tiny" is redundant,  
19 yes.

20 MR. MARSCHKE: Can it be taken out?

21 MR. KATZ: Particles are tiny by

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1 definition.

2 CHAIR MUNN: Well, it is tiny --  
3 not necessarily.

4 MR. KATZ: I mean we're talking  
5 about lay people, and particles are --

6 CHAIR MUNN: A particle to them  
7 could be a flake of ash, and we're not talking  
8 about flakes of ash.

9 (Laughter.)  
10 It really isn't.

11 MR. KATZ: I just doubt whether it  
12 makes a difference to the public, but --

13 MEMBER ZIEMER: Well, we want to  
14 both be understandable and, as far as  
15 possible, scientifically correct. This says  
16 these particles travel much like dust  
17 particles. Well, the reason for that is in  
18 most cases they're attached to dust particles,  
19 although not always.

20 CHAIR MUNN: And in order to do  
21 what we're talking about here --

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1                   MEMBER ZIEMER:   So to some extent,  
2                   the second one, the radionuclides attached to  
3                   these particles is also correct, and particles  
4                   containing radionuclides is also correct.   So  
5                   in one sense, they're all correct depictions,  
6                   but I think being consistent is more the issue  
7                   in my mind.

8                   CHAIR MUNN:       They are also all  
9                   particles --

10                  MEMBER ZIEMER:   Right.

11                  CHAIR MUNN:       -- and they are all  
12                  tiny, and they are all radioactive.

13                  MR. MARSCHKE:    So basically you  
14                  want    to    change    what's    highlighted,  
15                  "radioactive"    --    "radionuclides,    i.e.,  
16                  radioactive    elements    attached    to    these  
17                  particles," you want to change that to just  
18                  "radioactive particles?"

19                  MEMBER ZIEMER:    Well, in the body  
20                  these radioactive particles decay, I guess is  
21                  what you're saying.

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1 CHAIR MUNN: Yes.

2 MR. MARSCHKE: "Particles decay."

3 Then we want to go down --

4 MEMBER ZIEMER: Just say, "Airborne  
5 radioactive particles," I suppose.

6 CHAIR MUNN: Yes.

7 MR. MARSCHKE: "Airborne  
8 radioactive particles." And then in the third  
9 paragraph, "Airborne" --

10 MEMBER ZIEMER: "Radioactive  
11 particles."

12 SC&A, are you okay with that?

13 DR. OSTROW: It sounds good to me.

14 This is Steve.

15 MEMBER ZIEMER: Okay. Before he  
16 left, Dick Lemen indicated to me he was  
17 concerned about, let's see, I think he said it  
18 applied to all of them, and maybe we're  
19 covering it, being consistent on when we use  
20 acronyms and didn't. I guess it was the same  
21 comment, I guess, on that. So those will be

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1 covered.

2 MR. MARSCHKE: Well, do you want to  
3 get rid of "EEOICPA" here?

4 CHAIR MUNN: Yes, we do. We do,  
5 indeed.

6 DR. OSTROW: That's in every single  
7 procedure, so, universally, we should do that.

8 CHAIR MUNN: Yes.

9 MR. MARSCHKE: And I got rid of the  
10 footnote about the OCAS/DCAS thing.

11 DR. OSTROW: Yes, that's also in  
12 every two-pager.

13 MR. MARSCHKE: Right. It won't be  
14 in any of them now.

15 MEMBER ZIEMER: Now here in the  
16 third paragraph, we talk about ICRP  
17 Publication 66, but we don't tell them what  
18 ICRP is.

19 MR. MARSCHKE: Yes, we do. In the  
20 paragraph above it.

21 CHAIR MUNN: The International

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1 Commission on Radiological Protection, we put

2 "ICRP" --

3 MEMBER ZIEMER: Oh, I got you. I  
4 got you. I missed that, yes. Yes.

5 MR. MARSCHKE: What you don't need  
6 -- well, yes, you do. Never mind.

7 CHAIR MUNN: Yes, I think that one  
8 is so worded that we need to leave it pretty  
9 much the way it is.

10 MEMBER ZIEMER: Yes. Yes.

11 Okay. On this one, Resolution of  
12 Findings, "NIOSH issued Revision 1, which  
13 addressed the concern satisfactorily." It  
14 seems to me that's really vague. It is like  
15 on the other one if we said that here are  
16 these 10 things. We almost did this, but we  
17 said they agreed to modify, to accommodate the  
18 findings. That is pretty vague, too, now that  
19 I think about it.

20 CHAIR MUNN: Well, they rewrote the  
21 procedure to take care of, to make the

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1 guidance -- the findings in 1 or 2 was that  
2 the guidance wasn't always clear, and Finding  
3 No. 3 was the method doesn't follow ICRP  
4 recommendations. So they issued a revision of  
5 the procedure addressing all of the concerns  
6 that had been expressed, and I don't know what  
7 more you can say about it, actually, without  
8 going into specifics about what changes were  
9 made and where, which unduly complicates the  
10 message, I think.

11 MEMBER ZIEMER: Yes.

12 CHAIR MUNN: Perhaps we should,  
13 maybe it would even be a little nicer to say,  
14 "which addressed all the concerns to the  
15 satisfaction of the Advisory Board."

16 MEMBER ZIEMER: Well, yes, it  
17 should say that. It is sort of like, if we  
18 look at 080, where we give some discussion of  
19 sort of how they resolved -- what they did to  
20 satisfy, it's saying NIOSH responded to these  
21 by addressing all the issues. It doesn't

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1 really tell you --

2 CHAIR MUNN: To the satisfaction of  
3 the Advisory Board.

4 MEMBER ZIEMER: Well, yes.

5 CHAIR MUNN: Because all you can do  
6 is say they changed the procedure to improve  
7 the guidance and to follow the  
8 recommendations.

9 MEMBER ZIEMER: Right. Now that  
10 has specificity to it, though.

11 CHAIR MUNN: Okay.

12 MEMBER ZIEMER: That's exactly my  
13 point.

14 CHAIR MUNN: Perhaps we should say  
15 exactly that, then. "NIOSH issued Revision 1  
16 of this procedure" --

17 MEMBER ZIEMER: "A revision  
18 which" --

19 CHAIR MUNN: -- "to provide the  
20 necessary" --

21 MEMBER ZIEMER: -- "provided clear

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1 guidance and followed the ICRP  
2 recommendations," or something like that. I  
3 think specificity --

4 MR. MARSCHKE: How about something  
5 like that? "Which provided" --

6 CHAIR MUNN: "Which provided clear  
7 guidance where necessary and revised the  
8 method to adhere to" --

9 MEMBER ZIEMER: "And followed  
10 ICRP-66 recommendations for assigning dose" --

11 CHAIR MUNN: Just to follow ICRP  
12 recommendations, I think, isn't it?

13 MR. KATZ: That seems good.

14 CHAIR MUNN: So it would say, "In  
15 response to the findings identified above,  
16 NIOSH issued Revision 1 of this procedure,  
17 which provided clear guidance where necessary  
18 and revised the methods used."

19 MR. KATZ: If you read, Wanda, what  
20 Steve's got written up here, "where necessary,  
21 and follow the ICRP-66 recommendations for

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1 assigning dose to mouth, nose, and throat to  
2 the satisfaction of the Advisory Board."

3 CHAIR MUNN: Okay. He said more  
4 than I was going to.

5 DR. OSTROW: It's Steve Ostrow. I  
6 would make a comment that it should be in the  
7 present tense. "Revision 1 provides." It  
8 still does provide; it's not in the past,  
9 "provided."

10 MR. KATZ: Yes.

11 MR. MARSCHKE: And you want to take  
12 out the procedure number in this last -- well,  
13 what do we need this last sentence for?

14 CHAIR MUNN: No. It's one of the  
15 things that we've just -- it's kind of an  
16 exclamation point at the end of several of  
17 these we've said. So everything is closed,  
18 but it is necessary, I suppose.

19 MR. MARSCHKE: I don't think we had  
20 that in the last one we looked at.

21 MR. KATZ: You don't -- it's

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1       superfluous.

2                   MEMBER ZIEMER:   Actually, the other  
3       ones do have that.

4                   MR. MARSCHKE:   Well, the one we  
5       just got done looking at didn't have all of  
6       it.

7                   MEMBER ZIEMER:   The other two do.  
8       "All issues were resolved to the satisfaction  
9       of the Board."

10                  MR. MARSCHKE:   Well, that's what --  
11       we always say that.

12                  MEMBER ZIEMER:   Yes.

13                  MR. MARSCHKE:   Do you see that?

14                  MEMBER ZIEMER:   Yes, this other one  
15       said all issues are closed.

16                  MR. KATZ:   In this case, we already  
17       say it, like Steve is saying, it is said above  
18       and it's said with some specificity, which is  
19       nice.   So I think you're done.

20                  MR. MARSCHKE:   Wait a minute.   Wait  
21       a minute.   Well, wait a minute.   We don't say

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1 -- we have to read that. "Which provides  
2 clear guidance where necessary." "To the  
3 satisfaction of the Board" kind of doesn't fit  
4 there, does it? What's to the satisfaction of  
5 the Board?

6 CHAIR MUNN: Make it two sentences.  
7 Period. Period.

8 MR. MARSCHKE: Period.

9 CHAIR MUNN: "All issues were  
10 resolved to the satisfaction of the Board."

11 MR. MARSCHKE: And then you don't  
12 need this final sentence.

13 MEMBER ZIEMER: Right.

14 CHAIR MUNN: No. Correct.

15 MR. MARSCHKE: Do we want to give  
16 Joyce -- I mean, if Joyce is on the phone, do  
17 we want to check and see? And if she is, do  
18 we want to leave this for a second?

19 DR. LIPSZTEIN: I'm on the phone.

20 MR. MARSCHKE: Thank you, Joyce.

21 Do we want to go to Report 44 and

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1 take advantage of the fact that she is here  
2 and come back to the two-pagers maybe in a  
3 little bit?

4 CHAIR MUNN: We need to do that,  
5 yes, because we need to make sure that we get  
6 Joyce while we can.

7 We're glad to hear you on board,  
8 Joyce. Thank you.

9 DR. LIPSZTEIN: Thank you.

10 CHAIR MUNN: We are going to be  
11 wanting your input not only on Report 44, but  
12 also on -- this morning, we postponed  
13 discussing OTIB-49, so that we could have the  
14 benefit of your wise counsel as well.

15 DR. OSTROW: Wanda, it's OTIB-54  
16 that we postponed.

17 MR. MARSCHKE: Well, we have two of  
18 them, I think, Steve.

19 CHAIR MUNN: Yes, we postponed both  
20 49 and 54.

21 DR. OSTROW: Okay.

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1 DR. LIPSZTEIN: I'm sorry. You  
2 postponed 49 and 44? I didn't understand.

3 MR. MARSCHKE: Fifty-four, OTIB-54  
4 and OTIB-49.

5 DR. LIPSZTEIN: Okay.

6 CHAIR MUNN: OTIB-54, we had  
7 postponed Items 14, 15, and 16.

8 DR. LIPSZTEIN: Okay. Let me get  
9 it.

10 MEMBER ZIEMER: I had it as 17 and  
11 19.

12 CHAIR MUNN: That's 54.

13 MEMBER ZIEMER: Right. Yes, on 54.

14 DR. LIPSZTEIN: Okay. Let me just  
15 state one thing. I noticed that there is a  
16 new OTIB-49 that was issued in the end of  
17 November 2010 which I haven't reviewed yet.  
18 Is it worthwhile to discuss the old 49 without  
19 reading the new one?

20 MS. BRACKETT: This is Liz  
21 Brackett. That was just a minor change.

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1 There was an error in an example that was in  
2 there. It shouldn't have a very large impact  
3 on the overall document.

4 DR. LIPSZTEIN: Okay.

5 MR. MARSCHKE: I would recommend  
6 starting with 44. Which one would you like to  
7 start with, Joyce, 44?

8 DR. LIPSZTEIN: Could be 44, if you  
9 want. Forty-four you want? Okay. Let's  
10 start.

11 MR. MARSCHKE: Report 44.

12 DR. LIPSZTEIN: Okay, 44 is  
13 analysis of bioassay data with a significant  
14 fraction of less than results. I want, first  
15 of all, to say that this was done with Harry  
16 Chmelynski, who is in statistics, and he was  
17 not able to be present at this call today. He  
18 has some health problems. So he asked me to  
19 be part of it. But most of the statistical  
20 part of it was done by him, so I'll try to --  
21 when we read the OTIB-44, the statistical part

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1 of methodology that was used was very well  
2 presented and very well done. It's an  
3 improvement, a big improvement over the --  
4 methods that were proposed in Procedure 95.

5 We also proposed methods for when  
6 the data were less than results. We had  
7 problems with OTIB-44 on the application of  
8 it, not on the statistical part of it. All  
9 the statistical part, the methodology,  
10 everything is very well done and very well  
11 presented.

12 We would like some input from NIOSH  
13 on how to apply this data, for example, when  
14 the limit of detection is not well done -- not  
15 well known, as is often the case. For  
16 example, many times in many installations in  
17 the early times we don't know the limits of  
18 detection. Then the limits of detection, they  
19 were calculated years after, looking at the  
20 methods, and sometimes there is more than one  
21 limit of detection in one year; there are

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1 other years where for several years in a row  
2 you have the same limit of detection. And we  
3 know that this is not often the case, and that  
4 presents one problem for the application of  
5 OTIB-44.

6 The other problem is that this is -  
7 - the limit of detections are randomly spread  
8 across workers' job types and work areas. For  
9 example, you can have some workers, they would  
10 work in an area where they could be more  
11 exposed than other workers, and there is no  
12 analysis of that. So it is like we are  
13 applying the same thing for all job types for  
14 all work areas without worrying that some of  
15 the positive results might relate to a special  
16 procedure. And then for these workers, the  
17 coworker model should be different, should be  
18 more applied to that specific job.

19 Is that clear or should I detail  
20 further? Hello?

21 MR. HINNEFELD: Yes, we're here.

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1                   MR. MARSCHKE:   You kind of cut out  
2                   there at first, I think.

3                   MR. HINNEFELD:   Well, it was a  
4                   little in and out, but I'm a little bit at sea  
5                   here in terms of where we're at in the process  
6                   on Report 44.

7                   MR. MARSCHKE:   Well, Report 44 is  
8                   kind of a strange -- the review of Report 44  
9                   was kind of a strange beast, I guess, because  
10                  both this Subcommittee asked us to look at it  
11                  and the SRS Work Group asked us to look at it.

12                  And the findings that we have here  
13                  kind of are geared toward both this  
14                  Subcommittee and the SRS.    You will see  
15                  Finding No. 3 talks about SRS data, and so on  
16                  and so forth.

17                  DR. LIPSZTEIN:   Yes.    Yes.

18                  MR. MARSCHKE:   So perhaps Finding  
19                  No. 3 would be appropriate to go over to the  
20                  SRS Work Group.

21                  Mark, are you on the --

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1 MR. KATZ: Yes, he chairs it.

2 MR. MARSCHKE: Yes, he chairs the  
3 SRS Work Group. I just want to see if he  
4 understands, if that's his understanding as  
5 well.

6 MEMBER GRIFFON: It has come up in  
7 our Work Group, and we are taking that on,  
8 yes. That's definitely one of our action  
9 items. So it may make sense for this  
10 Procedures Group to wait for us on that.

11 CHAIR MUNN: We were hoping to have  
12 this added to our database by now, but because  
13 we had a bit of a problem with our IT folks  
14 and getting this where we needed to have it,  
15 Steve wasn't able to make the additions that  
16 we were going to have to the database we're  
17 working from now. So we're working solely  
18 from the SC&A findings document.

19 MR. MARSCHKE: And that's the other  
20 thing. Really, we haven't gotten any feedback  
21 from NIOSH as to, you know, we have these four

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1 findings that Joyce explained and which are  
2 documented in the Executive Summary of the  
3 report. We haven't gotten any NIOSH initial  
4 responses back to these findings, I don't  
5 believe, either in this Subcommittee or, as  
6 far as I know, not in the SRS Work Group,  
7 either.

8 CHAIR MUNN: No. This report has  
9 been hanging out.

10 MR. MARSCHKE: Well, I think it was  
11 issued on, let's see -- let me go back here --  
12 November 12th. So it's been out for two  
13 months.

14 MR. HINNEFELD: Was it submitted to  
15 this group, or was it submitted to Savannah  
16 River Work Group?

17 MR. MARSCHKE: This is the  
18 transmittal letter. Basically, all our  
19 transmittal letters go from John Mauro to  
20 Ruben Cruz with everybody, all the Advisory  
21 Board Members, with this as the cc list.

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1                   MR. HINNEFELD:    Okay.    So now you  
2   sent -- this was sent.    What date was it sent?

3                   MR. MARSCHKE:        The date on the  
4   transmittal letter is November 12th.    I also  
5   believe that was the date that Nancy Johnson's  
6   email -- there should be an email from Nancy  
7   Johnson on November 12th.

8                   MR. HINNEFELD:    Okay.

9                   DR.    LIPSZTEIN:        May I just  
10   summarize what our main problem is.    Our main  
11   problem is not with the statistical treatment  
12   of the data.    I think it's very well done and  
13   very well explained, everything like that.

14                   Our problem is only on the  
15   application of this to the different  
16   installations.    And there was an example from  
17   Savannah River Site.    So that's why it has a  
18   lot of problems with application of it on the  
19   Savannah River Site.

20                   So I think that this procedure, to  
21   be applied to each installation, it has to be

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1 explained how this is going to be applied.  
2 But we don't have any problems with the  
3 statistical treatment of the data. It is much  
4 better than the other document that this is  
5 supposed to substitute.

6 MR. HINNEFELD: Okay. Well, we  
7 haven't prepared -- I mean we got in November  
8 -- we haven't prepared responses for it,  
9 either for this Group or for Savannah River, I  
10 don't think. So it will be on our action item  
11 list, and we will, since it was delivered not  
12 as a Savannah River delivery, but as a review  
13 of Report 44, we'll put it in here. We'll  
14 just have to get it in the database.

15 Other than that, I don't know that  
16 we've undertaken to initiate responses on  
17 these anywhere.

18 CHAIR MUNN: So from the  
19 Subcommittee's point of view, two actions are  
20 still to be taken care of. One is to get this  
21 on the database, and the other is to

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1 anticipate the NIOSH response to the findings.

2 MR. HINNEFELD: Right.

3 CHAIR MUNN: All right. Do we have  
4 anything else on Report 44 that we want Joyce  
5 to pursue at this juncture? Or do we now need  
6 to wait for her to see NIOSH responses? I'm  
7 assuming the latter, unless I hear to the  
8 contrary.

9 All right, that's fine. Then have  
10 we given you an opportunity -- can we give you  
11 an opportunity, Joyce, to take a look at  
12 either OTIB-49 and OTIB-54, whichever of those  
13 is most convenient for you to begin with?

14 DR. LIPSZTEIN: Okay. Let me begin  
15 with 49, OTIB-49.

16 CHAIR MUNN: All right.

17 DR. LIPSZTEIN: The problem that I  
18 had with OTIB-49 that I don't know, Liz, if it  
19 was solved with this small clarification that  
20 you say on 49, it's not the essentials of the  
21 document. I think we had discussed a lot of

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1 TIB-49, and it's a well-accepted document for  
2 everybody. It was just, again, the  
3 application of OTIB-49 to some special cases  
4 where I didn't know exactly how to interpret -  
5 - the specifications, how the dose  
6 reconstructor should do it in some special  
7 cases.

8 Like, for example, someone that  
9 would be exposed in one year and then the  
10 following year, and then would stay three  
11 years without being, and then would be exposed  
12 again. So how to apply the factors that  
13 should -- the multiplying factors, the  
14 correction factors for the doses was just  
15 that, a clarification on -- for the dose  
16 reconstructors to make it clear how to apply  
17 the correction factors for calculating doses.

18 So it is not a problem with the  
19 document itself, but on how to apply it in all  
20 cases it might happen.

21 MR. HINNEFELD: This is Stu

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1 Hinnefeld at NIOSH. Joyce, if I'm correct,  
2 you have just that one item left, right, that  
3 one concern left?

4 DR. LIPSZTEIN: Yes, exactly.

5 MR. HINNEFELD: Okay. So part of  
6 my discussion on this is that one of these two  
7 findings should be able to be closed. You  
8 know, it was written as two findings, and then  
9 during the discussion, they kind of weaved  
10 together. So it's not real clear to me which  
11 finding to keep open and which one to close,  
12 but one of these could be closed.

13 And then in order to fulfill, you  
14 know, to answer Joyce's question, I have to  
15 rely on ORAU, and I don't know that they're  
16 prepared today because I don't think we  
17 prepared them for this for today. But it has  
18 to do with the situation which is explained, I  
19 think pretty clearly, in the history of this  
20 finding about -- initial finding and responses  
21 back and forth.

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1                   I think it's laid out pretty  
2 clearly what the situations are, and then  
3 Joyce described one just then, a person who --  
4 this is about the, for those of us who may not  
5 be that familiar with it, this is the Super S  
6 plutonium dose correction factor, you know,  
7 how you adjust for the dose, given that you've  
8 got a set of bioassays and you now consider it  
9 to be Super S plutonium. What does that do?  
10 What do you do to that? And there's this  
11 factor you multiply, but the use of that  
12 factor expects that you're going to have this  
13 employment with exposure and bioassay and then  
14 an end of employment and then at some point  
15 later on a diagnosis.

16                   In this case, what Joyce proposed,  
17 well, what if you have essentially two pieces  
18 of employment with exposure? Employment with  
19 exposure and some break. What happens then?  
20 So that's the question to us that we'll have  
21 to provide back.

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1                   I just want to make sure that we're  
2                   clear that that is it. That is the one issue  
3                   that we have to deal with.

4                   DR. LIPSZTEIN: Yes, exactly.

5                   MR. HINNEFELD: Okay. All right.

6                   CHAIR MUNN: In which case, it  
7                   appears that we can close Item 2 by saying  
8                   "Addressed in Finding 1."

9                   MR. MARSCHKE: Right. Change it to  
10                  "Addressed in Finding 1."

11                  CHAIR MUNN: Is that acceptable?

12                  MR. HINNEFELD: That's certainly  
13                  okay with me.

14                  CHAIR MUNN: Anyone on the phone  
15                  have any objection to that?

16                  (No response.)

17                  All right. Then we will remove 2  
18                  from our active list and call it "Addressed in  
19                  Finding 1."

20                  MEMBER ZIEMER: A question.

21                  CHAIR MUNN: Yes?

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1                   MEMBER ZIEMER:   So, generically, is  
2   it the issue of different exposures separated  
3   by time?

4                   DR. LIPSZTEIN:   Exactly.

5                   MEMBER ZIEMER:   Two being one  
6   possibility?  I mean one could say, well, what  
7   about three?

8                   MR. HINNEFELD:   Yes, it could be  
9   three, yes.

10                  MEMBER ZIEMER:   Yes.  Okay.  But  
11   it's the issue of a gap between two sets of  
12   exposures.  Okay.

13                  MR. HINNEFELD:   Because the  
14   arithmetic that is described in the TIB  
15   doesn't envision that situation.

16                  MEMBER ZIEMER:   And when you say a  
17   gap, you're talking about an employment gap?  
18   Because exposure-wise, it is very common to  
19   have a gap between intakes.

20                  MR. HINNEFELD:   I think that I'm  
21   going to have to have --

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1                   MEMBER ZIEMER:   Am I understanding  
2                   that right, Joyce?

3                   MR. HINNEFELD:   Well, she's talking  
4                   about either case.

5                   MEMBER ZIEMER:   Either case?

6                   DR. LIPSZTEIN:   Yes, either case,  
7                   yes.

8                   MEMBER ZIEMER:   Okay.    In other  
9                   words, the person might work with this  
10                  material for, say, several months --

11                  DR. LIPSZTEIN:   Yes.

12                  MEMBER ZIEMER:   -- and then not  
13                  work with it again for a year?

14                  DR. LIPSZTEIN:   Yes.    I examined  
15                  one case of dose reconstruction.  Then I tried  
16                  to apply exactly what was written in 49, and I  
17                  had to do my own interpretation of what I  
18                  thought was the right thing to do.

19                  MEMBER ZIEMER:   It seemed to me you  
20                  could have multiple gaps then.

21                  DR. LIPSZTEIN:   Yes.

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1                   MEMBER ZIEMER:   Okay.

2                   DR. LIPSZTEIN:   So I think that the  
3   dose reconstructor shouldn't have any doubt  
4   and -- with his own opinion on how to apply  
5   the document.

6                   MEMBER ZIEMER:   Got you.

7                   CHAIR MUNN:   So we will continue to  
8   carry that item with the anticipation of the  
9   action being NIOSH now.   Correct?

10                  And I will stop talking about  
11   technical talks necessary, right?

12                  MR. MARSCHKE:   Right.

13                  CHAIR MUNN:   Because we have for  
14   quite some time said that that was going to  
15   happen.

16                  All right.   Then that leads us to  
17   OTIB-54, Joyce.

18                  DR. LIPSZTEIN:   Yes.   I don't want  
19   to make you lose some time.   I have to find --  
20   I wasn't prepared for OTIB-54.   I have to look  
21   on my notes.   If you want to proceed with

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1 something else, I'll just look for it, where  
2 it is, so that you don't lose time with me  
3 trying to look for where it is, 54. Okay?

4 CHAIR MUNN: That will be just  
5 fine.

6 DR. MAURO: Steve, could you just  
7 apprise Joyce of which -- three items in  
8 OTIB-54 because we did deal with many of them?

9 MR. MARSCHKE: Yes.

10 DR. LIPSZTEIN: Okay.

11 MR. MARSCHKE: Just a minute. Just  
12 a minute, Joyce. Let me look.

13 DR. MAURO: Yes, that will make it  
14 a little easier for Joyce.

15 MR. MARSCHKE: Yes.

16 MEMBER ZIEMER: I think it was 17  
17 and 19.

18 CHAIR MUNN: Seventeen and 19 were  
19 what I had recorded for 54.

20 DR. LIPSZTEIN: Okay. I'm looking  
21 here at my computer to find 54. So if you

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1 want to proceed on something else and then  
2 we'll come back to that so that I find it?

3 CHAIR MUNN: All right. We'll bog  
4 ourselves down in something else here.

5 MR. MARSCHKE: Joyce?

6 DR. LIPSZTEIN: Yes?

7 MR. MARSCHKE: Do you also have the  
8 NIOSH responses to 17 and 19, to your original  
9 findings on OTIB-54?

10 DR. LIPSZTEIN: I think so, yes.

11 MR. MARSCHKE: Okay. Good.

12 CHAIR MUNN: All right then, while  
13 Joyce is looking for that, we can momentarily  
14 go back to our -- if I can get back there --  
15 to our letters that we're trying to get  
16 through. We have done two of them. And now  
17 we should be able to, if I can find where I  
18 put them -- summaries.

19 We've just done ICRP-66.

20 MR. HINNEFELD: Yes, but that was  
21 TIB-8.

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1 CHAIR MUNN: I'm sorry.

2 MR. HINNEFELD: TIB-8 is the one we  
3 just did.

4 CHAIR MUNN: TIB-8 is the one that  
5 we did.

6 And now -- doggone it. Now we're  
7 going to look at 66 coming up, correct?

8 MR. MARSCHKE: Correct.

9 CHAIR MUNN: We have the same "DOE"  
10 and "AWE" issue in the first line.

11 MEMBER ZIEMER: And then "ORAU" in  
12 about the fourth line.

13 CHAIR MUNN: So we will take out  
14 "DOE" up there, and we will take out "AWE" up  
15 there. Do you want to take out "ORAU," too?  
16 All right, we're going to take that out.

17 MR. MARSCHKE: In the start of the  
18 third paragraph it says, "guidance in  
19 ORAUT-OTIB-66." Do you want to change that to  
20 "guidance in the document," or do you want to  
21 keep that?

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1                   CHAIR MUNN:    I would like to say  
2                   "guidance in this document."

3                   MR. MARSCHKE:    "Guidance in this  
4                   document?"

5                   Later on in that same sentence, we  
6                   define TBD, Technical Information Bulletin.  
7                   Then if you go down to the next paragraph, we  
8                   define TBD again. Can we remove --

9                   CHAIR MUNN:    Yes. In that first  
10                  sentence under the summary headings --

11                  MR. MARSCHKE:   Right.

12                  CHAIR MUNN:    -- let's remove the  
13                  parenthetical expression there.

14                  MR. MARSCHKE:   Okay.

15                  CHAIR MUNN:    You know, I don't know  
16                  whether it's because I am unfamiliar with  
17                  using OBT and SMT or not, but the use of those  
18                  particular acronyms bothers me every time I  
19                  run into it into this document. And I know  
20                  that originally we left them there in an  
21                  effort to shorten the number of characters we

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1 were using, but I'm tempted to remove the  
2 "OBT" and "SMT" references and just go ahead  
3 and spell out organically-bound tritium and  
4 stable metal tritides.

5 MEMBER ZIEMER: Actually, in the  
6 second paragraph, line five, you can just say  
7 "these compounds" because both of them are  
8 involved.

9 CHAIR MUNN: Yes.

10 MEMBER ZIEMER: So you don't have  
11 to repeat it, these compounds.

12 MR. MARSCHKE: And then the only  
13 place you have it is one place.

14 MEMBER ZIEMER: One place later.  
15 You can say "from intakes of" --

16 MR. MARSCHKE: Stable metal  
17 tritides?

18 CHAIR MUNN: Yes, let's do.  
19 Instead of "SMTs," let's go ahead and say it.

20 MR. MARSCHKE: Do you want to get  
21 rid of the parentheticals for the first place

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1 up here?

2 CHAIR MUNN: Yes, unless someone  
3 has real objection to that.

4 MEMBER ZIEMER: Or you can just say  
5 "intakes of tritium compounds."

6 CHAIR MUNN: Well, we're talking  
7 specifically about --

8 MEMBER ZIEMER: Okay. Yes.

9 CHAIR MUNN: -- the behavior of the  
10 other different --

11 MEMBER ZIEMER: Okay.

12 MR. MARSCHKE: In the third  
13 paragraph, you have the OTIB number for  
14 OTIB-11, and in Finding 1 you also have the  
15 OTIB number for OTIB-11. Do you want that in  
16 both places? Because we have been taking out  
17 the OTIB number for the OTIB itself.

18 CHAIR MUNN: Where were you  
19 talking, Steve?

20 MR. MARSCHKE: Here we have OTIB-11  
21 defined here --

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1 CHAIR MUNN: Yes.

2 MR. MARSCHKE: -- including the  
3 number. And then down here, under Finding 1,  
4 we also have OTIB-11, the name and the number,  
5 a second location. I see it would be good to  
6 put the name and a number in at least one  
7 location, so somebody would know the number  
8 you're talking about.

9 CHAIR MUNN: Yes.

10 MR. MARSCHKE: But I don't know, I  
11 mean, for OTIB-66 itself we've only put the  
12 number in once.

13 CHAIR MUNN: Yes.

14 MR. MARSCHKE: And we've been  
15 removing it every place else.

16 CHAIR MUNN: Yes. I can see no  
17 reason why the parenthetical underneath the  
18 summary needs to be there. Just leave the  
19 title, Tritium Calculated and Missed Dose  
20 Estimates

21 MR. MARSCHKE: Well, again, now we

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1       come back to the first. Here we refer to it  
2       by the number.

3                   DR. OSTROW: This is Steve Ostrow.

4       I just want to make a comment. I just  
5       noticed in the first paragraph, I think it's  
6       the only procedure where it referred to the  
7       Oak Ridge Associated University Team.  
8       Everywhere else I've just called it NIOSH/DCAS  
9       and I used the same formulation. Here, for  
10      some reason, I used the Oak Ridge Team. I  
11      would change that to the same formulation I  
12      used in the other procedures, the NIOSH/DCAS  
13      formulation.

14                   CHAIR MUNN: We can hardly hear  
15      you, Steve. At least I can hardly hear you.  
16      I think I heard what you said, though.

17                   DR. OSTROW: Okay. I'll say it  
18      again. I think this is the only procedure  
19      where I used in the first paragraph that the  
20      procedure provided guidance of the Oak Ridge  
21      Associated University Team. Everywhere else

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1 in all the other procedures I used the  
2 NIOSH/DCAS formulation. I would change this  
3 to the same as the other ones. Instead of  
4 referring to Oak Ridge Associated University  
5 refer to provides guidance to NIOSH/DCAS.

6 MEMBER ZIEMER: So really, it's an  
7 ORAU document. Are they really providing  
8 guidance to NIOSH --

9 DR. OSTROW: Well, NIOSH and --

10 MEMBER ZIEMER: -- or the dose  
11 reconstructors?

12 DR. OSTROW: I just used the same  
13 formulation in all the procedures, including  
14 the other 12. I'm assuming that -- I guess to  
15 make it simple, just "provide guidance to  
16 NIOSH," and whoever works for NIOSH, I'm  
17 assuming they're taking the same guidance.

18 MR. HINNEFELD: Just as a matter of  
19 semantics, we prefer that it be "guidance to  
20 the dose reconstructor." These documents  
21 provide guidance for people doing dose

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1 reconstruction, not necessarily for us. I  
2 mean, yes, all the dose reconstructors work  
3 for us, but --

4 MEMBER ZIEMER: I mean it's  
5 "provide guidance to dose reconstructors" on  
6 how to assign --

7 MR. HINNEFELD: Yes.

8 CHAIR MUNN: So do you want to read  
9 that sentence the way you want it to read?

10 "The Technical Information Bulletin  
11 calculation of dose from intakes of special  
12 tritium compounds, ORAUT-OTIB-0066." From  
13 there, you want to say what?

14 Can you just say "provides guidance  
15 on how to assign doses from intakes to special  
16 tritium compounds?" Do we have to have all  
17 that business of who they provide it to? Do  
18 we have to say "to the Oak Ridge Associated"  
19 --

20 MEMBER ZIEMER: No. We're saying  
21 eliminate that and just "guidance to the dose

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1 reconstructors" on how to assign doses.

2 MR. MARSCHKE: Is that going to be  
3 -- I mean because the last two, the first two  
4 that we looked at, we had the same sentence,  
5 basically, guidance to the NIOSH Division of  
6 DCAS.

7 MR. HINNEFELD: My problem with  
8 that is that we are the approval authority on  
9 all these documents. It's not especially  
10 guidance to us. We endorse all these, and  
11 this is our word. I'm sorry I didn't mention  
12 it before. It didn't come to me before.

13 But, to me, these technical  
14 documents are to guide dose reconstructors.  
15 It's not like ORAU providing guidance to us.  
16 ORAU prepares these documents as our  
17 contractor, just as anybody else would, and  
18 we're the ones who put our imprimatur on it  
19 and say this is the correct guidance,  
20 according to the program, for doing dose  
21 reconstruction. So in every case I think it

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1       should be "guidance to dose reconstructors."

2                   MR. MARSCHKE:    Do you want to say,  
3       basically, something along the lines that this  
4       NIOSH procedure provides supplemental guidance  
5       to the staff on how to calculate doses?

6                   MR. HINNEFELD:    I think you're  
7       better off not putting it in there, to be  
8       completely honestly.       Because there are  
9       procedures that are our procedures, and there  
10      are procedures that are sort of ORAU  
11      procedures that carry an ORAU stamp on them.  
12      And I think you're better off just not saying  
13      it.

14                   I think that the documents, the  
15      technical documents, that describe how to do  
16      dose reconstruction provide guidance to dose  
17      reconstructors.   The fact that it's us or ORAU  
18      or some other contractor really doesn't  
19      matter.

20                   CHAIR MUNN:    I didn't even say to  
21      dose -- I --

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1                   MR. HINNEFELD: Or guidance, I mean  
2 just "provide guidance" is okay with me.

3                   CHAIR MUNN: Yes. I said, "The  
4 Technical Information Bulletin calculation of  
5 dose from intakes of special tritium  
6 compounds, ORAUT-OTIB-66, provides guidance on  
7 how to assign doses from intakes of special  
8 tritium compounds using worker urine bioassay  
9 results."

10                  Do they really care who they  
11 provide the instruction to? It tells you how  
12 to do it.

13                  MR. MARSCHKE: So the other two  
14 that we just got done editing --

15                  CHAIR MUNN: No, let's don't go  
16 back to those.

17                  MR. HINNEFELD: Well, I would  
18 rather they not say "provide recommendation to  
19 NIOSH." I would rather they not say that.

20                  CHAIR MUNN: Well, I'll double-  
21 check to make sure they don't say that.

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1                   MEMBER ZIEMER: Well, they do right  
2 now. The 008 says, "This procedure provides  
3 supplemental guidance to NIOSH/DCAS staff on  
4 how to calculate doses to the lungs --

5                   MR. HINNEFELD: I think it should  
6 just be "dose reconstructor."

7                   MEMBER ZIEMER: Yes.

8                   MR. HINNEFELD: Or just "provide  
9 guidance." I'm okay with just "provides  
10 guidance."

11                  CHAIR MUNN: Yes, on how to do  
12 whatever it is it does, yes.

13                  MEMBER ZIEMER: You can edit the  
14 first two, then, Wanda.

15                  CHAIR MUNN: Right, I can.

16                  The rest of it reads all right to  
17 me. Does anyone else have any problem with  
18 what we have so far? Remember, you get one  
19 more chance to look at it.

20                  MEMBER ZIEMER: You're talking  
21 about just the first paragraph or the whole

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1 document?

2 CHAIR MUNN: No, I'm talking about  
3 the whole document.

4 MEMBER ZIEMER: Well, I do.

5 CHAIR MUNN: Okay.

6 MEMBER ZIEMER: I think it gets  
7 complicated by introducing the second TIB. In  
8 fact, it's not clear from the resolution of  
9 the findings which of the two TIBs is going to  
10 be revised.

11 I don't remember, but it seems to  
12 indicate that, okay, here's this TIB and it  
13 tells you to use these procedures in another  
14 TIB, and that other TIB doesn't follow the  
15 ICRP. So NIOSH has agreed to revise the TIB.

16 Now are they going to revise the one that  
17 gives the wrong instructions? Because this  
18 one is only wrong because it refers to a  
19 different one that's wrong. Do you see what  
20 I'm saying?

21 The method described in --

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1 CHAIR MUNN: Yes, I do.

2 MEMBER ZIEMER: -- 011 is the wrong  
3 method.

4 CHAIR MUNN: Yes.

5 MEMBER ZIEMER: And that makes this  
6 one wrong.

7 CHAIR MUNN: Yes.

8 MEMBER ZIEMER: So when NIOSH  
9 agrees with the findings and will make the  
10 corrections in the next revision of the TIB,  
11 is it this TIB or the other one? That's what  
12 I think is confusing.

13 CHAIR MUNN: Yes, it is confusing.

14 MEMBER ZIEMER: I was hoping we  
15 could talk about this without even introducing  
16 the other TIB, but I'm not sure we can.

17 CHAIR MUNN: I don't know how we  
18 can with the finding.

19 DR. OSTROW: The OTIB-11 is  
20 correct, but it shouldn't be applied to  
21 special tritium compounds. The tritiated

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1 water in the OTIB-11 is correct, so that  
2 doesn't have to be revised. It's just the  
3 method is applied in this case where you have  
4 special tritium compounds. It's the OTIB-66  
5 which needs revising, not the OTIB-11.

6 MEMBER ZIEMER: Okay. That was the  
7 question I was asking. So is it necessary to  
8 bring the 11 into the picture in this  
9 discussion? In other words --

10 CHAIR MUNN: Yes, probably. But we  
11 need to get around -- we've brought it in up  
12 above because --

13 MEMBER ZIEMER: Well, suppose you  
14 simply said something along the lines, the  
15 document explains how intakes from --  
16 actually, as it stands right now, it's  
17 treating everything as tritiated water, isn't  
18 that correct?

19 MR. HINNEFELD: Essentially, yes.

20 MEMBER ZIEMER: And I don't know if  
21 we want to take the time to wordsmith this

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1 here, but it seems to me that there might be a  
2 way simply to say that the existing guidance  
3 essentially treats everything as tritiated  
4 water. So that you're going to revise it;  
5 you're going to revise this document to handle  
6 these two other classes differently. Is that  
7 what's going to happen? Right?

8 MR. HINNEFELD: I believe so.

9 MEMBER ZIEMER: The other one is  
10 going to stay as it is?

11 CHAIR MUNN: Yes.

12 MEMBER ZIEMER: Is that correct? I  
13 mean I don't know.

14 CHAIR MUNN: I believe so.

15 MEMBER ZIEMER: I mean the other  
16 one is tritiated -- tritium -- calculating  
17 missed dose estimates, maybe the other one  
18 should include everything. See, that's what's  
19 not clear.

20 CHAIR MUNN: Well, I think I can  
21 make it clear, but you're right.

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1                   MEMBER ZIEMER:       This one is  
2       supposed to focus on special tritium  
3       compounds.

4                   CHAIR MUNN:    Yes.

5                   MEMBER ZIEMER:   And this is the one  
6       that should cover those.

7                   CHAIR MUNN:    And OTIB-66 is what  
8       we're worried about.   And so that's the one  
9       that's going to be changed, right?

10                  MR. MARSCHKE:   Right.

11                  CHAIR MUNN:    Yes.   And so let me  
12       take a shot at that along with the rest of  
13       this.   I think we are fine down to the point  
14       where we start talking about Finding 1.  
15       Finding 1 and subsequent references to "the  
16       TIB," I will make it clear which TIB we are  
17       talking about and try to clarify that better.

18                  MEMBER ZIEMER:   I think if you can  
19       discuss this without even introducing the  
20       other one, we would be far better off, but  
21       maybe you can't.

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1                   CHAIR MUNN:    Maybe.    I guess it's  
2                   kind of hard to do that, but let's say that I  
3                   will give that one more shot and get that to  
4                   you for the moment.

5                   And then we will get back to --  
6                   perhaps we can pick Joyce up now.    I hate to  
7                   keep her on the line if we don't have to.

8                   Joyce, are you still with us?

9                   DR. LIPSZTEIN:    I'm sorry?

10                  CHAIR MUNN:    Just wanted to make  
11                  sure you were still there.

12                  DR. LIPSZTEIN:    Oh, Joyce, yes,  
13                  okay, I'm still here.    Do you want to go back  
14                  to 54 now?

15                  CHAIR MUNN:    Yes, if you're ready  
16                  to address that, please.

17                  DR. LIPSZTEIN:    Yes.    So let me  
18                  tell you one thing.

19                  It's Item 17 and 19.

20                  CHAIR MUNN:    Correct.

21                  DR. LIPSZTEIN:    I was reading now

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1 Item 17, and I don't want to make you waste  
2 your time. I have to read carefully what was  
3 my last answer. I looked at it, and I still  
4 can't accept it, but I would prefer to look at  
5 it further and then come back.

6 And on Item 19, the average of the  
7 four reactor types, which is the answer from  
8 my -- that this was discussed on Comment 14,  
9 and I think that it stays the same. I think  
10 that you can't average the four reactor types  
11 when you have such a big difference between  
12 the reactor types. So if one wants to use the  
13 maximum exposure, that's better than using the  
14 average.

15 But I'll tell you the truth. I  
16 would prefer to come back in another meeting  
17 when I would study it before the meeting.

18 CHAIR MUNN: Does anyone have any  
19 objection to our carrying this to our next  
20 meeting so that Joyce can address it then?

21 MEMBER ZIEMER: No.

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1 CHAIR MUNN: All right, that's  
2 fine. We'll do that, Joyce.

3 DR. LIPSZTEIN: Okay. Thank you.  
4 Thank you so much.

5 CHAIR MUNN: We will continue to  
6 carry OTIB-54 as an open item with you as the  
7 lead, and I will indicate a response expected  
8 on our next agenda.

9 DR. LIPSZTEIN: Thank you.

10 CHAIR MUNN: Thank you.

11 Now then our last of our four  
12 outstanding letters is PROC-80, correct?

13 DR. OSTROW: This is Steve Ostrow.

14 The same comment as in the other  
15 procedure, first paragraph, they have written  
16 down now "provides ORAU personnel with  
17 guidance." We should just change that to  
18 "provides guidance."

19 MEMBER ZIEMER: Where is that?

20 CHAIR MUNN: About the one, two,  
21 three, four, fifth line. Okay. Just after

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1 "PROC-80," "provides guidance and  
2 instruction."

3 MEMBER ZIEMER: But you have the  
4 "its" at the end of the sentence, and that now  
5 has to change then.

6 CHAIR MUNN: Just "independent  
7 quality audits and assessments," period.

8 MEMBER ZIEMER: "Assessments" of  
9 something.

10 CHAIR MUNN: No, just "conduct  
11 independent quality audits and assessments."

12 MEMBER ZIEMER: Well, that could be  
13 of personnel or something.

14 MR. MARSCHKE: We could put "ORAU"  
15 there. We could change "its" to "ORAU."

16 CHAIR MUNN: Well, but in the  
17 preceding sentence, we have said, "a system to  
18 oversee and maintain the overall quality of  
19 its work product and processes."

20 MEMBER ZIEMER: Okay. Very good.  
21 Okay, you're good.

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1 CHAIR MUNN: We've identified that  
2 prior.

3 MEMBER ZIEMER: Got it.

4 CHAIR MUNN: And we continue on in  
5 that same vein.

6 DR. OSTROW: This is Steve.

7 CHAIR MUNN: Yes?

8 DR. OSTROW: I have a suggestion.  
9 I would get rid of the entire first sentence,  
10 the one that begins with "Oak Ridge Associated  
11 University Team." I would get rid of that  
12 entire sentence. And just for the next  
13 sentence, I would say, "the procedure being  
14 reviewed, conduct of quality -- provides  
15 personnel conducting quality assurance audits  
16 with guidance and instruction to administer  
17 and conduct independent quality audits and  
18 assessments," something to that effect. I  
19 would get rid of the whole first sentence.

20 CHAIR MUNN: Well, one could do  
21 that although I don't think we have any

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1 objection to the first sentence the way it is,  
2 actually, Steve.

3 DR. OSTROW: Oh, okay. I just  
4 thought it would make it just a little bit  
5 shorter.

6 CHAIR MUNN: It clarifies; it gives  
7 a good feel for what this particular procedure  
8 is supposed to do.

9 DR. OSTROW: Okay.

10 MEMBER ZIEMER: Do we need the  
11 "QMS" in here?

12 CHAIR MUNN: Not necessary --

13 MEMBER ZIEMER: It's not repeated  
14 anywhere, is it? Do we need to repeat the  
15 "PROC-80?" It's in the title.

16 CHAIR MUNN: Yes, but it never  
17 hurts to repeat it.

18 MEMBER ZIEMER: Okay, your call.

19 CHAIR MUNN: Down under "Resolution  
20 of Findings," we refer to "SC&A," and we don't  
21 want to. The technical contractor's comments

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1 would be included.

2 DR. OSTROW: I think we're using  
3 the formulation "the Advisory Board technical  
4 contractor."

5 CHAIR MUNN: Okay.

6 MEMBER ZIEMER: Under the comments,  
7 can you clarify? These comments are two  
8 findings. How would you include the findings  
9 in revisions of the procedures?

10 CHAIR MUNN: Well, where? Where  
11 again?

12 MEMBER ZIEMER: Under "Resolution  
13 of Findings," the last sentence says, "NIOSH  
14 concluded by stating that it would consider  
15 whether" -- I guess you would say -- "the  
16 contractor's comments would be included in  
17 future revisions of the procedure."

18 Well, there's two comments which  
19 are findings, but how do you include the  
20 findings in the procedure?

21 MR. KATZ: It would be addressed, I

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1 guess is what was meant.

2 DR. OSTROW: In front of the word  
3 "included," the findings won't be included,  
4 the --

5 MR. MARSCHKE: Addressed.

6 MEMBER ZIEMER: "Addressed" would  
7 be better.

8 DR. OSTROW: Yes.

9 MR. MARSCHKE: I don't see how it  
10 resolves the finding because it says they're  
11 going to consider it, but they may decide that  
12 they're not going to address it.

13 MEMBER ZIEMER: Well, the findings  
14 are in the form of suggestions --

15 MR. MARSCHKE: Oh, okay.

16 MEMBER ZIEMER: -- I think is what  
17 is stated. So they don't have the impetus of  
18 a regular finding, I don't think.

19 MR. HINNEFELD: Yes, instead of  
20 saying that there's a deficiency here, it was  
21 sort of like it would be more useful --

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1                   MEMBER ZIEMER: It is a suggestion.

2                   MR. HINNEFELD: Yes, or it would be  
3 helpful if.

4                   CHAIR MUNN: Yes, it would be  
5 better if you did this.

6                   I believe it's reading okay.

7                   MEMBER ZIEMER: I don't think you  
8 need the colon in the first sentence. Just  
9 say, "NIOSH responded to the first finding by  
10 stating that this procedure is one of a number  
11 of implementing procedures under a QA system  
12 and by outlining the overall system  
13 described." It's still a funny sentence,  
14 isn't it?

15                  CHAIR MUNN: Well, I didn't even  
16 see that colon.

17                  MEMBER ZIEMER: They "responded to  
18 the first finding by stating" duh, duh, duh,  
19 "and by outlining --

20                  MR. MARSCHKE: There was a comma  
21 there instead of a colon. Do you want the

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1 comma back or do you want to just get rid of  
2 everything?

3 MEMBER ZIEMER: Maybe it's  
4 "responded to the first finding," A, by  
5 stating this and, B, by outlining something.  
6 It's structured kind of funny as it stands  
7 with a colon.

8 CHAIR MUNN: Let's do that.

9 MEMBER ZIEMER: "Responded to the  
10 first finding as follows" dot, dot, or --

11 CHAIR MUNN: Let's do that, A  
12 and --

13 MEMBER ZIEMER: A and B?

14 CHAIR MUNN: -- and B. Okay.

15 MEMBER ZIEMER: And, then, the last  
16 sentence in that paragraph, where you say  
17 "NIOSH concluded by stating," I think you can  
18 just say and you can leave out the "finally"  
19 and just say, "NIOSH also indicated that it  
20 would consider," or "NIOSH also stated." Just  
21 make it shorter. Or "NIOSH also agreed to

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1 consider addressing the contractor's comments  
2 in future revisions." I'm just looking for a  
3 way to make it more concise.

4 CHAIR MUNN: Okay. "Finally, NIOSH  
5 also agreed to consider whether the Advisory  
6 Board technical contractor's comments would be  
7 addressed in future revisions of the  
8 procedure."

9 MEMBER ZIEMER: Yes, that's good.

10 CHAIR MUNN: All right. Everybody  
11 on the phone all right with those?

12 (No response.)

13 All right. I will do my best to  
14 get these updates to you fairly quickly, so  
15 that we will be prepared to get them where  
16 they need to be, which is in the hands of  
17 others.

18 MR. KATZ: Wanda?

19 CHAIR MUNN: Yes?

20 MR. KATZ: I would just suggest  
21 maybe you guys all want to -- this Work Group

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1 wants to think about this process going  
2 forward. Because with 150, or whatever it is,  
3 I don't know what the large number is, but  
4 having this sort of intensive review will not  
5 be functional for going forward.

6 CHAIR MUNN: No, it won't.

7 MR. KATZ: So you may want to give  
8 some thought as to whether this creates a  
9 clear enough path because a number of the  
10 things you've ironed out --

11 MEMBER ZIEMER: Well, I think what  
12 we have done here are mainly editorial, and I  
13 think they see the pattern in terms of  
14 acronyms. I mean in terms of content, I think  
15 they have done a good job.

16 MR. KATZ: Right.

17 MEMBER ZIEMER: I don't see why we,  
18 you know, can do much --

19 MR. KATZ: Right. So what I was  
20 going to say is, I mean, a number of these  
21 things you have addressed are sort of

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1 generically they can address going forward.

2 MEMBER ZIEMER: Right.

3 MR. KATZ: But then individually,  
4 you find differences with this and that with  
5 each one. I think you really don't have the  
6 time going forward to worry about those little  
7 differences in how you would do it going  
8 forward. I think you'll need to decide that  
9 you're going to leave well enough alone on  
10 those, if you want to get these things  
11 produced in any kind of timely fashion and use  
12 your resources, husband your resources well.

13 CHAIR MUNN: The other thing that  
14 we may want to consider is doing a simpler  
15 version of what we did with our first pilot  
16 project, which is have two or three of the  
17 Subcommittee members take a look at them and  
18 make some preliminary edits before they come  
19 to this group. That may be feasible.

20 MEMBER ZIEMER: Or do they even  
21 need to come to us? That is what he is

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1 asking.

2 MR. KATZ: I'm more getting at,  
3 really, if this Subcommittee -- you're talking  
4 about a lot of resources if you really intend  
5 to do this with each. I would suggest that  
6 you -- I mean once you feel like you're on  
7 track, that you just sort of let them go, and  
8 you may want to spot-check them at times,  
9 but --

10 MEMBER ZIEMER: Or you simply  
11 distribute them and say, okay, here's this  
12 batch of, I don't know, 10 or 12 or 20, and  
13 you have until 10 days or something. And if  
14 we don't hear anything, then that's it.

15 MR. KATZ: They stand as they are.

16 MEMBER ZIEMER: Yes.

17 DR. MAURO: This is John. It's  
18 interesting that we're going through this  
19 process because, normally, like when we  
20 deliver a Site Profile review, as soon as we  
21 deliver it, it goes up and then it becomes the

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1 subject for technical discussion, sort of  
2 SC&A's work product, not necessarily accepted  
3 by the Board or the Work Group, but it's  
4 SC&A's work product which becomes a draft.  
5 That's a working document.

6 This is a different kind of product  
7 that we have never prepared before where when  
8 it finally goes up on the web, is this going  
9 to be a Board product?

10 CHAIR MUNN: Yes.

11 DR. MAURO: As opposed to an SC&A  
12 work product?

13 CHAIR MUNN: Yes.

14 MR. KATZ: We've spoken about this  
15 many times.

16 CHAIR MUNN: Very clear.

17 DR. MAURO: Yes, that's why I  
18 raised the question. If it is going to be a  
19 Board product, then, Ted, that's why I'm  
20 bringing this up now. I guess there's no way  
21 to avoid having to go through this process. I

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1 think we have another batch of 15 ready, I  
2 believe.

3 Steve, when I last spoke to you, I  
4 think you had 15 more that you were working  
5 on?

6 DR. OSTROW: We sent a batch of 12.

7 DR. MAURO: Twelve? Okay.

8 CHAIR MUNN: Yes.

9 DR. MAURO: Yes.

10 MR. KATZ: I understand that these  
11 are -- I have that well in mind that these  
12 represent the Board. But, again, it doesn't  
13 mean that the Board has to write them just  
14 because they're representing the Board.

15 And, again, I think there just  
16 simply aren't the resources for this process  
17 to operate on a very large number of these and  
18 this Subcommittee get anything else done. So  
19 I think you just have to -- I mean if the  
20 Subcommittee is generally happy with the  
21 substantive content of these and generally

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1 happy at some point that these are  
2 communicating in a simple enough fashion that  
3 many people in the public can grasp them, then  
4 I think it needs to sort of let go of the  
5 item-by-item review.

6 Except, I mean I think, Paul, your  
7 suggestion that Board Members can have a  
8 window of opportunity to comment and you can  
9 take those in, but -- that would be practical.

10 But having the Subcommittee actually sitting  
11 around the table and editing these by  
12 committee is just really resource-intensive,  
13 and I'm not sure it's the best way to use this  
14 Subcommittee.

15 CHAIR MUNN: It probably is not  
16 although my personal view is this Subcommittee  
17 needs to be the venue by which these materials  
18 are presented to the Board. And whether we  
19 look at them first or whether we send them as  
20 they are provided to the Board with a request  
21 for comments is something that we should, I

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1 think, make a decision.

2 MEMBER ZIEMER: Here's an  
3 alternative is to ask the Board to authorize  
4 us to approve them, and the approval can be  
5 similar to the way the Secretary gets approval  
6 for his actions on the SECs. And that is, if  
7 the Subcommittee Members don't object to  
8 anything, then they are adopted.

9 You know, I think, let's say we had  
10 the next 12 and we distribute those to the  
11 five of us, if the Board authorizes that, and  
12 we each have a week or 10 days to respond, and  
13 if we have no comments, fine. If we have  
14 particular heartaches, we can always get on  
15 the phone.

16 But I think you're quite right; we  
17 have to be efficient. These are only  
18 summaries of what's been done. So we don't  
19 want to spend more time on summarizing what  
20 we've done than the time we spent on doing the  
21 work to get there.

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1 CHAIR MUNN: On the original work,  
2 yes, which can happen.

3 (Laughter.)

4 MEMBER ZIEMER: Progress this month  
5 consisted of writing the progress reports.

6 CHAIR MUNN: I like your  
7 suggestion, Paul. That seems feasible to me.

8 And perhaps we can solidify that at our next  
9 meeting.

10 MEMBER ZIEMER: Maybe even on the  
11 phone meeting.

12 MR. KATZ: We have a teleconference  
13 next week.

14 CHAIR MUNN: Yes. We can talk  
15 about that. We have several things.

16 MR. KATZ: Thank you.

17 CHAIR MUNN: Yes. Our Subcommittee  
18 report will have a number of things.

19 All right. The time is approaching  
20 five o'clock.

21 MEMBER ZIEMER: Yes.

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1                   CHAIR MUNN:    I don't believe that  
2                   we can address anything else that we have on  
3                   our agenda other than our calendar, unless  
4                   there is something outstanding on one of these  
5                   things that someone is going to bleed if we  
6                   don't address today.    If so, speak now or  
7                   forever hold your peace because we're going to  
8                   start looking at calendars.

9                   MR. KATZ:     No one has any blood  
10                  left.

11                  CHAIR MUNN:     Let's look at the  
12                  calendar.

13                  Well, both NIOSH and SC&A have a  
14                  feeling for what we have on the agenda for  
15                  them next time.    So is our ordinary rule of  
16                  thumb of six weeks or so reasonable for our  
17                  next meeting?

18                  MR. HINNEFELD:   Six weeks is pretty  
19                  fast.

20                  MR. MARSCHKE:   Isn't there a 90-day

21                  --

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1 DR. OSTROW: This is Steve Ostrow.  
2 Look at the calendar. You have the  
3 Augusta meeting on February 23rd.

4 CHAIR MUNN: We're not doing  
5 anything in February. I can guarantee you.  
6 I'll look at March. You know, I start looking  
7 at March personally.

8 MEMBER ZIEMER: Well, that's more  
9 than six weeks.

10 DR. MAURO: While you folks are  
11 looking for a date, one of the things I  
12 recall, when we attacked OTIB-70/54, those we  
13 picked and targeted because there were many  
14 comments. And by clearing them, we changed a  
15 lot. Because if I remember, we were about 80  
16 percent complete, and there were over 500-and-  
17 something comments on the 100-or-so  
18 procedures.

19 CHAIR MUNN: Yes.

20 DR. MAURO: And we actually either  
21 closed or placed into abeyance about 80

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1 percent of them with this. Assuming that  
2 going forward we end up closing out the  
3 various items that are before us on 70 and 54,  
4 we are probably over 90 percent. I would like  
5 to see what's sort of left.

6 Steve, when the system is working  
7 where we can generate these kinds of  
8 information, queries on the database to see,  
9 okay, which ones are still open, which ones  
10 are still in progress, so that, again, we  
11 could plan for the next meeting. In addition  
12 to, let's say, closing out 70 and 54 as best  
13 we can, targeting specific ones that, let's  
14 say, both SC&A and NIOSH would say, yes, let's  
15 go after this one and one. Because I think we  
16 are asymptotically approaching completion.

17 CHAIR MUNN: Let's hope that that's  
18 the case. But when I look at the number of  
19 carryover items, even though they are not  
20 large, we continue those last one, two, three,  
21 four, five, six items that we have after our

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1 four o'clock item on our agenda.

2 DR. MAURO: Yes. Okay.

3 CHAIR MUNN: They have not been  
4 touched for at least three meetings.

5 DR. MAURO: Okay.

6 CHAIR MUNN: I will move those up  
7 earlier in the day, yes, I certainly will, so  
8 that we will see those. And I will expect by  
9 our next meeting that we will have Joyce's  
10 input on 54 and NIOSH input on their items  
11 from 54 as well.

12 So if we're going to approach those  
13 things in March, then I think is an  
14 appropriate time for us to have the discussion  
15 you're suggesting right now on next steps and  
16 whether there are next groupings or not.

17 I'm very concerned about our loss  
18 of grouping ability from our database,  
19 primarily because that has given us a good  
20 handle on how to address the Secretary when we  
21 give our report.

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1 MR. KATZ: It will get repaired.

2 CHAIR MUNN: Yes, it will get  
3 repaired. It will be fine.

4 So I'm looking at the early part of  
5 March.

6 MR. KATZ: Well, I would think not  
7 the early part because, I mean, Stu was just  
8 saying, make it too quick, and we're not going  
9 to be making progress. So we'll be meeting  
10 but not usefully.

11 CHAIR MUNN: But that's two months  
12 from now.

13 MR. KATZ: Well, six weeks, even  
14 six weeks, takes you, right --

15 CHAIR MUNN: Well, we don't want to  
16 meet until after Augusta, well after Augusta.

17 MR. KATZ: Right.

18 CHAIR MUNN: So if we met the  
19 second week after Augusta --

20 MR. KATZ: I mean Augusta week is  
21 useless. There's no progress being made

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1 during Augusta.

2 CHAIR MUNN: No, that's true.

3 MR. KATZ: So that's not --

4 CHAIR MUNN: True. The Dose  
5 Reconstruction Subcommittee meets on the 14th.

6 MR. KATZ: Yes, and TBD-6001 meets  
7 on the 15th.

8 CHAIR MUNN: I thought TBD-6001 no  
9 longer existed.

10 MR. KATZ: No, there's still a Work  
11 Group.

12 MEMBER ZIEMER: No, they're still  
13 meeting.

14 MR. KATZ: They're still dealing  
15 with the -- nice one, Wanda.

16 CHAIR MUNN: Sorry.

17 (Laughter.)

18 MEMBER ZIEMER: Just going to  
19 rename them, right?

20 MR. KATZ: No, I think we like the  
21 name.

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1 (Laughter.)

2 CHAIR MUNN: Can we stand to have  
3 three that week or not? Does that kill  
4 everybody?

5 MR. KATZ: Well, you know, Mark,  
6 are you still on the line?

7 (No response.)

8 I think that tends to be hard for  
9 Mark, in particular, who has a lot of other  
10 duties.

11 CHAIR MUNN: He has a day job?

12 MR. KATZ: He has a day job --

13 CHAIR MUNN: Darn.

14 MR. KATZ: -- which is more than a  
15 day job by itself. And he, I think, is on  
16 6001 as well. So I think getting him for  
17 three days in one week would be really a  
18 stretch.

19 CHAIR MUNN: So that's pushing us  
20 to the third week in March, no matter what,  
21 right?

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1 MR. KATZ: Yes. So the week of the  
2 21st seems like -- how is that for folks?

3 MEMBER ZIEMER: Okay.

4 CHAIR MUNN: Choose a day.

5 MR. KATZ: What day of the week  
6 works? Middle of the week, so that there's  
7 no --

8 MR. HINNEFELD: I don't think  
9 Friday works for me, but --

10 MR. KATZ: Yes, but how about the  
11 23rd, Wednesday?

12 CHAIR MUNN: Or the 22nd, Tuesday.

13 MR. KATZ: Or the 22nd.

14 MR. HINNEFELD: Any other day other  
15 than Friday.

16 MR. KATZ: Is the 22nd good for --

17 CHAIR MUNN: The 22nd is good?

18 MR. KATZ: Mike, are you still with  
19 us?

20 MEMBER GIBSON: Yes, the 22nd is  
21 open.

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1                   MR. KATZ:    Okay.    So let's pen in  
2                   the 22nd, and I don't know whether that works  
3                   for Mark.    Okay, March 22nd.

4                   CHAIR MUNN:   Dick had said he was  
5                   fairly sure he would be free during that  
6                   segment of time.

7                   MR. KATZ:    Okay.    Good.    Yes, then  
8                   we have Dick.

9                   CHAIR MUNN:   So I will notify him  
10                  immediately by email.

11                  MR. KATZ:    Yes, Mark and Dick.

12                  CHAIR MUNN:   Okay.

13                  MR. KATZ:    You'll probably catch  
14                  Dick at the airport.

15                  CHAIR MUNN:   We'll do that as soon  
16                  as we leave here.

17                  MR. HINNEFELD: Starting time?   Nine  
18                  o'clock?

19                  MR. KATZ:    Yes.

20                  CHAIR MUNN:   Nine o'clock.

21                  MR. HINNEFELD:   Okay.

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1                   CHAIR MUNN: Anything else for the  
2 good of the order?

3                   (No response.)

4                   And on the stroke of five o'clock,  
5 we are adjourned.

6                   MR. KATZ: Thank you, everyone, for  
7 hanging with us on the line.

8                   (Whereupon, at 5:00 p.m., the  
9 proceedings in the above-entitled matter were  
10 adjourned.)

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