

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.

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+ + + + +

ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

+ + + + +

SUBCOMMITTEE ON PROCEDURES REVIEW

+ + + + +

WEDNESDAY
OCTOBER 13, 2010

+ + + + +

The Subcommittee 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 GIBSON, Member
MARK GRIFFON, Member*
RICHARD LEMEN, Member*
PAUL ZIEMER, Member

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ALSO PRESENT:

TED KATZ, Designated Federal Official
NANCY ADAMS, NIOSH Contractor*
ISAF AL-NABULSI, DOE*
HANS BEHLING, SC&A*
ROBERT BURNS, ORAU*
STUART HINNEFELD, DCAS
JENNY LIN, HHS
JOHN MAURO, SC&A
STEPHEN MARSCHKE, SC&A
STEVE OSTROW, SC&A
MICHAEL RAFKY, HHS*
MUTTY SHARFI, ORAU*
ELYSE THOMAS, ORAU*
TOM TOMES, DCAS
BRANT ULSH, DCAS

*Participating via telephone

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

2 9:00 a.m.

3 MR. KATZ: So good morning,
4 everyone in the room and on the line. This is
5 Ted Katz with the Advisory Board on Radiation
6 and Worker Health. This is the Subcommittee
7 on Procedures Review, and we are just getting
8 started here. We will begin with roll call.
9 Board Members in the room?

10 CHAIR MUNN: Wanda Munn, Board
11 Member, Chair of the Subcommittee on
12 Procedures.

13 MEMBER ZIEMER: Paul Ziemer, Board
14 Member.

15 MR. KATZ: And Board Members on
16 the line?

17 MEMBER LEMEN: Richard Lemen,
18 Board Member.

19 CHAIR MUNN: Good morning,
20 Richard.

21 MEMBER LEMEN: Good morning.

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1 MEMBER GRIFFON: Mark Griffon,
2 Board Member.

3 CHAIR MUNN: Good morning, Mark.

4 MEMBER GRIFFON: Hi.

5 MR. KATZ: Okay, and do we have
6 Bob Presley?

7 Okay, NIOSH, ORAU Team in the
8 room.

9 MR. HINNEFELD: Stu Hinnefeld,
10 DCAS.

11 DR. ULSH: Brant Ulsh with DCAS.

12 MR. KATZ: And on the line.

13 MS. THOMAS: Elyse Thomas with the
14 ORAU Team.

15 MR. SHARFI: Mutty Sharfi, ORAU
16 Team.

17 MR. KATZ: SC&A Team in the room.

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

19 MR. MARSCHKE: Steve Marschke,
20 SC&A.

21 MR. KATZ: And anyone from SC&A on

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1 the line?

2 DR. BEHLING: Hans Behling.

3 CHAIR MUNN: Good morning, Hans.

4 MR. KATZ: Good morning.

5 DR. BEHLING: Good morning.

6 MR. KATZ: And now HHS, other
7 federal officials, or contractors in the room.

8 MS. LIN: Jenny Lin with HHS.

9 MR. KATZ: And on the line.

10 MR. RAFKY: Michael Rafky, HHS.

11 MR. KATZ: Welcome, Michael.

12 DR. AL-NABULSI: Isaf Al-Nabulsi,
13 DOE.

14 MR. KATZ: Hi, Isaf. Very good.
15 And then are there any members of the public
16 on the line?

17 Okay. Remind everyone to mute
18 your phones when you're not speaking on the
19 phone. *6 if you don't have a mute button; *6
20 to take it off. Wanda, it is your agenda.

21 CHAIR MUNN: Thank you so much,

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1 Ted. I trust that everyone who's on line --
2 hold on just a moment. We need to make sure
3 that everyone online who needs a copy of the
4 agenda has it, and if you have not checked
5 your email, I sent a draft markup of some of
6 the documents we will be dealing with this
7 afternoon out very late last night.

8 Especially Richard and Mark, do
9 you have all of those items?

10 MEMBER GRIFFON: I think I have
11 everything, Wanda, yes.

12 CHAIR MUNN: All right.

13 MEMBER LEMEN: This is Richard. I
14 do.

15 CHAIR MUNN: Good. All right.

16 We're going to try very hard to
17 not take up as much of your time as we did
18 during our last meeting dealing with the
19 problems we have with our electronic database.

20 But since we are still having some problems,
21 and we have one of the database experts here

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1 today, we're going to ask if Steve will start
2 by outlining some of the major problems we
3 have with the document list as we currently
4 have it, what we need to do that we have not
5 been able to do so far. We don't intend to
6 spend more than about a half-hour on that.

7 But if you will bear with us and
8 if you can bring that database up on your
9 screens, perhaps you can follow along with us
10 as we go through some of our major issues.

11 Steve?

12 MR. MARSCHKE: Okay. The first
13 problem that we have been having is we don't
14 know how to add -- right now, we have a list
15 of 91 documents that are in the database, but
16 it's not a complete list. There are documents
17 that SC&A has reviewed or is in the process of
18 reviewing which are not included in this 91.
19 And we don't know how to add those documents
20 or if those documents can be added to the
21 database. So maybe it's a problem with us not

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1 being familiar with the database or
2 knowledgeable in the database. Right now, we
3 don't know how to add those documents.

4 Examples are what would be PER
5 documents, IG documents, report documents,
6 which are not available to SC&A to add our
7 issues that we have associated with them or
8 not.

9 Now one of the interesting facts
10 is if you click on the SC&A Finding Status
11 Report, some of these documents do show up in
12 this one page. Like IGs, PERs, they do show
13 up on this particular page. But then when you
14 go back to the main page of the report here
15 and you do a document search for IGs, for
16 example, and you go look for IGs, they don't
17 show up. They don't show up here in the list.

18 So I don't know what is going on there.

19 And the same is true with the
20 PERs. You saw the PERs that were on that one
21 table. But when you look for PERs on this

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1 main list, PERs don't show up.

2 So we would like to be able to
3 access these other documents because in some
4 cases we have issues on these documents, and
5 we would like to add those issues to the
6 database, in particular, PER-009, PER-0012,
7 and all the ones that you saw in that table
8 that were existing issues.

9 MEMBER ZIEMER: And the flip side
10 of that, you are getting some documents that
11 don't appear to be PERs. So why are those
12 showing up?

13 MR. MARSCHKE: When we did this, I
14 don't know what it is searching for when you
15 do the document search. It could be searching
16 into the text or something. I don't know --

17 MEMBER ZIEMER: Why those showed
18 up?

19 MR. MARSCHKE: -- why these show
20 up.

21 MEMBER ZIEMER: Maybe they mention

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1 PER.

2 MR. MARSCHKE: Maybe they mention
3 PER somewhere in the text or something
4 someplace along the line or what. That I
5 don't know. But, usually, when you put in
6 document search and you put in something like
7 OTIB up here --

8 MEMBER ZIEMER: Is it really going
9 into the text when it does that?

10 MR. MARSCHKE: I have no idea. I
11 don't know.

12 MR. TOMES: It is not going into
13 the text of the actual document. It is going
14 into the text of the details of the record.
15 So for the first one, the OTIB-70, if you
16 clicked inside there and you looked at the
17 details for that, that's where it's searching.
18 It's not actually searching through the
19 actual OTIB itself.

20 MEMBER ZIEMER: Right. Yes.

21 MR. TOMES: In here, there's going

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1 to be periods. Yes, periods is why PER shows
2 on that one. I mean it's in the document
3 title.

4 MEMBER ZIEMER: So it found that,
5 but it didn't find the actual document
6 identity?

7 MR. TOMES: Well, it doesn't look
8 like we're searching on document number.

9 MR. MARSCHKE: You are searching
10 on document -- well, that I don't know.
11 Because when you look in an OTIB, when you do
12 a document search on OTIB, all the OTIBs show
13 up. It must search on the number and the
14 title.

15 MR. HINNEFELD: If you would put
16 your document status filter on completed
17 documents, the document filter is all the way
18 to the left, and there's a dropdown. Then, if
19 you filter on document type, document type
20 filter, which is the next one over, and put
21 implementation guides --

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1 MR. TOMES: Right, they're not
2 there.

3 MR. HINNEFELD: I guess I've got
4 different rights or something.

5 MR. TOMES: Yes.

6 CHAIR MUNN: And if you click on
7 Add New Document, what happens?

8 MR. MARSCHKE: Add New Document,
9 I'm afraid to touch that because, basically,
10 it's something that it puts me in as -- it's a
11 brand new document. I'm not looking for a
12 brand new document. I'm looking for an OTIB
13 or a PER-009 or IG-4 or something --

14 CHAIR MUNN: Yes.

15 MR. MARSCHKE: -- an existing
16 document. It's not really a new document.
17 You know, I'm not creating a new document
18 here.

19 CHAIR MUNN: No.

20 MR. MARSCHKE: I'm just looking to
21 add one, an existing document, and make it

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1 available to this database.

2 MR. TOMES: Okay. But you would
3 have to add it to the database.

4 MR. MARSCHKE: I don't know. Is
5 that what this is doing?

6 MR. TOMES: Because there's a
7 difference between the documents and the
8 database. So PER-009 does exist as a
9 document, but if it doesn't exist in the
10 database -

11 MR. MARSCHKE: So is this adding
12 it to the database, or is this adding a new
13 document in total?

14 MR. TOMES: This does nothing with
15 documents.

16 MR. MARSCHKE: Oh, okay.

17 MR. TOMES: This is all just
18 database entries that allows the tracking of
19 the documents.

20 MR. MARSCHKE: Okay. So I can
21 put, if I put in PER-009 here --

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1 MR. TOMES: Yes.

2 DR. MAURO: Do I understand what
3 you're saying? So our review of PER-009,
4 which has been completed and delivered --

5 MR. TOMES: Right.

6 DR. MAURO: -- this is the way we
7 would load that?

8 MR. TOMES: This is the way you
9 would load it in.

10 MR. MARSCHKE: So I could load it
11 in here, and then I'd have to type in the
12 title and every --

13 MR. HINNEFELD: For consistency,
14 those are OCAS.

15 MR. MARSCHKE: OCAS? Okay. Maybe
16 that's why I can't find it. OCAS PER-009.
17 Will it go out and find, does it --

18 MR. TOMES: It's all based on what
19 you enter in.

20 MR. MARSCHKE: What I enter in?

21 MR. TOMES: Yes.

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1 MR. MARSCHKE: Okay. So I don't
2 know what -- I would have to get the title and
3 everything from someplace. Okay, we can use
4 that, I guess.

5 MR. KATZ: Is there any way to
6 have a complete document inventory on a
7 dropdown and then add things, find them and
8 add them, as opposed to having to remember all
9 those details?

10 MR. TOMES: Well, we don't know
11 what the documents are. I mean because --

12 MR. KATZ: Oh, I see.

13 MR. TOMES: -- if we don't create
14 the documents -- this is just tracking the
15 documents that have been created. So this is
16 what that's going to eventually be.

17 MR. HINNEFELD: The complication
18 there is that although this system is designed
19 to be the system by which we begin and prepare
20 a document de novo, it's not been utilized
21 that way.

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1 MR. TOMES: Right. I understand.

2 MR. HINNEFELD: And so there are a
3 lot of documents because of that that were
4 generated outside this tracking system that
5 have not been entered.

6 MR. TOMES: Yes.

7 MR. HINNEFELD: Now we're going to
8 have a little bit of a complication here
9 because this is designed to deal with all of
10 our groups and subcommittees, as well as to
11 deal with our internal document preparation.
12 So various users have different rights in
13 terms of what they see when they bring this
14 thing up.

15 Part of this might be some of that
16 because I can see the IGs in the findings
17 because I've got like -- so I can see them.
18 So before we go too far with adding new today,
19 I think we need to have our design meeting and
20 sort out a few more questions like that.

21 You know, our design so far has

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1 been my best estimates on who would do what,
2 who would enter what, how many people need
3 write authority, how many people need read
4 authority.

5 So this Work Group -- and there
6 might be a good -- well, I'll worry about
7 design at the design meeting. There are many
8 people who will be in multiple Work Groups and
9 therefore should be able to specify which Work
10 Group are they going in under so that they can
11 see that Work Group's stuff. So anyway, there
12 are some things to deal with there.

13 MR. TOMES: Ideally, what's going
14 to happen is if PER-009 started with this, it
15 would be created, it would go through our
16 internal reviews. Once it got approved, then
17 it would be available to the Board and to the
18 Work Group.

19 MR. HINNEFELD: Available to the
20 Work Group to review, and that review would
21 move it into this Work Group's section of the

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1 database.

2 MR. TOMES: But we're kind of
3 hopping in the middle here.

4 MR. HINNEFELD: Yes.

5 MR. TOMES: And so if a document
6 doesn't exist, it just needs to get added.

7 MR. MARSCHKE: Well, the document
8 doesn't exist in this tracking system, but it
9 does exist --

10 MR. TOMES: Right. No. Right.
11 As far as this tracking system is concerned,
12 it doesn't exist.

13 MR. MARSCHKE: It does not exist.

14 DR. MAURO: Well, that's a
15 convenience to be able to immediately access
16 the original document that we reviewed.

17 CHAIR MUNN: Yes, that's great.
18 That's marvelous.

19 DR. MAURO: That's wonderful, but
20 more importantly, though, is being able to
21 access the tracking of the review process for

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1 that document.

2 CHAIR MUNN: Yes.

3 DR. MAURO: And that's where we're
4 struggling.

5 CHAIR MUNN: And there are
6 interesting glitches. For example, Steve just
7 was able to pull up IG documents on his list,
8 but mine doesn't. And it's probably something
9 I'm doing wrong.

10 MR. MARSCHKE: The IG documents?

11 CHAIR MUNN: Yes.

12 MR. MARSCHKE: If you go up here
13 and click on this reports, the only way I can
14 get them is click on this reports. Then you
15 have this SC&A Finding Status Report. If you
16 click on that, that is how I can see the IG
17 documents. I see they are there in some form,
18 but I can't access them from the other menu.

19 CHAIR MUNN: Yes, and we should be
20 able to.

21 MR. MARSCHKE: And we should be

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1 able to.

2 CHAIR MUNN: Absolutely. So are
3 we going to be able to work with this at all
4 today?

5 MR. MARSCHKE: Yes. Well, we can
6 work with it the way we have -- I think we can
7 work with it.

8 Now the second problem that I was
9 having last week was kind of a new issue. I
10 was not able to add responses. Now I have
11 been told that that's been corrected.

12 What I was trying to do, after the
13 last meeting, we made a lot of status changes
14 to OTIB-70 issues, and I was supposed to go
15 back in and add a response explaining why we
16 made these changes. We made all these changes
17 to in progress. And I was supposed to add a
18 response stating that, to the effect that, in
19 July, that the status was changed at the July
20 26th meeting by the Subcommittee. And when I
21 tried to do that, I was getting error

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1 messages.

2 So let's just give it a try now.

3 CHAIR MUNN: Well, yes, let's give
4 it a try with the first item that we're going
5 to have under discussion anyhow, the TIB-14
6 review status. I can get to TIB-14 on the
7 document title, and then if I check the
8 findings, or active findings, whichever the
9 case may be -- active findings, I suppose --
10 if we click on active findings, then what I
11 get is the document title and Board comments,
12 the document history.

13 DR. MAURO: So right now we're
14 functional, at least with respect to that.

15 MR. MARSCHKE: I can do that, yes.

16 CHAIR MUNN: That part is
17 functional.

18 DR. MAURO: Good. Good.

19 MR. MARSCHKE: Now Wanda has gone
20 to TIB-14?

21 CHAIR MUNN: Yes. Then I went to

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1 the active findings. And now I'm looking down
2 in document history, where we have a lot of
3 ORAU and SC&A activities, comments, actions.

4 And the last thing I see is an
5 SC&A response saying they're going to review
6 the TBD to ensure the issue has been addressed
7 and the status has been changed to in
8 progress.

9 So this is this status -- where do
10 I see that this status is now in progress?

11 MR. MARSCHKE: Under the findings.
12 Click on the Board Review Comments admin.
13 You see the status, in progress.

14 CHAIR MUNN: Here we are, yes.
15 Okay.

16 MR. MARSCHKE: That was one of the
17 other things that we had talked about at one
18 of the other meetings, was getting rid of this
19 screen, basically jumping immediately from the
20 main menu, jumping immediately from this menu
21 to the issues menu, just cutting out this

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1 screen here because it's of no interest to
2 this --

3 MR. TOMES: Right. Right. That
4 is still on our list of enhancements we need
5 to -- at the last meeting in July, we walked
6 out with about 18 different features and
7 requests. We currently have five that we
8 still need to enhance, and those are more
9 long-term, more time-intensive.

10 MR. MARSCHKE: What we would like
11 to be able to do, again, the way SC&A works is
12 I'm in charge, basically, of this database.
13 And we have other SC&A scientists who are
14 reviewing the documents, reviewing the
15 responses, and finding the issues and finding
16 the findings, and so on and so forth.

17 So when NIOSH gives us a response,
18 I kind of funnel it back to the people who are
19 actually doing the reviews, and they look it
20 over and see whether or not they agree with
21 the response and then make a recommendation as

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1 to the change. Then what I would do is I
2 would enter that information into the
3 database.

4 But not all these people who are
5 doing the reviews have access to this
6 database. They don't know how to, you know,
7 some of them probably don't even know it
8 exists.

9 So what we would like to be able
10 to do is be able to look for a particular
11 document, TIB-14 in this example, we would
12 like to be able to take and print out all the
13 issues and the history to all the issues,
14 maybe from this screen here. Basically, we
15 could have a button here that says, create a
16 PDF file that has --

17 MR. TOMES: Is there a reason why
18 we can't give them read-only access to the
19 database? That way, they have the most
20 current information on the responses or
21 anything with that document when they are on

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1 the review. Because as soon as you print
2 something out, it becomes outdated. There
3 could be a new response added by somebody.

4 MR. MARSCHKE: Well, again, we
5 have a lot of people who are not computer
6 really savvy. It's like I guess we could do
7 it; we could try it, but --

8 MR. KATZ: There needs to be some
9 capacity, I think, in any event because I mean
10 not only they may have some people that are
11 not computer savvy, they also may have some
12 people that they may not be able to put
13 through the whole clearance process, if
14 they're not cleared. There are a lot of
15 people that are not through the whole -- and
16 that clearance process is enormous, as you
17 know, to get individuals through to have IT
18 rights.

19 So if this can be done, it would
20 be much easier than clearing people --

21 MR. MARSCHKE: There's also other

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1 purposes why we probably need, from time to
2 time we will need to get hard copies off of
3 this thing.

4 DR. MAURO: Well, do both. I
5 mean, can we do both?

6 MR. MARSCHKE: Well, yes, if we
7 can get hard copies, then we can do both.

8 DR. MAURO: And electronic.

9 MR. MARSCHKE: If they want it,
10 right.

11 DR. MAURO: Yes, it would make
12 life easier for you if you could
13 electronically say --

14 MR. KATZ: Oh, it's better, yes.

15 MR. MARSCHKE: Electronic PDF is
16 the way --

17 MR. KATZ: Yes, I mean that would
18 be perfect, right?

19 MR. MARSCHKE: That's what we used
20 to do with the other database. I would send
21 it off to them, and they would make a

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1 response. Then, basically, I could just
2 block/copy/paste their response right into the
3 database.

4 CHAIR MUNN: Yes, that served us
5 very well for a number of months.

6 MR. MARSCHKE: Yes, it served us
7 very well. So if we could just get back to
8 that?

9 Because right now what we had to
10 do was I had to go in here and I had to pull
11 up each one of these issues, for example, and
12 block/copy/paste each one of these issues into
13 a Word file, and then send the Word file off
14 to Joyce. So it was just really cumbersome.

15 So we need to have some way to
16 take all the information which is on this
17 screen, but not only for Issue 1, but also
18 for --

19 CHAIR MUNN: Each of the other
20 issues.

21 MR. MARSCHKE: -- each of the

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1 other issues, all the issues associated with
2 this particular document.

3 One of the complaints was we
4 didn't have finding numbers before, but now I
5 see we do have finding numbers associated with
6 each one.

7 CHAIR MUNN: That's good.

8 MR. MARSCHKE: So that's good.
9 We've got the finding numbers over here on the
10 lefthand side. So that's good.

11 CHAIR MUNN: Okay. You think
12 we're pretty firm on what needs to be done
13 that hasn't been done yet, right? So with any
14 luck at all, Steve, you can get with these
15 folks, and can you stick around tomorrow and
16 do that with them tomorrow?

17 MR. MARSCHKE: I have a commitment
18 tomorrow right now. I don't know if we want
19 to --

20 CHAIR MUNN: Well, a lot of other
21 folks are busy tomorrow, too. But if you can

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1 work out an early date with Brant or others --

2 MR. MARSCHKE: It does seem like
3 they have been making some -- I mean, to be
4 honest with you, perhaps the reason why I
5 wasn't able to update responses last week was
6 because they were in the midst of revising the
7 database.

8 CHAIR MUNN: Yes.

9 MR. MARSCHKE: When I look at it
10 right now, I can't see. The last time I
11 looked at it, there were no finding numbers,
12 and now there are finding numbers, and so on
13 and so forth. So I would like to really go
14 back and play with the version that is up here
15 now to see exactly the enhancements that have
16 been made to it since the last meeting.

17 CHAIR MUNN: Well, we can give it
18 another shot today to find out whether it's
19 going to be entirely impossible to deal with
20 or if we're going to get most of the detail
21 that we need worked out today. We will try

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1 it.

2 MR. MARSCHKE: The biggest thing
3 was if we can know how to add documents -- and
4 we have just been following the instructions
5 that were just given -- we can add documents.

6 And then the other thing would be to be able
7 to make some kind of a hard copy or a PDF copy
8 of the information that is contained within
9 the database.

10 CHAIR MUNN: Right.

11 MR. MARSCHKE: Those are really
12 the two major things that are hanging up at
13 this point.

14 DR. MAURO: How about live-time
15 editing, like the way we used to do where we
16 would go into, okay, we're up to Issue No. 1
17 on OTIB-14 --

18 MR. MARSCHKE: Yes, I don't know
19 if they have changed that. Basically, one of
20 the questions that John is asking is maybe
21 some of these, like maybe, okay, we find that

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1 we have some typos or something in here
2 someplace, and we don't want to add a new
3 response. We just want to go in and edit this
4 response and say, okay, instead of the
5 reference -- we've got the wrong document
6 number in here. We just want to go back here
7 and, instead of 5, it should be a 4, or
8 something like that. So we don't really want
9 to add a new response, but we just want to
10 edit an existing response. That was one of
11 the things that was also brought up.

12 CHAIR MUNN: Yes. We couldn't do
13 that last time.

14 MR. MARSCHKE: Yes, every time you
15 clicked on it, basically, you got a new --

16 CHAIR MUNN: A new entry.

17 MR. MARSCHKE: -- new entry.

18 CHAIR MUNN: So we have several
19 double entries which are essentially the same
20 thing.

21 MR. MARSCHKE: Right.

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1 MR. TOMES: That is on our list of
2 stuff to do from last time. It's assigned to
3 be more intensive, more commitment.

4 MR. MARSCHKE: And I guess maybe
5 the thing is that if we know that the list
6 exists --

7 MR. TOMES: Right.

8 MR. MARSCHKE: -- and it's being
9 worked off, then that would go a long way
10 towards resolving our concerns.

11 MR. TOMES: Right.

12 MR. KATZ: So Tom said that there
13 were 18 enhancements that came out last
14 meeting, and all but five are done. So maybe,
15 Tom, after this meeting, if you could just
16 send Steve the list of the five that are
17 remaining, then he'll know that those are
18 already sort of on the docket waiting to get
19 done. And then if he has other issues as he
20 goes when he's home and he's working through
21 them, he will identify those, and then he will

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1 know whether he needs to come and what there
2 will be to get --

3 DR. MAURO: Yes, let's hold off on
4 the face-to-face until you regroup.

5 MR. MARSCHKE: For the record, Tom
6 has provided me with a list of the short-term
7 changes that have already been done and the
8 longer-term changes which are still in the
9 works.

10 MR. KATZ: Okay. Okay. And if
11 there's very little, of course, he could deal
12 with it on the phone.

13 MR. MARSCHKE: Right.

14 DR. MAURO: I've got a question.
15 Now in addition to the functionality to
16 support this meeting and, of course, the
17 follow-up activities that are necessary to
18 keep things current, we will be talking about
19 it this afternoon, about these two-pagers.

20 CHAIR MUNN: Yes.

21 DR. MAURO: The two-pagers require

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1 us to download the entire file for a given
2 PROC review. Let's say there's an OTIB or a
3 PROC or a PER that has a history where the
4 various issues that are associated with it
5 were discussed over four or five Work Group
6 meetings or Subcommittee meetings. All of
7 that has to be captured and handed over to the
8 person who is going to have responsibility to
9 write a two-pager so the person could
10 understand the entire history of it and how it
11 matured over perhaps a year.

12 CHAIR MUNN: Or more.

13 DR. MAURO: Or more. And then
14 capture it in two pages. So right now, how
15 were you able to do the first five we did? I
16 mean, what was the mechanics? I know you
17 ended up getting it done, but was it a big --

18 MR. MARSCHKE: We went back to the
19 old database.

20 DR. MAURO: Oh, okay.

21 MR. MARSCHKE: We did a dump of

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1 the old database.

2 DR. MAURO: Yes, we were lucky
3 enough that we had that.

4 MR. MARSCHKE: Well, it was,
5 basically, so what we're working from on the
6 two-pagers is not necessarily a complete list
7 of all the procedures that have been -- have
8 all their statuses --

9 DR. MAURO: So we got lucky. It
10 just so happens the five we picked --

11 MR. MARSCHKE: We have enough that
12 we can --

13 DR. MAURO: Yes.

14 MR. MARSCHKE: Well, we picked the
15 five that were already on that list.

16 DR. MAURO: I got it. Okay. It
17 made --

18 MR. MARSCHKE: So we made our own
19 luck.

20 DR. MAURO: Okay.

21 MR. MARSCHKE: But what we want to

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1 do is when we get to this screen here, we want
2 to be able to dump not only this screen, but
3 what is behind this screen to a PDF file.

4 MR. TOMES: Right. That's what
5 you were asking for.

6 MR. MARSCHKE: That's the same as
7 what we were asking before.

8 MR. TOMES: All right.

9 MR. MARSCHKE: But we just want to
10 be able to -- when I say what's behind this
11 screen, John, it's when you click on this OTIB
12 finding No. 1, basically the whole history is
13 behind this page.

14 DR. MAURO: Oh, that's beautiful.

15 MR. MARSCHKE: So when he prints
16 out that previous screen and everything that
17 is behind it, you will print out all this as
18 well. And this has all the history from when
19 it was first entered back in 2007 up until
20 July 26th of 2010. So the whole history is
21 here.

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1 DR. MAURO: We're in the red zone.

2 You know, we're getting there.

3 CHAIR MUNN: Yes, we're close.

4 That's good. All right.

5 MR. HINNEFELD: With respect to
6 the design meeting, my schedule until the
7 Board meeting gives me the following two
8 Mondays, and the 25th is better than the 18th,
9 but I can do the 18th, and Election Day.
10 Those are the days I have available for design
11 meetings. They're not Friday between now and
12 the Board.

13 MR. KATZ: Which ones?

14 MR. HINNEFELD: The following two
15 Mondays, next week, Monday, it would be that
16 and the next Monday, and Election Day.

17 MR. KATZ: And Election Day is one
18 of the days that Dr. Melius is looking at for
19 one of his two Work Groups for the
20 teleconferences.

21 CHAIR MUNN: Good.

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1 MR. KATZ: And for the record,
2 Mike Gibson has joined us.

3 CHAIR MUNN: Welcome, Mike.

4 MEMBER GIBSON: Thanks.

5 CHAIR MUNN: So we're not going to
6 have any problem adding responses today and
7 changing status today? Those are the two
8 things --

9 MR. MARSCHKE: It doesn't look
10 like we're going to have any problem doing
11 that.

12 CHAIR MUNN: All right.

13 MR. MARSCHKE: I guess the only
14 other thing, this is a real simple thing. The
15 defaults for showing the statuses is all
16 except closed. I think we would like -- I
17 personally would like to have it all messages,
18 so we show the complete list.

19 CHAIR MUNN: Yes.

20 MR. MARSCHKE: I know that's a
21 very simple fix to do. Because sometimes if

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1 we close, if we have 10 issues and we close
2 number 10, when we're looking at the screen,
3 we don't know that there were 10 issues and
4 that one of them has been closed.

5 It's a little easier now that we
6 do have the finding numbers to identify which
7 ones. If we have skips in the finding
8 numbers, then we can assume that the skips are
9 due to the fact that something closed. But I
10 think it is just better if we just print out
11 all the messages and not try to edit them, not
12 try to anticipate any edits for the user.

13 CHAIR MUNN: Yes, I agree. We can
14 always filter it.

15 MR. TOMES: Are you talking the
16 interface --

17 MR. MARSCHKE: Both, both.

18 MR. TOMES: Okay.

19 MR. MARSCHKE: Definitely the
20 printout, definitely.

21 MR. TOMES: Right, the printout we

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1 would want to filter it.

2 MR. MARSCHKE: Definitely we're
3 talking both.

4 CHAIR MUNN: All right. I think
5 those are the biggies. Anybody else have any
6 major griefs that we need to talk to before we
7 move into our real agenda?

8 (No response.)

9 If not, then with great thanks, we
10 appreciate your coming. Thanks.

11 MR. KATZ: Thank you, Tom.

12 MR. TOMES: You're welcome.
13 Anytime.

14 CHAIR MUNN: And we'll just move
15 on from there. Since we're already on
16 OTIB-14, we can stay on OTIB-14. As my list
17 has it, it's SC&A's ball game, right?

18 Where are we with OTIB-14?

19 MR. MARSCHKE: Basically, there
20 are three issues that still need to be
21 addressed, is that correct?

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1 CHAIR MUNN: That's what the list
2 says.

3 MR. MARSCHKE: And we sent it to
4 Joyce. I sent it to Joyce very recently. So
5 I was a little late in getting it to Joyce.
6 She did take a look at it, but we still don't
7 have a formal response to NIOSH's latest
8 response.

9 Basically, she said that some of
10 the information requested was included -- the
11 intake rates from 1988 to 2005 were included
12 in TKBS 11-5. NIOSH is using the 95th
13 percentile for all periods, including 1988 to
14 2005, and NIOSH is using the americium lung
15 data to calculate lung doses.

16 So it looks like NIOSH is doing
17 some good things, in her opinion. Now she
18 hasn't made any recommendations as to whether
19 or not she feels that these good things are
20 enough to close the issues or she still has
21 additional problems with the issues. So right

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1 now, SC&A needs to provide the Subcommittee
2 with our recommendation as to what the status
3 changes, if any, should be to these three
4 TIB-14 issues.

5 CHAIR MUNN: So, essentially, it
6 remains SC&A's action, right?

7 MR. MARSCHKE: Right.

8 MS. THOMAS: Yes, and this is
9 Elyse.

10 I just wanted to mention, while
11 we're on this particular document, that from
12 the last meeting I was supposed to add a
13 statement as to why the document was
14 cancelled. As soon as I get edit capability,
15 I'll be able to do that. So that's still on
16 the list of things that need to be done for
17 this document.

18 CHAIR MUNN: Thank you, Elyse.

19 MS. THOMAS: Okay.

20 CHAIR MUNN: Anyone else have
21 anything to say about TIB-14?

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1 (No response.)

2 All right, then RPRT-0044, issues
3 and adding it to the database, SC&A.

4 MR. MARSCHKE: Well, we have not
5 added it to the database because, as we spoke
6 earlier, we didn't know how to add documents.

7 CHAIR MUNN: Right.

8 MR. MARSCHKE: And report
9 documents were one of the documents we did not
10 know how to add. When I get home, tomorrow I
11 will try to add Report 44 and let you know my
12 success or not.

13 Then if we are able to add it,
14 then we -- well, the flip side of this is we
15 have not officially sent out our review of
16 Report 44. We have a version of it here which
17 is still basically not quite in the final SC&A
18 format form. So it's not Subcommittee-ready
19 at this point.

20 We kind of, I guess, it slipped
21 through the cracks sometime in August. We

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1 were working on it up through August, and then
2 the last version we have of it was an internal
3 working version that came out in August, and
4 it has not been formally issued.

5 We have to go through. Again, if
6 you scroll through here, you will see that
7 there are still some editorial comments in
8 here that have to be resolved internally
9 within SC&A before it can go out.

10 So the status of Report 44 is it's
11 still in internal SC&A review. We do have, if
12 you go up to the beginning, about four issues,
13 four findings that will eventually make its
14 way to the Subcommittee associated with it.

15 Now this is -- Report 44 is kind
16 of being reviewed, a dual review, if you will.

17 It's being reviewed not only for the
18 Procedures Subcommittee, but also for the SRS
19 Work Group.

20 And I'm not sure -- we would have
21 to go through and look at these findings and

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1 see. Some of them may be appropriate for this
2 Subcommittee, may be more geared towards this
3 Subcommittee, which would be more generic-type
4 findings. Others of the findings may be more
5 specific for the Savannah River Work Group.

6 So I'm not sure how the
7 Subcommittee and the Work Group want to handle
8 that.

9 CHAIR MUNN: Well, in the past,
10 lacking any clear definition, and before we
11 sort of have gotten ourselves to the position
12 where we felt we knew how we were going to
13 handle these things, what we have done is had
14 the document come here, and then the decision
15 is made here to transfer specific findings
16 that are applicable to the Work Group to the
17 Work Group. That would seem to be the logical
18 process to me because that immediately puts
19 the entire report on the database and gives us
20 the tracking capability that we need.

21 Does anyone see it differently

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1 than that? That seems the logical process to
2 me.

3 MR. MARSCHKE: I agree with that,
4 Wanda. The only thing was, the review of 44
5 was assigned twice, to SC&A twice. Let's put
6 it that way. But I think that what you
7 propose is a good way to resolve it.

8 CHAIR MUNN: We can make sure we
9 have everything that we need in the tracking
10 system, if we do it that way.

11 MR. MARSCHKE: Right.

12 CHAIR MUNN: Okay, we'll just
13 carry that over. So I'm assuming that by the
14 time we have our next meeting, probably what
15 -- October. We're not going to do anything in
16 November for sure, or we certainly won't meet
17 again before possible early December, but,
18 more likely, early January.

19 Can we make the assumption we will
20 probably have an addition to the database by
21 then with this?

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1 MR. MARSCHKE: We will -- yes.

2 CHAIR MUNN: Reasonable
3 commitment?

4 MR. MARSCHKE: A reasonable
5 commitment. I am appalled that we haven't
6 gotten it out already. Let's put it that way.

7 I would have thought we could have gotten
8 this out by this time.

9 DR. MAURO: There's a two-step
10 process, Joyce and then Harry.

11 MR. MARSCHKE: Joyce and then
12 Harry have been working on this. And again,
13 Arjun has been kind of also involved because
14 of the involvement with the Savannah River
15 Site.

16 DR. MAURO: Yes, it's unfortunate
17 they got confounded. The reality is I see
18 certainly a standalone document has universal
19 applicability and it should come here, of
20 course, then to be dealt with on a case-by-
21 case basis separately, like Savannah River.

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1 So I could see the break being clean, even
2 though the same people will be involved. So,
3 I mean, I don't see solving both problems
4 before we come here is necessary.

5 CHAIR MUNN: Anything else on 44?

6 If not, let's move on to the
7 status and action plan for open items report,
8 NIOSH.

9 MR. HINNEFELD: Well, of course,
10 we saw this agenda for the first time a couple
11 of days ago. Were we planning to do this?
12 Did we know we were going to do it? Because I
13 didn't know I was going to do it.

14 CHAIR MUNN: It wasn't on your
15 action list? It was a carryover from last
16 time.

17 MR. HINNEFELD: Well, I'm looking
18 at my scribe over there.

19 Now you're looking for here -- are
20 you talking about open items -- do you mean
21 items we have not yet provided any response

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1 to?

2 CHAIR MUNN: We had quite a
3 discussion at our last meeting about the fact
4 that we have a long list of items on our
5 database which are open, meaning we have never
6 touched them. We have never even brought them
7 up for conversation.

8 And at that time, what we were
9 hearing from NIOSH, if my memory serves me
10 correctly, is that one of the reasons there
11 are so many of these open items is that a
12 significant number of the documents that are
13 involved were early documents that are no
14 longer in use, and you felt the time had been
15 better served by addressing the current
16 documents and current issues, rather than
17 documents which have been closed or something
18 of that sort.

19 But what we're looking for is a
20 way to get those items that are shown as open,
21 which they are, into a closed position, so

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1 that we can essentially get them off of our --
2 list of what's open.

3 The fact that they are all out
4 there is misleading to the casual observer.
5 Someone who hasn't followed the workings of
6 the Subcommittee would have the mistaken
7 notion that we're not working on things we
8 need to work on. That's really what it boils
9 down to.

10 So we had, I thought, received a
11 tentative verbal commitment from NIOSH to take
12 a look at those, see if many of them could
13 just simply be closed by a straightforward
14 statement and dispose of them.

15 If reference needs to be made to
16 other later documents which cover this and,
17 therefore, the finding is no longer pertinent,
18 then that needs to be included in the
19 database, so that we can shift the status of
20 those items.

21 DR. ULSH: It seems to me that

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1 what you're asking for is a two-step process,
2 where we go through and look at the open items
3 and identify those that pertain to outdated
4 documents. That's step one.

5 And then to look at those ones
6 that have been identified and say either this
7 is no longer a relevant finding or this
8 finding now applies to a new document, and
9 here's our response to it.

10 CHAIR MUNN: That's correct. And
11 of course, not all of the open items to which
12 we refer are open items because they have been
13 superseded. There are viable issues still on
14 the table, some of which are listed as open
15 items, and we have not addressed them at all.

16 So perhaps it is a three-step process.

17 MR. HINNEFELD: Yes, the other
18 category of open items can be items where an
19 initial response has been provided in the
20 database, but the Subcommittee hasn't talked
21 about it yet.

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1 MR. MARSCHKE: Definitely. I
2 think that was one of the things that was
3 brought up at the last meeting.

4 MR. HINNEFELD: That could be a
5 category. Well, I don't know how many, if
6 there are any of those or not, but that could
7 happen because the status doesn't change when
8 we enter the initial response. The status
9 changes when the Subcommittee talks about it.

10 So that is our third thing, is to
11 come up with that universe of things, because,
12 then, those are things that can be talked
13 about, essentially, right away. We would have
14 to identify what they are. SC&A could look at
15 the initial responses and have some thought
16 about them for the Board or for that
17 Subcommittee.

18 MR. MARSCHKE: Now the database
19 may be helpful in you trying to go through, at
20 least the first step of this response because
21 you can look. If you go to this SC&A Findings

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1 Status Report, you can see, basically, this
2 column here is the open column. And you can
3 see we have 62 open issues. And if you just
4 kind of scroll up, you can see OTIB-54 has --
5 almost half of the open issues are associated
6 with OTIB-54. Twenty-six of the 62 open
7 issues are associated with that OTIB.

8 So I don't know; I have no idea
9 what OTIB-54 is, but if we were to attack that
10 OTIB, we would go a long ways towards moving
11 or reducing the number of open issues.

12 MR. KATZ: I thought we had this
13 discussion -- I'm sorry, Brant. Go ahead.

14 DR. ULSH: OTIB-54 is on the
15 agenda.

16 MR. KATZ: Right. I thought that
17 was the path forward, actually. I thought we
18 had this discussion, and the real action here,
19 I mean this is new, this discussion we just
20 had about this other strategy, but the real
21 action was let's bite off 54 as our next major

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1 procedure for which NIOSH would produce
2 responses, right?

3 MR. HINNEFELD: That sounds
4 familiar. That's what we have done.

5 CHAIR MUNN: We had both those
6 discussions.

7 MR. HINNEFELD: Don't we have the
8 54 responses now?

9 MR. MARSCHKE: And they have done
10 that. They have done that.

11 MR. KATZ: Yes. Yes.

12 DR. MAURO: Now, mechanistically,
13 in theory, then, in writing for each issue on
14 54 you may have some text right now.

15 MR. MARSCHKE: They have that.

16 DR. MAURO: Yes, but it's not in
17 the --

18 MR. MARSCHKE: It's in the
19 database. It's in the database.

20 DR. MAURO: So are we in a
21 position where we could act on that?

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1 MR. MARSCHKE: Steve Ostrow, it's
2 been given to Steve Ostrow, and he's been
3 looking at it.

4 DR. MAURO: Okay. So let's talk
5 about the mechanics of it. In principal,
6 could we do it right now? Let's see your
7 answer to Issue No. 1, Issue No. 2. If we
8 have the right people on the line or here from
9 SC&A, couldn't we put that one to bed? Or do
10 we want to wait until we give our people some
11 opportunity to read it --

12 MR. MARSCHKE: There are some of
13 them that you can basically do that on because
14 there are a number of these issues which are
15 no response required. And there's another
16 group of issues where NIOSH agrees with the
17 issue.

18 So those two categories are no-
19 brainers. We can go through and we can move
20 those from the open to the closed column
21 almost immediately. Some of the other ones,

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1 for example, as I speak, OTIB-54, Issue No. 2,
2 no response needed.

3 DR. ULSH: Well, before we get too
4 deep into OTIB-54, since that is on the agenda
5 as one of the next items, part of the review
6 of carryover items, I would just like to be
7 clear on what we're committing to provide
8 under the Report on Status and Action Plan for
9 Open Items.

10 We're still on the fly here. I
11 think perhaps by our next meeting in December
12 and January we could at least have a
13 categorization of --

14 (Phone noise.)

15 -- that's Elyse trying to
16 frantically tell me to be quiet.

17 (Laughter.)

18 I think we could at least commit
19 to providing that list of findings which
20 pertain to what are now outdated documents,
21 and maybe we could even identify those ones

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1 that we would -- I'd say are candidates for
2 closure because they have gone away. I don't
3 know that we could commit to providing a
4 technical response on each of the remaining
5 ones.

6 CHAIR MUNN: No, I don't believe
7 we ever had that discussion. The discussion
8 that we had bears more directly on your
9 earlier comment.

10 DR. ULSH: Okay.

11 CHAIR MUNN: We wanted to get a
12 handle on how many we're carrying that really
13 are not applicable to anything anymore and to,
14 therefore, have a better handle on how much
15 needs to be done. We don't know how much work
16 needs to be done on the open items because
17 we're not clear on precisely what the status
18 of each of those is.

19 DR. ULSH: So would that be
20 acceptable, then, if we commit to provide that
21 for the next meeting?

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1 CHAIR MUNN: It certainly will be,
2 especially in the light of the fact that we're
3 going to be talking about half of them,
4 assumedly, when we talk about OTIB-54.

5 Is Steve Ostrow going to be the
6 guy on that? Because Steve told me he would
7 not be here this morning; he will be here this
8 afternoon.

9 DR. MAURO: He will be here this
10 afternoon for the two-pagers. Now you
11 referred to OTIB-54. I'm not sure what that's
12 about.

13 MR. MARSCHKE: OTIB-54 is Steve
14 actually did the -- it's fission and
15 activation product assignment for internal
16 dose.

17 DR. MAURO: Oh, this is where you
18 had the gross beta-gamma in the urine and you
19 have all those different categories of
20 reactors. We had some comments, but I didn't
21 think -- well, let's take a look, but I

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1 remember that going to --

2 MR. MARSCHKE: Well, we have a
3 couple more -- on the agenda we have a couple
4 more items before we get to OTIB-54.

5 DR. MAURO: Oh, okay. Sorry. I
6 don't want to shortcircuit it.

7 CHAIR MUNN: No, no.

8 DR. MAURO: But I think we're
9 poised to go after that one.

10 CHAIR MUNN: Oh, fine. You don't
11 have to wait for Steve?

12 DR. MAURO: I'm pretty familiar.
13 Now Steve I guess led, he led the --

14 MR. MARSCHKE: Steve was basically
15 the author of the OTIB-54 report.

16 DR. MAURO: Right, right.

17 MR. MARSCHKE: Now if you want
18 to --

19 DR. MAURO: Let's wait until he
20 gets here. I don't want to jump the gun.

21 MR. MARSCHKE: And I forwarded the

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1 comments. NIOSH gave me a hard copy of the
2 comments, and I forwarded them to Steve, and
3 he looked at them, and he has not gotten back
4 formally.

5 DR. MAURO: If it's what I believe
6 it is, the issue has to do with it's a generic
7 approach saying, listen, we have a lot of
8 workers out here where we have gross beta-
9 gamma activity because they were working at
10 some reactors, okay, and they're different
11 kinds of reactors. How do you go from gross
12 beta-gamma in urine and reconstruct a person's
13 dose? What assumptions do you make regarding
14 the mix of isotopes that he might have inhaled
15 to give you that gross beta-gamma?

16 So it is an internal dosimetry
17 question. When you really lack specific data
18 for a given facility, all you have is gross
19 beta-gamma, not isotopic mix.

20 So we went to Joyce and said,
21 "Joyce, listen, this is the approach they plan

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1 to use." And as we used it, in other words,
2 if you're working with this class of reactor,
3 this is the mix you assume it is, if you have
4 this gross beta-gamma. Oh, but if it's this
5 class of reactor, you use this mix. So the
6 mix is really selected based on, I think, four
7 or five different categories of reactors.

8 And my recollection is that we had
9 a pretty favorable response. But I don't want
10 to take the wind out of the sails of the folks
11 who did the work because there might have been
12 some, if this is the one --

13 MR. MARSCHKE: There were 26
14 comments.

15 DR. MAURO: We had 26? Okay.

16 MR. MARSCHKE: Twenty-six
17 comments. Not all of them were -- some of
18 them were positive comments, I believe, and
19 they had no response required.

20 DR. MAURO: Yes, okay, and Steve
21 was -- I mean I worked with Steve when we

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1 first sort of set it up to get this thing
2 launched. But when Steve gets back, he will
3 be in a position to do a much better job than
4 I can.

5 CHAIR MUNN: Are you recommending
6 that we wait until this afternoon when Steve
7 is here?

8 DR. MAURO: Why don't we wait for
9 Steve to get here?

10 MR. MARSCHKE: Well, why don't we
11 work down the list, and when we can pull up
12 OTIB-54 on the screen here, we can look and
13 see what the issues are, and whether or not we
14 want to wait for Steve.

15 MR. HINNEFELD: I mean if there
16 are some things that can be closed and if it's
17 a no response needed, we can close those.

18 DR. MAURO: Let's move on those.
19 Let's move. Let's make some progress.

20 CHAIR MUNN: Let's do it now.
21 Let's do it now because I had set aside a

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1 significant amount of time. I thought NIOSH
2 would have a report on their action plan, the
3 open items. Since that has not occurred, and
4 since, obviously, this OTIB is a major part of
5 that issue anyway, let's just move it up a
6 little bit and go ahead and look at it right
7 now.

8 DR. ULSH: Now do you also want to
9 reserve some time this afternoon to have Steve
10 involved for those issues that we can't close
11 immediately or are we just --

12 CHAIR MUNN: Sure. There's no
13 reason why we can't go back to that.

14 MEMBER ZIEMER: You're just going
15 to focus on the easy ones here, is that it?

16 DR. MAURO: Yes, let's do what we
17 can.

18 CHAIR MUNN: Let's do it.

19 MR. MARSCHKE: Okay. Again,
20 looking at the way the issues have been
21 structured here, we have kind of like two

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1 levels of issues. We have observations, which
2 the first six issues are observations, and
3 then we have some findings. Issue 7 is a
4 finding. Issue 8, again, is an observation.
5 So I'm not sure whether or not there's a
6 difference between observation and a finding
7 in the severity. Some of the observations I
8 think are positive findings.

9 CHAIR MUNN: Require no action?

10 MR. MARSCHKE: Require no action.

11 DR. MAURO: If that's the case,
12 let's put it down, no action required.

13 MR. MARSCHKE: So that's what
14 basically -- that's what NIOSH has done for
15 issues. If you want to go through and do the
16 no action, no response needed first --

17 DR. MAURO: Let's just go top to
18 bottom. Let's just march through them and say
19 we can hit it now or we can't; it has to wait
20 for Steve. And if we can hit it now, let's
21 hit it now and start to knock things off. I'm

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1 big for let's move the chains.

2 CHAIR MUNN: Let's do.

3 Absolutely.

4 DR. MAURO: Let me get up closer
5 so I can read that with you.

6 CHAIR MUNN: So we can go for it.

7 MR. MARSCHKE: The first issue is
8 the TBD does not specify what version of
9 ORIGEN2 NIOSH used to inform the calculations
10 underlying the guidance given to dose
11 reconstructors, nor does the OTIB justify its
12 use.

13 And the NIOSH response was
14 "Information on the code version, V2.1, will
15 be added. ORIGEN2 is an industry standard
16 tool for predicting the content of irradiated
17 nuclear fuels. OTIB-54 includes some
18 description of ORIGEN2 in Section 5.1, page
19 11. Further elaboration can be added if
20 desired. Later versions, for example, ORIGEN-
21 ARP, do not have established data libraries

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1 for older reactor designs. ORIGEN-ARP has
2 pre-existing libraries developed specifically
3 for the ART and the fast flux test facility.

4 "It would take a significant
5 effort to develop data libraries, especially
6 for the reactors considered in OTIB-54, but
7 this can be done, if desired, using the TRITON
8 code that is part of Scale 6

9 CHAIR MUNN: Now let me read this -
10 - last two sentences. "ORIGEN2, pre-existing
11 librerie developed specifically for the ATR --
12 it would take significant effort to develop
13 data libraries specifically for the reactors
14 considered in OTIB-54, but it can be done, if
15 desired, using the TRITON code that is part of
16 Scale 6."

17 So what this is telling me is two
18 things. One, we have a portion of this that
19 should be in abeyance. It's in progress,
20 right?

21 DR. MAURO: They answered the

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1 question. In other words, the question we
2 posed, we need to know a little bit more about
3 ORIGEN and what you did. And they gave us
4 what we needed.

5 Now the question is, obviously,
6 ORIGEN and its pedigree and its history is
7 dynamic. It's changing. There's always
8 improvements. But does that really mean that
9 it's -- to me, taking it any further is
10 gilding the lily.

11 There's no doubt that the folks in
12 charge are very aware of ORIGEN and its
13 pedigree and its changes. I am perfectly
14 satisfied with this answer. They have
15 answered the question.

16 Now justification, my guess is
17 justification is asking for a Ph.D. thesis.

18 MR. MARSCHKE: They've answered
19 the question, but they have also asked a
20 couple of questions. Basically, they have
21 said that they are going to add information on

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1 the code version in the first sentence.

2 CHAIR MUNN: It's in abeyance.

3 DR. MAURO: That's why it's in
4 abeyance. Yes.

5 MR. MARSCHKE: But then in this
6 sentence here they have said, "Further
7 elaboration can be added, if desired." Do we
8 want further elaboration or is just the code
9 version enough?

10 And then they also want to know
11 whether or not they need to develop specific
12 libraries. I think your answer to that, John,
13 was, no, they don't.

14 MR. HINNEFELD: The question is is
15 the additional value of a later version of
16 ORIGEN worth the effort it would take to
17 regenerate the libraries, nuclide libraries
18 for those reactors, when those libraries
19 already exist in Version 2.1?

20 To my mind, you know, the
21 incremental value you get from these versions

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1 of software isn't that much of an incremental
2 value that you would want to take on that
3 other task

4 DR. MAURO: And I would leave it
5 to the wisdom of NIOSH and your contractors
6 when such changes occur, say something of
7 substance happens, and the way in which ORIGEN
8 derives the fission products, which is, you
9 know, we're actually at the edge. No, there's
10 no need to carry this further. Otherwise, we
11 would be agonizing over supplying structure.

12 You could imagine people are
13 always looking at the physics of --
14 interactions in ORIGEN. You don't want to
15 operate at that level. You don't need that.

16 CHAIR MUNN: No, no. No, I don't
17 think we do.

18 Mark and Dick, I'm a little
19 concerned about whether you are able to follow
20 this discussion on the telephone. Have you
21 been able to pull this database up, so that

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1 you see where we are and what we're talking
2 about?

3 MR. HINNEFELD: Our responses are
4 also in a Word file.

5 MEMBER LEMEN: This is Dick. I am
6 following you as best I can. If I have
7 questions, I'll let you know.

8 CHAIR MUNN: Thank you.

9 Mark, how are you?

10 MEMBER GRIFFON: I'm following
11 along, Wanda. Thanks.

12 CHAIR MUNN: Okay. Fine. Do both
13 of you agree that we're in abeyance here, that
14 we really don't have any further action until
15 -- all NIOSH needs to do is just incorporate
16 ORIGEN?

17 MEMBER ZIEMER: Well, they've
18 already done that, haven't they?

19 MR. HINNEFELD: If you're talking
20 about some wording changes in the --

21 DR. MAURO: Committing to wording

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1 changes in the actual OTIB.

2 MR. HINNEFELD: To specify in --

3 MEMBER ZIEMER: Oh, in the OTIB,
4 yes.

5 MR. HINNEFELD: And we could even
6 add --

7 MEMBER ZIEMER: I mean, they have
8 agreed --

9 MR. HINNEFELD: That was already -
10 - those are pre-existing libraries --

11 DR. MAURO: Bear in mind when
12 Steve gets here, the marriage of a given mix
13 and that mix selected for a given class of
14 reactor, as laid out in the protocol, the
15 OTIB, that's a different question. In other
16 words, did you marry, for a given class of
17 reactor, we're going to use this mix, and they
18 give the rationale for it in the OTIB. I
19 remember it. That's certainly going to be a
20 subject of discussion.

21 But right now I do not think --

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1 the very fact that they have described that
2 they have used ORIGEN or a given version of it
3 to come up with the mix -- and that's what
4 ORIGEN does for you, it gives you the reactor
5 core inventory and mix -- you know, I think
6 that answers the question. That doesn't mean
7 we have no problems with the way they used
8 that information to say, well, we'll apply
9 that mix to this reactor and this mix to that
10 reactor. So, I mean, to me this issue has
11 been resolved.

12 CHAIR MUNN: So you're fine? From
13 your point of view, we could actually close
14 this?

15 DR. MAURO: Well, in abeyance, if
16 you want, because there are some wording
17 changes that are needed in the OTIB to commit
18 to that.

19 CHAIR MUNN: That was my
20 interpretation of what Elyse had to say.

21 DR. MAURO: Yes.

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1 CHAIR MUNN: Richard, are you all
2 right with an in abeyance status for this
3 item?

4 MEMBER LEMEN: Yes.

5 CHAIR MUNN: Mark?

6 MEMBER GRIFFON: Yes.

7 CHAIR MUNN: Any problem here?

8 MEMBER ZIEMER: No. No, we're
9 good.

10 CHAIR MUNN: All right. Let's
11 just wait just a moment and give Steve a
12 chance to see if our new magic is going to
13 work.

14 MR. MARSCHKE: Okay, the response
15 I propose to add is, "NIOSH should identify
16 that Version 2.1 should be added -- NIOSH
17 should identify --

18 DR. MAURO: Explain that that was
19 what was used.

20 MR. MARSCHKE: "Was used to
21 identify in the OTIB -- that Version 2.1 was

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1 used, but do not -- related -- of ORIGEN.
2 Change the status to in abeyance."

3 Now I'm going to press the magic
4 button here and see if it works. It worked,
5 and now we have to change the status to in
6 abeyance. Change status.

7 CHAIR MUNN: Marvelous. It did
8 work.

9 DR. MAURO: Break out the
10 champagne.

11 (Laughter.)

12 MR. MARSCHKE: Celebrate the small
13 victories.

14 CHAIR MUNN: Very good. Yes,
15 that's actually a large victory, considering
16 how long it took us to get here.

17 Item 2?

18 MR. MARSCHKE: Now it's in
19 abeyance.

20 Item 2 is basically OTIB's advice
21 to select decay times most appropriate to the

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1 claimants, and accompanying guidance are
2 helpful."

3 The NIOSH response is no response
4 needed.

5 DR. MAURO: We agree.

6 CHAIR MUNN: Change status to
7 closed.

8 DR. MAURO: Yes.

9 MR. MARSCHKE: Do we need to add a
10 response to why we're changing --

11 CHAIR MUNN: I don't believe so.
12 I think "no response is needed" is adequate.

13 I had hoped to see the status
14 change on my screen.

15 MR. MARSCHKE: It's still working.

16 It's still working, Wanda. We've got to
17 watch this little box that is down here.

18 CHAIR MUNN: Yes, we'll give it a
19 few minutes.

20 DR. ULSH: Once that is done, you
21 might have to hit refresh.

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1 CHAIR MUNN: Yes, yes.

2 MR. MARSCHKE: And it might
3 disappear because, basically, we have the
4 filter on "all but closed."

5 DR. MAURO: Oh, we closed one.
6 So, therefore, you are not going to see it?

7 MR. MARSCHKE: It may go away.

8 DR. MAURO: Oh, no.

9 MR. KATZ: Magic.

10 MR. MARSCHKE: So if we change the
11 filter to all messages, then it should come
12 back.

13 MEMBER ZIEMER: I want to ask a
14 question. Why was that a finding, that second
15 one?

16 MR. MARSCHKE: It was an
17 observation.

18 MEMBER ZIEMER: Well, but it's
19 listed as a finding.

20 CHAIR MUNN: Well it's -- an
21 observation.

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1 MR. MARSCHKE: I think at one
2 point we had a discussion whether or not
3 observation should be included in the database
4 or not, and the decision was include
5 observations and findings in the database.

6 CHAIR MUNN: Because it's an
7 archive. This is the history.

8 Some of the observations really
9 should have some action attached to them, not
10 always, but some really should have.

11 MR. MARSCHKE: You can see, well,
12 even the first one, the first one was an
13 observation, and NIOSH did feel a
14 responsibility to provide a response to the
15 first one.

16 DR. MAURO: The distinction we
17 originally made between observations and
18 findings, observation is that, listen, this is
19 an improvement that would help clarify. It
20 would just make for a better product.
21 However, it doesn't really have a fundamental

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1 -- on how you are going to do the dose
2 reconstruction, which would be a finding. So
3 we made that distinction to try to be helpful.

4 Of course, we have gone a step
5 further now, and the degree to which we have a
6 positive statement, it's always a nice thing
7 to say this looks really good. Obviously, we
8 don't always do that, but in this case we did.

9 CHAIR MUNN: No, but that is fine.
10 Yes, that is good. All right, we are closed.

11 We are on to Item 3.

12 MR. MARSCHKE: Item 3 is another
13 observation on reactor modeling. "The OTIB
14 currently notes that overestimation of
15 activity ratios for short-lived
16 radionuclides." Is that the end of it?

17 CHAIR MUNN: Yes.

18 MR. MARSCHKE: Observation, "The
19 OTIB correctly notes that overestimation of
20 activity ratios for short-lived
21 radionuclides."

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1 CHAIR MUNN: No response. Closed.

2 DR. MAURO: But it's good to know
3 that it does that, have that on the record.

4 CHAIR MUNN: Yes, it is.

5 MR. HINNEFELD: This works better
6 when you are actually on our computer system.

7 We are using wireless, going through Citrix
8 to Atlanta and then back.

9 MR. MARSCHKE: Well, this is the
10 way it works on my computer.

11 MR. HINNEFELD: Works for you all
12 the time this way because you're always going
13 through Citrix.

14 MR. MARSCHKE: Exactly.

15 Issue 4 is another observation.
16 "Methodologies, assumptions, and data sources
17 are reasonable." And obviously, there's no
18 response needed from NIOSH on that.

19 DR. MAURO: I knew I remembered we
20 had a positive reaction to this.

21 MR. MARSCHKE: Yes. Typically,

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1 Steve Ostrow is apt to give out --

2 DR. MAURO: He will.

3 MR. MARSCHKE: -- positive
4 feedback.

5 DR. MAURO: You want Steve to
6 review all the OTIBs.

7 (Laughter.)

8 MR. MARSCHKE: Again, I assume
9 that the Subcommittee wants to close this one.

10 CHAIR MUNN: Yes, please.

11 Richard, is closed okay?

12 MEMBER LEMEN: Yes. This is
13 Richard. I'm fine.

14 CHAIR MUNN: Thank you.

15 MEMBER LEMEN: I'm not asleep.
16 I'm listening.

17 (Laughter.)

18 CHAIR MUNN: Mark, closed?

19 MEMBER GRIFFON: Yes, that is
20 fine.

21 CHAIR MUNN: Thank you.

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1 MR. MARSCHKE: Finding 5, finding
2 -- Fast Flux Test Facility. "Methodologies
3 and data sources are reasonable. SC&A
4 questions the chosen burnup value."

5 And then the NIOSH response is,
6 "The 80,000-megawatt days per metric -- heavy
7 metal burnup was selected -- was from DOE
8 2003," which states, "Most of the standard
9 Fast Flux Test Facility driver assemblies were
10 irradiated from 70,000 to 90,000-megawatt days
11 per metric ton heavy metal."

12 From the same reference, it
13 appears the maximum burnup was 152,230-
14 megawatt days per metric ton of heavy metal.

15 As a check, the FFTF case was run
16 to a burnup of 152,230-megawatt days per
17 metric ton of heavy metal, which equates to
18 5,011.1-megawatt days per assembly or 928 days
19 at a specific power of 5.4 megawatts.

20 The strontium-90 to cesium-137
21 ratio at discharge for the maximum burnup case

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1 was identical to that for the nominal burnup,
2 80,000-megawatt days per metric ton heavy
3 metal case. Ratio equals 0.365 in both cases.

4 CHAIR MUNN: I need to call
5 attention to the fact that I am conflicted on
6 this particular point. If you want to hear
7 what I have to say, I can tell you the numbers
8 are right.

9 DR. MAURO: That is the only thing
10 I was going to say. That is, the answer says
11 that, even if you were to change the burnup
12 rate, it doesn't change the strontium/cesium
13 ratios, which is the important fission product
14 mix that you are concerned about. That being
15 the case, as far as I'm concerned, the
16 question is answered, but I don't want to --
17 we know Joyce looked at this, and our folks,
18 and Steve as a nuclear engineer. They may
19 say, yes, we agree.

20 So from SC&A's perspective, I
21 cannot speak to whether or not that is, in

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1 fact, true. But if that is, in fact, true, it
2 has answered the question in an affirmative
3 value -- manner.

4 MR. MARSCHKE: Well, again, this
5 is the first time I've read this, but it's not
6 surprising that the ratio hasn't changed
7 because both the strontium-90 and the cesium
8 probably have reached equilibrium in the core
9 at 80,000-megawatt days. So, going further,
10 having additional burnup is not going to
11 change the equilibrium activities.

12 MEMBER ZIEMER: So if you're at
13 equilibrium, you're at equilibrium.

14 DR. MAURO: At equilibrium. Thank
15 you.

16 MR. MARSCHKE: That would probably
17 be the reason why it doesn't change. Once you
18 reach a certain burnup, it stays at that rate.

19 CHAIR MUNN: I'll not say anything
20 else about --

21 DR. MAURO: If you folks are

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1 happy, I'm happy.

2 MEMBER ZIEMER: Well, I think the
3 physics of it are independent of where it was
4 done. But I'm assuming from what you said
5 this is based on some work done at that
6 facility, but the basic physics are what they
7 are.

8 DR. ULSH: In terms of a status,
9 do we want to wait for Steve to weigh in or do
10 you want to act on it now?

11 DR. MAURO: No, I think the fact
12 that Steve Marschke is our nuclear engineer
13 also. And certainly the feedback of Paul
14 confirming his perspective on it also. It's
15 good enough for me. From SC&A's perspective,
16 we would recommend that. I have no problem
17 with that.

18 CHAIR MUNN: And I won't speak to
19 that any further. But other Members of this
20 Subcommittee?

21 Richard, any heartburn with that,

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1 closing it?

2 MEMBER LEMEN: No, I don't.

3 CHAIR MUNN: Mark?

4 MEMBER GRIFFON: No, it's okay to
5 close.

6 CHAIR MUNN: All right.

7 MR. KATZ: Closed.

8 CHAIR MUNN: Closed.

9 MR. MARSCHKE: Do we need to add a
10 response? We have a response. This one's not
11 intuitively obvious.

12 CHAIR MUNN: No.

13 DR. MAURO: Only if you have a
14 Ph.D. in nuclear engineering.

15 MR. MARSCHKE: By the way, it's
16 doing something now. I have to wait before I
17 can ask it to do something else.

18 CHAIR MUNN: You can't say
19 anything about the ratios of anything else,
20 but I know that's not --

21 MR. MARSCHKE: Well, I can't do

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1 something else. When it's closed, you
2 can't --

3 MR. HINNEFELD: You can't add a
4 response when it's closed.

5 MR. MARSCHKE: You can't add a
6 response to it when it's closed.

7 MR. HINNEFELD: That's right. You
8 have to add the response first.

9 CHAIR MUNN: While Steve is typing
10 away, this seems like a good time for us to
11 take a short break in any case. Let's take 15
12 minutes. Be back at 20 until 11:00.

13 (Whereupon, the above-entitled
14 matter went off the record at 10:18 a.m. and
15 went back on the record at 10:35 a.m.)

16 MR. KATZ: Okay, this is the
17 Procedures Subcommittee. We're reconvening
18 after a short break.

19 Dick and Mark, are you back with
20 us?

21 MEMBER LEMEN: This is Dick. I'm

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1 back.

2 MR. KATZ: Hi, Dick.

3 MEMBER LEMEN: Hello.

4 MR. KATZ: Mark, are you back with
5 us, too?

6 Not yet.

7 CHAIR MUNN: Let's give him
8 another 30 seconds.

9 MR. KATZ: Okay.

10 CHAIR MUNN: And my screen has
11 updated. I hope everyone else's has. So that
12 Items 2, 3, 4, and 5 are now gone.

13 We're on Item 6, and I think it's
14 time for us, with or without Mark, to take
15 up --

16 MEMBER GRIFFON: I'm here, Wanda.

17 CHAIR MUNN: Oh, good. Great.

18 We're on ORAUT OTIB-54-6.

19 MR. MARSCHKE: This is an
20 observation. It's for the N Reactor. It
21 reads, "The OTIB appears to have taken all of

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1 its data for the N Reactor from authoritative
2 sources and reasonably simulated the actual
3 isotopic composition after irradiation by
4 considering two different data sets."

5 The NIOSH response was no response
6 needed.

7 CHAIR MUNN: Correct. Closed.

8 MEMBER ZIEMER: Closed.

9 CHAIR MUNN: Any objection?

10 MEMBER ZIEMER: Closed.

11 CHAIR MUNN: The next item, after
12 Steve has finished typing, will be Item No. 7,
13 finding on single pass reactors.

14 MR. MARSCHKE: This is a finding
15 for the single pass reactors. "The fuel
16 dimensions, compositions, and typical burnup
17 values apply to the Manhattan Project era.
18 Since the reactors continued to operate well
19 after that period, the OTIB should provide
20 some justification for the assumption that
21 these data did not change significantly."

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1 And the NIOSH response is, "The
2 single pass reactors were designed for natural
3 uranium fuel. Slightly enriched uranium slugs
4 were introduced in later years for use in the
5 outer core regions to flatten out the flux.
6 Hollow fuel slugs were also used at some point
7 to increase power by increasing the coolant
8 flow rate. These changes marked the evolution
9 of the Hanford fuel slugs from the Manhattan
10 era to those adopted for use in the N Reactor.

11 The intention was to capture the Manhattan
12 era fuel in the modeling for the single pass
13 reactors and the later fuel would be N
14 Reactor model.

15 "The evolution of the solid core
16 fuel slugs, which were used until the mid-
17 1950s, will not affect the fissions/activation
18 product results vis-a-vis the purpose/scope of
19 OTIB-54. The fuel was still natural uranium
20 canned in aluminum and bonded with aluminum
21 silicone irradiated to low burnup."

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1 DR. MAURO: Well, I'll let the
2 nuclear engineers in the room speak.
3 Certainly they answered the question. In
4 other words, there's an answer there. Is that
5 answer satisfactory from a purely technical
6 perspective? I'll leave it to the --

7 MR. HINNEFELD: Yes, you might
8 want to go back and comment.

9 DR. MAURO: Yes, but if Steve and
10 Paul feel that that answer is satisfactory --

11 MEMBER ZIEMER: I can't answer
12 that.

13 DR. MAURO: Okay. So we're going
14 to wait for the --

15 MR. MARSCHKE: I think this one we
16 have to wait for Steve Ostrow.

17 MR. HINNEFELD: So this one goes
18 in abeyance, or not in abeyance, in progress.

19 DR. MAURO: It's in progress.

20 MR. HINNEFELD: In progress.

21 DR. MAURO: We have got an answer,

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1 and we have to -- so the ball is in our court.

2 MR. KATZ: You probably don't have
3 to change it to in progress right now, if we
4 just mark that, because Steve will be here
5 this afternoon.

6 MEMBER ZIEMER: Leave it open.

7 MR. MARSCHKE: Leave it open until
8 Steve gets here.

9 MR. HINNEFELD: Oh, okay.

10 DR. MAURO: Yes.

11 MR. MARSCHKE: And maybe we can
12 come back to it this afternoon.

13 That brings us to 8.

14 CHAIR MUNN: Correct.

15 MR. MARSCHKE: Eight is an
16 observation for the single pass reactors.

17 "SC&A questions the OTIB
18 referencing Robert Burns, Jr., CHP, Senior
19 Health Physicist, Soka Research Associates" --

20 MEMBER ZIEMER: No, Shonka.

21 MR. MARSCHKE: Shonka?

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1 DR. MAURO: Yes, Joe Shonka.

2 MR. MARSCHKE: Research
3 Associates.

4 "Rather than citing the original
5 source material directly and including a
6 discussion of assumptions and effects."

7 The NIOSH response was, "The
8 discussion of the basis for the data used in
9 the W slugs will be expanded to include
10 appropriate reference citations. Initially,
11 the W slug data were taken from calculations
12 the author had performed years prior for the
13 Oak Ridge dose reconstruction project. (Fuel
14 slugs from Hanford were used in radium
15 production at X10.)

16 "Since then historical Manhattan-
17 era documents from Hanford have been reviewed
18 in more detail and better information has been
19 obtained for the Manhattan-era fuel slugs.
20 The fuel design was a work-in-progress as they
21 gained experience operating the original

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1 piles. But we feel the uranium content used
2 in the OTIB-54 calculations was appropriate.

3 "We also believe the aluminum
4 content should be revised upward. This is not
5 expected to have any appreciable impact on the
6 data provided in OTIB-54.

7 "The aluminum used in the Hanford
8 slugs was high purity. So increasing the
9 amount should not impact the activity ratios
10 for the predominant radionuclides."

11 It sounds to me like NIOSH has
12 proposed doing some additional work here.

13 DR. MAURO: Well, it sounds like
14 they've answered the question. They have
15 proposed to answer the question. And it
16 sounds like an in abeyance. In other -- an
17 answer to the question is provided here, and
18 that they plan to provide that answer in the
19 next revision as appropriate.

20 CHAIR MUNN: Yes.

21 DR. MAURO: So I would recommend

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1 in abeyance, if you folks agree.

2 CHAIR MUNN: I have no objection
3 to that. It's what I would --

4 MEMBER GRIFFON: John, I don't --
5 Wanda, I'm sorry. I don't understand why that
6 would be in abeyance. They haven't told us
7 how they are going to answer it. They intend
8 to answer it, but we haven't seen any kind of
9 text or rationale.

10 CHAIR MUNN: Because it says, "The
11 discussion of the bases will be expanded to
12 include appropriate reference citations."

13 DR. MAURO: Yes, Mark, the only
14 reason I said that is because it's an
15 observation. It sounds like --

16 MEMBER GRIFFON: Yes.

17 DR. MAURO: Yes, if it was a
18 finding, I would agree with you, as if
19 whatever the answer might be might change some
20 of our conclusions. But being that it's an
21 observation, it means --

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1 MEMBER GRIFFON: That's okay. So,
2 mainly, it's going to expand the references.
3 Okay. I can accept that. I'm sorry.

4 DR. MAURO: Yes, you got it.

5 MR. KATZ: There's two things.
6 The references, expand the references, and the
7 aluminum content, it says, should be revised
8 upward. But that's not expected to have an
9 impact.

10 MR. MARSCHKE: Yes, I mean the
11 last sentence there says, basically, whatever
12 the results that they come up with are not
13 expected to impact the activity ratios. Now
14 the question is what happens if the unexpected
15 occurs and they do impact the activity ratios?

16 DR. BURNS: This is Bob Burns. I
17 can jump in at this point.

18 Those revised ORIGEN runs have
19 been done, and the activity ratios did not
20 change.

21 CHAIR MUNN: Thank you, Robert.

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1 DR. BURNS: You're welcome.

2 MR. MARSCHKE: With that
3 information, does the Subcommittee want to
4 change it to in abeyance?

5 CHAIR MUNN: In abeyance.

6 MEMBER ZIEMER: I just have one
7 question.

8 CHAIR MUNN: Yes.

9 MEMBER ZIEMER: It asks for the
10 references, and it asks for the assumptions.
11 Are the assumptions -- well, I guess these are
12 the assumptions here. So this would be what
13 they would include in the expanded text,
14 basically, what they have written.

15 DR. MAURO: Do we wait for that to
16 happen in the actual OTIB, or do we accept it
17 on face value at this time? The difference
18 between closing it now or putting it in
19 abeyance, that's --

20 MEMBER ZIEMER: I think it goes
21 into abeyance because they haven't put it in

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1 yet, right? Isn't that correct?

2 CHAIR MUNN: Correct.

3 MEMBER ZIEMER: Otherwise, I think
4 it's agreeable.

5 CHAIR MUNN: Any objection on the
6 phone? Otherwise, it's going into abeyance.

7 (No response.)

8 Thank you.

9 MR. MARSCHKE: The response that I
10 propose to add is, "NIOSH, Bob Burns,
11 indicated that the additional ORIGEN runs were
12 made and no changes to the activity ratios
13 were observed." Change the status to in
14 abeyance.

15 MEMBER ZIEMER: What was the first
16 part of that?

17 MR. MARSCHKE: "NIOSH --

18 MEMBER ZIEMER: Well, yes, but
19 that only addresses the --

20 DR. MAURO: Half the problem.

21 MEMBER ZIEMER: Yes. The other

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1 part is that -- well, I guess we agree that
2 there's discussion there and the expanded
3 references meet the concerns. In addition --

4 MR. MARSCHKE: In addition --

5 DR. MAURO: NIOSH has committed to
6 edit the document to provide the information.
7 To provide, I guess, references.

8 MR. MARSCHKE: Provide the
9 references?

10 DR. MAURO: That's the way the
11 wording is right now.

12 MR. MARSCHKE: "In addition, NIOSH
13 has committed to provide the references --

14 CHAIR MUNN: I thought they had
15 committed to --

16 DR. MAURO: Incorporate. How
17 about "incorporate?"

18 CHAIR MUNN: To incorporate, to
19 revise the procedures. It's going to revise
20 the procedure.

21 DR. MAURO: Incorporate the

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1 references into this.

2 MEMBER ZIEMER: You know, one sort
3 of format question on this, this column we're
4 putting it in is called an SC&A follow-up
5 column, when in reality it's a Work Group. Is
6 that what we mean when we say that?

7 MR. MARSCHKE: That was one of the
8 other changes we had talked about, giving
9 myself two hats. One hat being --

10 MEMBER ZIEMER: Right.

11 MR. MARSCHKE: -- when I'm here at
12 the Subcommittee identifying it as
13 Subcommittee input, and the other hat -- let
14 me look and see on the list of --

15 MEMBER ZIEMER: I mean let's say
16 that NIOSH had a challenge to what you guys
17 said. Then you would have to go back or
18 something and have --

19 DR. MAURO: Well, no matter what,
20 this would be a Work Group directive.

21 MEMBER ZIEMER: It's always a Work

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1 Group session, though.

2 DR. MAURO: So, really, the title
3 of this is the conclusions or recommendations
4 by the Work Group. Isn't that what this is?

5 MEMBER ZIEMER: Well, I'm just
6 saying I don't think that this is just an SC&A
7 followup.

8 DR. MAURO: I agree with you, yes.

9 MEMBER ZIEMER: It's a Work Group
10 followup, which involves all parties.

11 DR. MAURO: Right.

12 CHAIR MUNN: But that's not going
13 in the SC&A followup.

14 MEMBER ZIEMER: Well, isn't that
15 where it's dumping into it?

16 CHAIR MUNN: Oh, it shouldn't be.
17 It should be going into that --

18 MR. MARSCHKE: It's going into
19 SC&A because I'm SC&A -- I'm identified as
20 SC&A, and I'm identified as the one that is
21 entering it.

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1 CHAIR MUNN: Oh, I thought you
2 were typing in the column that is beyond
3 the --

4 MEMBER ZIEMER: Well, that's the
5 box, but it dumps it into the SC&A followup.

6 MR. MARSCHKE: When I hit "Add
7 Response" here, Wanda, it goes over --

8 CHAIR MUNN: I see that now.

9 MR. MARSCHKE: Yes. The only
10 thing you can look at, it does give a date
11 stamp. And when you see the date stamp
12 corresponds with a Subcommittee meeting date,
13 then it's got my initials --

14 MEMBER ZIEMER: Right.

15 MR. MARSCHKE: -- and the
16 Subcommittee meeting date, then that would be
17 the indication that it was done at the request
18 of the Subcommittee.

19 MEMBER ZIEMER: Right, right.

20 CHAIR MUNN: Either that or we
21 will need to head each of those with --

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1 DR. MAURO: The Work Group
2 directed.

3 CHAIR MUNN: The Subcommittee --

4 DR. MAURO: "The Subcommittee
5 directed SC&A," or something to that effect.

6 MEMBER ZIEMER: You have the SC&A
7 finding, NIOSH initial response, SC&A
8 followup, NIOSH followup. I mean those could
9 go on and on.

10 CHAIR MUNN: Yes.

11 MEMBER ZIEMER: But somewhere in
12 there, and sometimes intermittently, you would
13 have the Work Group input. So I don't think
14 we need to solve that today, but it seems to
15 me there is a formatting issue that we might
16 want to consider so we could distinguish
17 between comments that you guys formally
18 prepare, comments that NIOSH prepares.
19 Because if we weren't closing these, if we
20 needed something more, if they weren't in
21 abeyance, then the next step is NIOSH again.

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1 MR. MARSCHKE: I don't know,
2 again, what would happen if Paul or Wanda were
3 to type in an "Add Response." I don't know
4 where that would end up.

5 MEMBER ZIEMER: Well, I'm not
6 objecting to who's typing it in at all. I'm
7 just saying that the heading of the column
8 seems inappropriate. I mean, are you saying
9 that it won't let you enter something unless
10 SC&A is in the column?

11 MR. MARSCHKE: It identifies
12 anything that I enter as an SC&A response.

13 MEMBER ZIEMER: I got you.

14 MR. MARSCHKE: So the fact that
15 I'm entering it means it goes into the SC&A.
16 Now I don't know, again, if you scroll up to
17 the top here, looking at the headings on the
18 columns, there doesn't seem to be a column
19 heading for the Subcommittee.

20 MEMBER ZIEMER: That was the point
21 I was making. It seems to me that you could

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1 be the designated entry person on behalf of
2 the Work Group or the Subcommittee.

3 MR. MARSCHKE: Yes, we have talked
4 about that.

5 MEMBER ZIEMER: Yes. Yes. I just
6 wanted to raise the point, and I don't
7 necessarily think we have to get into the IT
8 part here, but --

9 CHAIR MUNN: Well, I think we need
10 to resolve the issue because I was unaware,
11 until you called it to my attention, of the
12 fact that it is going into an SC&A column
13 because that's the way Steve is signed in.
14 However, it makes sense to me that where he
15 was typing it, in the blank column following
16 the findings status column, if that heading
17 were Subcommittee Comments or Subcommittee
18 Actions --

19 MEMBER ZIEMER: Something like
20 that.

21 CHAIR MUNN: -- then that's where

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1 that information needs to go --

2 MEMBER ZIEMER: Right, right.

3 CHAIR MUNN: -- as a clear
4 indication that the change in status is taking
5 place as a result of action of the
6 Subcommittee, rather than an SC&A response.

7 MEMBER ZIEMER: Right. And then,
8 I assume the IT people could work it out so
9 that it would let Steve enter stuff into that
10 column on behalf of, really on behalf of the
11 group, which is SC&A and NIOSH and the
12 Subcommittee. I mean we're resolving and it's
13 just input, who's going to input it.

14 CHAIR MUNN: And since it's taking
15 place here -- oh, would you add that to your
16 list, please, Steve? When you're talking with
17 the IT people, tell them that it's our desire
18 that the blank column that's shown on the
19 current display be headed Subcommittee Actions
20 and that you be permitted on Subcommittee
21 dates, if no other time, to sign in in some

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1 way that will allow you to populate that
2 column.

3 MEMBER ZIEMER: One other comment
4 I'll make here. It seems to me that it's
5 possible that there just be a column added
6 after those latest follow-up things. Those
7 latest follow-up things may not get populated.
8 I mean you've got to have initial finding,
9 followup, and then you jump to closure. Or
10 they may get populated.

11 CHAIR MUNN: Dozens of them may
12 get populated anyway.

13 MEMBER ZIEMER: Right. So one of
14 the questions, where would the Work
15 Group/Subcommittee column be?

16 CHAIR MUNN: Right after the
17 finding status.

18 MR. MARSCHKE: I think what you
19 could do, Paul, actually, you could maybe move
20 something like the status to over here and
21 double up this because you have a lot of white

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1 space here.

2 MEMBER ZIEMER: Right.

3 MR. MARSCHKE: And just add a
4 column here as --

5 MEMBER ZIEMER: Right.

6 MR. MARSCHKE: -- for Subcommittee
7 actions column, something like that.

8 MEMBER ZIEMER: Right.

9 MR. MARSCHKE: You know, that's
10 the design of what the thing is going to look
11 like.

12 MEMBER ZIEMER: Right.

13 MR. MARSCHKE: This column, I
14 think when you click, this blank column, I
15 think is when you click on the Add Response,
16 that's when this box pops up. Alternatively,
17 if you click on the Add Response here, you
18 could have that response box pop up into this
19 column and then use this blank column, as
20 Wanda suggested, as the Subcommittee action
21 column.

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1 MEMBER ZIEMER: Right. I mean the
2 Add Response is more like all those boxes
3 that --

4 CHAIR MUNN: So it's an active
5 box.

6 MEMBER ZIEMER: Yes. Yes.
7 Anyway, well, you can work that with the IT
8 people.

9 CHAIR MUNN: So we're now down to
10 09, correct?

11 MEMBER ZIEMER: Right.

12 MR. MARSCHKE: So 09 is a finding
13 for the TRIGA reactors.

14 "TRIGAs ranged in power from 20
15 kilowatts to 16 megawatts, and in U-235
16 enrichment from about 20 percent to 70
17 percent. In addition, several special purpose
18 models were produced. The OTIB chooses 20
19 percent enrichment, but did not justify its
20 choice. Early TRIGA models which may have
21 been present at the facilities considered in

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1 this project may have operated at higher than
2 20 percent enrichment, and this may have
3 affected the potential exposures that
4 personnel could have received. Also, it is
5 not clear what reactor power level is
6 selected."

7 The NIOSH response, "The intent
8 was to represent TRIGA reactors used within
9 the DOE complex that operated with moderate
10 enrichment and burnup. High enrichment is
11 represented by the ATR, which also represents
12 very high burnup. The TRIGA fuel composition
13 used in OTIB-54 represents standard fuel
14 elements. Variation from these standards
15 should be encompassed by other reactor types
16 considered.

17 "The uranium content of the fuel
18 was based on assays of fuel elements from the
19 TRIGA reactors operated in the Hanford Neutron
20 Radiography Facility, NRF, from the late 1970s
21 until March of 1989. A power level of 3

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1 kilowatts was used, pages 18 and 19 of the
2 OTIB, which was the average power level for an
3 NRF assembly. TRIGA reactors typically
4 operated sporadically, rarely for extended
5 periods at steady-state, and fuel elements can
6 stay in core for 10 years or more."
7 Sterbentz, S-T-E-R --

8 DR. MAURO: Sterbentz.

9 MR. MARSCHKE: Sterbentz 1997.
10 "The 11 percent burnup selected came from
11 Sterbentz, pages 12, tables 3 and 4."

12 DR. MAURO: As a non-nuclear
13 engineer, what I read here is a couple of
14 things, and maybe you guys could help me out
15 with it.

16 The first thing I read is that,
17 well, given some of the more extreme
18 circumstances that you postulate might occur,
19 as in our question, there is provision in the
20 OTIB to deal with that by going to a different
21 category of reactor where that type of

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1 circumstance could be accommodated. And
2 that's what I read.

3 But, however, I would say that,
4 well, that direction, if that is, in fact, the
5 intent here, should be in the OTIB. In other
6 words, a little bit more direction is needed
7 to the dose reconstructor to make sure he
8 doesn't fall into the wrong bin when he is
9 doing a given reactor that maybe does not fall
10 within the envelope that we think it falls in.

11 I mean, that is what I read when I read this.

12 And then the other material at the
13 end, I really can't comment on. I'm not quite
14 sure what he is trying to tell me.

15 CHAIR MUNN: The statements that
16 were made in the original finding are
17 certainly correct. I'm not sure how all of
18 the TRIGAs were used throughout the complex,
19 but my guess is that in almost all cases they
20 were identical to the NRF, which means they
21 were used primarily for radiography and for

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1 not anything else.

2 The high enrichment fuel that was
3 used in the early TRIGAs was used primarily as
4 a training mechanism for students and was
5 normally found at university reactors, where
6 the high enrichment gave them an opportunity
7 to practice different kinds of controls on
8 reactors with the different capabilities for
9 sudden peaks in energy.

10 So the response from NIOSH appears
11 to be reasonable if one makes the assumption
12 that the use for the entire complex was almost
13 always non-destructive testing -- I know it to
14 be the case for the referenced reactor here.

15 I can't imagine why TRIGAs would
16 be used with high enrichment in the complex.
17 Can you, Paul or Mark?

18 MEMBER ZIEMER: Well, I don't know
19 the answer to that. I do note that he answers
20 the power question that apparently is in the
21 OTIB. They said that it wasn't clear what was

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1 used, and he does clear that one up.

2 DR. MAURO: Oh, good. Thank you.

3 MEMBER ZIEMER: I think I would be
4 more comfortable to wait on this one.

5 CHAIR MUNN: Okay.

6 MEMBER ZIEMER: It seems
7 reasonable, but I don't know what was in the
8 complex in terms of enrichments. Clearly, if
9 they went to high enrichment, as John
10 suggested, it was not used -- the TRIGA model.

11 DR. MAURO: You see, in the end,
12 it really comes to be very simple. There's a
13 set of instructions given. Where do you go,
14 once you know your gross beta-gamma, what
15 table do you use in the OTIB to determine what
16 the mix is?

17 CHAIR MUNN: Yes.

18 DR. MAURO: And with this point,
19 this is saying, well, listen, for TRIGAs, it's
20 more complicated than that and you need a
21 little bit more guidance on how to find your

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1 way, navigate your way through the various
2 tables.

3 CHAIR MUNN: But it's correct, the
4 ATR is probably the better one for high
5 enrichment and burnup, logically speaking,
6 better.

7 MEMBER ZIEMER: Now this is in a
8 document that's dealing with internal --

9 DR. MAURO: Internal dose.

10 MEMBER ZIEMER: -- dose. And I
11 guess their concern here is fuel elements that
12 may be leaking --

13 DR. MAURO: Yes.

14 MEMBER ZIEMER: -- which is a
15 particular problem if you're changing out
16 elements, and so on. Well, it can be a
17 problem even if they're in the system, but I
18 think his point in the slow turnover and usage
19 is because they don't get much burnup.

20 CHAIR MUNN: No, they really
21 don't.

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1 MEMBER ZIEMER: You don't get a
2 lot of contribution to internal dose by
3 handling because you're not handling it.

4 CHAIR MUNN: I just can't
5 imagine --

6 MEMBER ZIEMER: But I think I
7 would like to hear what --

8 CHAIR MUNN: What Steve is
9 probably doing.

10 MEMBER ZIEMER: -- Steve has to
11 say this afternoon on that.

12 CHAIR MUNN: So this is the second
13 item. What was the first item?

14 MR. KATZ: Item 7.

15 CHAIR MUNN: Item 7? All right.

16 MEMBER ZIEMER: I do know what
17 Wanda said is very correct. Almost all the
18 university reactors add high enrichment. This
19 was true at our campus, where we have a very
20 small reactor with 93 percent enrichment.

21 CHAIR MUNN: Right, yes.

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1 MEMBER ZIEMER: Yes, and that's
2 why all these university reactors have had to
3 change over in recent years. They're
4 concerned about this high enrichment stuff
5 being around on campuses.

6 CHAIR MUNN: All right. We will
7 keep that one in abeyance for --

8 MR. MARSCHKE: Abeyance or keep it
9 open?

10 CHAIR MUNN: Well, we'll keep it
11 open. Keep it open for the moment.

12 MEMBER ZIEMER: Just leave it
13 until this afternoon.

14 CHAIR MUNN: Yes. Correct. We're
15 just leaving it for Steve Ostrow this
16 afternoon.

17 MEMBER ZIEMER: We don't have to
18 enter anything until we're done later today.

19 CHAIR MUNN: All right. Then our
20 next item will be item No. 10.

21 MR. MARSCHKE: And 10 is an

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1 observation.

2 "SC&A finds that the OTIB
3 rationale for selecting the four
4 representative reactor cases and the seven
5 decay times to be reasonable."

6 The NIOSH response is no response
7 needed.

8 DR. MAURO: Closed?

9 CHAIR MUNN: Closed.

10 MEMBER ZIEMER: Closed.

11 CHAIR MUNN: Any objection on the
12 phone?

13 MEMBER LEMEN: Dick.

14 CHAIR MUNN: Item 11 is a finding.

15 MR. MARSCHKE: We needed the
16 source terms, reactor source term.

17 "SC&A notes that the number of
18 nuclides included in table A3 for the ATR is
19 234, table A4 for the FFTF, 242, table A5 for
20 the N Reactor, 268. Then, in table A6, for
21 the TRIGA, 273. The majority of these

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1 nuclides are common to all reactor types, and
2 the total number of different radionuclides
3 listed in these tables is 277. SC&A would
4 like to see a listing of 738 radionuclides for
5 which the OTIB states dose conversion factors
6 were obtained."

7 The NIOSH response, "The text will
8 be revised to clarify that nuclides that
9 showed zero activity as of 10 days decay were
10 not included in table A3 through A6. A list
11 of the 738 nuclides can be provided."

12 CHAIR MUNN: Can we ask that they
13 will be provided in the document?

14 MEMBER ZIEMER: Well, I would
15 raise a question as to why we need to provide
16 the list of nuclides for which the activity is
17 zero. Is that just to confirm that --

18 CHAIR MUNN: That they have
19 touched all the bases; they know it is there.

20 MEMBER ZIEMER: Or they have
21 considered it? It seems a little superfluous

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1 on the surface, but maybe there is a reason
2 that maybe we should --

3 MR. HINNEFELD: If we're going to
4 edit the document anyway, we can add text to
5 say here's a list of all 738 radionuclides
6 that were analyzed.

7 MEMBER ZIEMER: That are
8 considered, and the ones with zero activity --

9 MR. HINNEFELD: I mean it's
10 essentially the same edit.

11 MEMBER ZIEMER: Yes.

12 MR. HINNEFELD: If you're going to
13 say that you're going to edit the document to
14 specify the document reflects less than zero
15 after 10-day decay -- weren't included in
16 these tables.

17 DR. MAURO: And here's a table
18 that shows it.

19 MR. HINNEFELD: The appendix shows
20 all the radionuclides analyzed.

21 MEMBER ZIEMER: I was just

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1 thinking you have got an appendix with 500
2 nuclides that aren't included.

3 MR. MARSCHKE: What's the
4 definition of zero? Because when you do the
5 decay equation, you go down to 10 to the
6 minus --

7 MR. HINNEFELD: Well, I don't
8 know. I suppose there's --

9 MEMBER ZIEMER: Well, this is for
10 all practical purposes, isn't it?

11 DR. MAURO: Well, the table is
12 there. It ought to probably be put in.

13 MEMBER ZIEMER: All right.

14 DR. MAURO: There will be a little
15 asterisk next to the zero.

16 MEMBER ZIEMER: Less than.

17 MR. HINNEFELD: Yes, we could put
18 a less than some value, if there's some
19 value --

20 DR. MAURO: That is the easiest
21 way to close this. It's not burdensome, I

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1 mean.

2 MR. HINNEFELD: You can provide
3 the list of nuclides. You can make that an
4 appendix to the document.

5 DR. MAURO: Recommend in abeyance
6 until that list is provided?

7 CHAIR MUNN: In abeyance, yes.

8 MEMBER ZIEMER: The response is
9 certainly adequate, yes.

10 CHAIR MUNN: Yes.

11 In abeyance, awaiting revision,
12 ought to be adequate for it, shouldn't it?

13 Will it help or will it be a
14 distraction if, while Steve is typing, we go
15 ahead and read the next item? Is that
16 acceptable to everybody? While Steve's
17 typing, let's go on. Will that bother you,
18 Steve, if I'm reading?

19 MR. MARSCHKE: No.

20 CHAIR MUNN: All right. Then
21 let's go to item 12, finding -- observation.

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1 Oh, it's an observation. Sorry. Reactor
2 source term.

3 "Based on an independent
4 assessment, SC&A agrees with the list of
5 radionuclides presented by NIOSH in table D1,
6 although NIOSH does not provide an explanation
7 for the derivation of the relative exposure
8 activity fractions at that table."

9 NIOSH response, "We will elaborate
10 on the method used to calculate the values in
11 table D1. The nuclides that contributed at
12 least 1 percent of dose to any organ or to
13 effective dose for at least one of the three
14 solubility categories retained the
15 dosimetrically-significant nuclides. The --
16 results for each reactor and decay time were
17 then compiled for each set of dosimetric --
18 nuclides, and the values renormalized. The
19 data in table D1 are those renormalized values
20 multiplied by the exposure fractions found in
21 DOE Standard 1027. The exposure fractions are

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1 provided in table D1."

2 I read the first sentence to mean
3 that there will be an addition, an elaboration
4 to the table, to the methods in this table,
5 which would put it in abeyance. Am I reading
6 that correctly?

7 DR. ULSH: Well, it would be as
8 long as that response is agreeable.

9 CHAIR MUNN: Yes.

10 MEMBER ZIEMER: Yes -- provided an
11 explanation of the derivation of the fraction,
12 and then I think that does it.

13 CHAIR MUNN: I can't see any
14 problem.

15 On the phone, any feedback? In
16 abeyance all right, awaiting revision?

17 MEMBER ZIEMER: It sounds like a
18 yes to me.

19 (Laughter.)

20 CHAIR MUNN: Yes, I think I'll
21 take that as a yes.

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1 MEMBER ZIEMER: Nodding their
2 heads vigorously.

3 (Laughter.)

4 CHAIR MUNN: Yes, I think so.
5 Let's hope.

6 And while Steve is typing 12, we
7 will go to 13, finding, reactor source term.

8 "SC&A reviewed the list of 17
9 radionuclides in table E1 and believes that
10 four radionuclides, Pr-143 and cobalt-60,
11 Te-132, and Nd-147 should be added using a
12 quantitative criterion. Effective doses
13 greater than 1 percent sum of the effective
14 doses for all radionuclides instead of the
15 unjustified qualitative criteria used by
16 NIOSH."

17 NIOSH response, "We will agree and
18 we will make this change."

19 MEMBER ZIEMER: That sounds to me
20 like it's resolved.

21 DR. MAURO: In abeyance.

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1 CHAIR MUNN: In abeyance, awaiting
2 revision.

3 The next item 14, finding, reactor
4 source term.

5 "SC&A questions averaging the
6 source terms over the four reactor types to
7 produce the `default source terms' in table
8 E1, since it is expected that in most cases
9 the dose reconstructor would know which type
10 of reactor or reactor fuel produced the
11 claimant's exposure."

12 The NIOSH response, "The data in
13 table E1 are not averaged across the four
14 reactors. The comment pertains to table E2.
15 We do not agree that DRs will know what
16 reactor to select in most cases. The purpose
17 for averaging across the four representative
18 reactors was to create a single hypothetical
19 representative reactor appropriate for all
20 sites. The four representative reactors were
21 selected because they encompass the wider

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1 range of reactor types, themselves selected to
2 cover a wide range of fuel types, enrichment,
3 and burnup."

4 DR. MAURO: Do you want me to take
5 the first shot at this one? I think we have
6 an issue.

7 CHAIR MUNN: You may, or we can
8 wait for Steve.

9 DR. MAURO: Yes, okay. My sense
10 is whenever you are in a circumstance like
11 this in the past, you always go with the
12 limiting one. If you don't know which reactor
13 type you're dealing with, and you have four
14 different mixes, you pick the mix that is most
15 limiting to your particular cancer.

16 CHAIR MUNN: Right.

17 DR. MAURO: That would be the way
18 I would have expected it, but it was not.
19 There may be more to the story, and certainly
20 we will hear from Steve on that. But my first
21 reaction would be you don't go with the

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1 average. You go with the one that is limited.

2 MEMBER ZIEMER: Well, the other
3 thing, though, you may get different, for each
4 reactor by itself may not give the limiting
5 thing. It looks like they're taking the
6 average of the fuel types and enrichments and
7 burnups, but any subcombination of that may
8 not give you the limiting dose. So I think we
9 need to ask that. Do you know what I'm
10 saying?

11 DR. MAURO: Okay.

12 MEMBER ZIEMER: Do you know what
13 I'm saying? In other words, by putting them
14 together, you may be -- let's say you have one
15 by itself, and maybe it has the maximum
16 enrichment, but its other parameters are such
17 that it wouldn't give you a limiting dose.

18 DR. MAURO: Right.

19 MEMBER ZIEMER: Do you see what
20 I'm saying?

21 DR. MAURO: So in effect, what

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1 you're really saying, listen, whenever this
2 particular strategy, is that the bounding
3 strategy, given the --

4 MEMBER ZIEMER: Yes, right. In
5 other words, maybe putting them together pulls
6 up other -- you know, here's one that is
7 higher power, but it is a lower enrichment.

8 DR. MAURO: Right. And when you
9 combine them all --

10 MEMBER ZIEMER: Right.

11 DR. MAURO: -- you come up with
12 the most limiting.

13 MEMBER ZIEMER: So I think we need
14 to hear from Steve on how he understood that
15 to be.

16 DR. MAURO: Okay.

17 MEMBER ZIEMER: That would be one,
18 I think, that is certainly open to debate. I
19 don't think a priori picking one in my mind
20 would necessarily give you the maximum dose.

21 DR. MAURO: But I would argue

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1 that --

2 CHAIR MUNN: Or the appropriate
3 dose.

4 DR. MAURO: Let's say it turns out
5 that there's some kind of amalgam that creates
6 a set that will be more limiting than any one
7 set by itself.

8 MEMBER ZIEMER: Yes.

9 DR. MAURO: But that would not be
10 reality. See I would argue that you could do
11 that, but that's not a real situation. A real
12 situation is it's one of those four; we just
13 don't know which one. So in my mind, if you
14 have four that it might be, but you don't know
15 which one; you pick the one that is limiting
16 for that cancer.

17 MEMBER ZIEMER: And maybe NIOSH
18 would have to come back on that because you
19 might find that the average gives you a
20 greater dose than any of the single ones by
21 themselves. I don't think we know in advance

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1 that that wouldn't be the case. I think we
2 need to hear the debate on this one.

3 DR. MAURO: Yes.

4 CHAIR MUNN: Yes, that's a
5 possibility that there's more to it than meets
6 the eye.

7 DR. ULSH: Well, we had Bob Burns
8 on the line earlier.

9 Bob, are you still out there?

10 DR. BURNS: I am.

11 DR. ULSH: Now do you want to hear
12 from Bob now or do you want to wait for Steve?

13 MEMBER ZIEMER: Well, I think
14 both, but maybe Steve needs to hear the
15 debate, though.

16 DR. ULSH: So wait until the
17 afternoon?

18 MEMBER ZIEMER: Maybe we can get a
19 preliminary understanding. Bob, on the
20 averaging, does that tend to take care of
21 extremes that -- well, tell us what it does.

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1 DR. BURNS: Well, I guess a couple
2 of things. One, there were several persons
3 involved in compiling this OTIB. I am just
4 one of them, and I am not the internal
5 dosimetrist of the group.

6 But I would comment that, in
7 addition to averaging across the four
8 reactors, there were other issues at play here
9 that result in the representative ratios
10 being, in our view -- we have to be careful
11 using words like conservative and bounding,
12 but the way the data are normalized, the way
13 we did not account for power history, et
14 cetera, the numbers are so conservative to
15 begin with that that was part of the rationale
16 for choosing to average across the reactors,
17 rather than try to pursue what's being
18 discussed here, which is select the limiting
19 case, besides the fact of the complexity of
20 doing that, trying to look at all the
21 different organs and all the different

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1 cancers, et cetera.

2 DR. MAURO: Okay, I understand
3 what I think -- so it was not what you
4 suspected it might be, where they went and
5 picked the worst mix.

6 CHAIR MUNN: Right.

7 MEMBER ZIEMER: Well, I don't
8 think they did pick the worst mix, but they
9 averaged them.

10 DR. MAURO: They averaged them.

11 DR. BURNS: Right.

12 MEMBER ZIEMER: Some other factors
13 that come into the dose --

14 DR. MAURO: Well, I guess, in the
15 end, what you're saying, what I'm hearing is,
16 to simplify the problem --

17 DR. BURNS: Right. We didn't want
18 to make it so complex that the DRs would just
19 throw their hands up and say, "Give me a
20 break."

21 DR. MAURO: I understand. At the

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1 same time, though, the fact that you don't
2 know what reactor it is, you also want to be
3 pretty confident that you're not selling the
4 guy short.

5 DR. BURNS: Exactly. We had a lot
6 of discussion on that topic, and some of the
7 later comments speak to it as well. Just the
8 way the data are normalized and renormalized,
9 each time you do that, you are just -- I hate
10 to say we're overstating things, without
11 something quantitative to fall back on, but we
12 didn't believe for a minute we were
13 understating any doses.

14 DR. MAURO: Yes.

15 DR. ULSH: So the crux of the
16 issue is going to be to Steve and SC&A, except
17 that the way they are proposing to do it is,
18 in fact, conservative and you won't be
19 shortchanging the DRs.

20 DR. MAURO: There is enough built
21 in. There's enough built in to the overall

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1 process where, even though they are not
2 picking the -- because it's -- I could
3 understand the dilemma. You've got four
4 different mixes, and you don't know which one
5 to use. And let's say you're dealing with a
6 particular type of cancer. Which mix is going
7 to be limiting is going to be a process that
8 could be pretty -- although I have seen you
9 guys make workbooks that do things much more
10 complicated than this.

11 (Laughter.)

12 But, fine. We will wait for Steve
13 and see what he has to say.

14 MEMBER ZIEMER: Well, the only
15 other comment I was just going to make is that
16 this may be one of those where you guys would
17 have to study in more detail what the impact
18 of that approach is. I mean they have
19 explained now why they did it, but we need to
20 hear from Steve also, I think.

21 DR. MAURO: One way to achieve

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1 closure on something like this, in principle,
2 is, okay, here's the mix you're going to use
3 for this person who has a particular cancer.
4 The question becomes, if I were to not use
5 that, but use type 1 or type 2 or type 3 or
6 type 4 mix, as opposed to this amalgamated
7 mix, is it possible to come up with a higher
8 dose for that person who got cancer? If the
9 answer to that is yes, we've got a problem.

10 MR. KATZ: The bottom line is, is
11 their answer conservative still? You are not
12 trying to maximize conservatism. You just
13 have to be --

14 DR. MAURO: Well, no, no, what I
15 am saying is the fact that you don't have a
16 particular piece of information what reactor
17 this guy was working at, for some reason you
18 don't have that information, then he is
19 penalized because you lack that information.
20 If you did have that information and it turned
21 out to be that reactor, he would get a higher

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1 dose. And I'm troubled by that.

2 Do you see my logic?

3 MEMBER ZIEMER: Well, I don't
4 think we know that a priori. The other thing,
5 it appears to me, I may not have a complete
6 feel for this, but if you're the claimant and
7 let's say we know what reactor it is, you
8 still have the issues of that reactor when, in
9 the course of, you know, when you have the
10 whole power history thing, which they are not
11 using, and by not using the power history,
12 that changes, but even getting the power
13 history itself and applying it to an
14 individual, so every time they do this,
15 they've got to go back and get the power
16 history of a reactor and at some point --

17 DR. MAURO: But what I heard from
18 the earlier answer is you are at a point --
19 power history where you have reached an
20 equilibrium for a --

21 MEMBER ZIEMER: Well, I don't know

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1 that a priori for a given claim, do I?

2 DR. MAURO: No, I guess I thought
3 he said lookup tables with --

4 MEMBER ZIEMER: Oh, yes, those
5 might be.

6 DR. MAURO: -- were insensitive to
7 the power level or the power history. At some
8 point, the strontium-90 and the cesium-137
9 concentration in the core and in the coolant
10 are going to not change because they have
11 achieved equilibrium.

12 MEMBER ZIEMER: Right, right, but
13 if you do the individual case, you may find
14 that -- in other words, they are using a
15 maximizing assumption in that case. Do you
16 see what I'm saying?

17 DR. MAURO: Yes.

18 MEMBER ZIEMER: If I have your
19 case, and you worked on this reactor, and I
20 looked and I said, well, you know, that
21 reactor has only been going for one month or

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1 something --

2 DR. MAURO: That short a time
3 period may create a ratio which is more
4 conservative than, let's say, the one they are
5 using.

6 MEMBER ZIEMER: Oh, yes, because
7 the fission products build -- I mean, if
8 you're at equilibrium, if that's what they
9 did, then you have maximized something like
10 that --

11 DR. MAURO: Well, you maximize the
12 concentrations, but as you create a ratio,
13 that's the worst. Do you see? Remember,
14 you're measuring the gross beta-gamma in the
15 urine. You're going to say, well, what's the
16 mix? Well, we are going to assume the mix is
17 the mix that's in the reactor at equilibrium
18 for that kind of reactor. That's what I
19 understand.

20 Now what I just heard is that that
21 mix may -- it changes as a function of time.

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1 MEMBER ZIEMER: Oh, it changes,
2 yes, of course.

3 DR. MAURO: Maybe the mix, though
4 you may have the max inventory, that doesn't
5 mean you have the most limiting ratio.

6 MEMBER ZIEMER: Right, and then
7 the exposure may occur at some different time
8 after that, yes.

9 DR. MAURO: Yes.

10 MEMBER ZIEMER: So there's a lot
11 of --

12 DR. MAURO: Yes. Well, now you
13 just tied my brain into a knot, and I don't
14 know.

15 MEMBER ZIEMER: Yes, and I'm just
16 talking in the dark here because I don't know
17 exactly what --

18 DR. MAURO: Yes, and I'm a
19 biologist, so leave me alone, okay?

20 (Laughter.)

21 MEMBER ZIEMER: We don't even know

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1 if we're talking about the right stuff.

2 (Laughter.)

3 CHAIR MUNN: All right. We'll
4 dump all this on Steve when he gets here.

5 MEMBER ZIEMER: I think Steve has
6 to look at this. Just on the surface, it just
7 looks to me like it may be something that,
8 even knowing Steve's -- or having Steve's
9 reaction, we may want to formalize it.

10 DR. MAURO: We had better look at
11 this.

12 MEMBER ZIEMER: Yes, yes.

13 CHAIR MUNN: Good. All right. We
14 are ready to move on to 15.

15 MR. KATZ: So we're going to
16 revisit this 14 with Steve?

17 CHAIR MUNN: Yes, we will revisit
18 14 --

19 MEMBER ZIEMER: He's going to come
20 back this afternoon.

21 CHAIR MUNN: -- when Ostrow is

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1 here.

2 MR. MARSCHKE: That's the third
3 one?

4 MR. KATZ: Yes.

5 CHAIR MUNN: It is.

6 Now item No. 15, finding, reactor
7 source term.

8 "Some radionuclides were not
9 released in significant quantities from all
10 four reactor types. The average source term
11 for those radionuclides is listed in table E2.
12 The default source terms underestimates the
13 values given in table E1, simplified source
14 terms."

15 NIOSH response, "See comment 14.
16 The data in table E1 are not averaged across
17 the four reactors. The comment pertains to
18 table E2. We do not agree that DRs will know
19 what reactor to select in most cases. The
20 purpose for averaging across the four
21 representative reactors was to create a single

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1 hypothetical representative reactor
2 appropriate for all sites."

3 There's no reason to read that all
4 over again. It's the same answer as No. 14.
5 And I'm assuming that we will, therefore, add
6 that to the list that we are going to include
7 in our discussion with Ostrow.

8 MR. MARSCHKE: Wanda, do you want
9 to add it to the list or do you want to have
10 it addressed in, change the status to
11 addressed in comment 15 or comment 14? We
12 could change the status and say that this is
13 actually a duplicate of 14, and the response
14 will be addressed in the response for comment
15 14.

16 DR. ULSH: Well, do you agree that
17 if we come to closure on comment 14, that
18 would necessarily address this one?

19 CHAIR MUNN: Well, source term is
20 -- are we assuming that the only source term
21 are the releases that are referenced in 15?

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1 Fourteen says source term. Fifteen says,
2 "Some radionuclides were not released in
3 significant quantities from all four reactor
4 types."

5 MR. MARSCHKE: These are the two
6 tables that they're talking about, by the way,
7 tables E1 and E2. But, see, basically, table
8 E1 has data for four different types of
9 reactors, the ATR, the FFTF, the N Reactor,
10 and TRIGAs; whereas, table E2, basically, just
11 goes through and adds all those values up and
12 divides by four, which I don't know is the
13 appropriate way to do that because if you look
14 at, for example, iron-55, there's only one
15 value in iron-55. And it appears what they
16 did was they took that one value and divided
17 it by four and came up with a value for table
18 E2, which I don't know if that's really a
19 claimant-favorable way to do that.

20 But these are the two tables that
21 are in discussion.

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1 CHAIR MUNN: It's difficult for me
2 to identify whether there is -- there was a
3 difference in the thinking process of the
4 original reviewers with respect to source
5 terms or released radionuclides. Since we're
6 talking about internal dose here, one would
7 seem that that source terms would all be,
8 quote, "released radionuclides." So it is
9 difficult to identify, in my mind, what the
10 difference in the two findings is.

11 MEMBER ZIEMER: Well, one is that
12 they have indicated that there are some
13 nuclides that are missing, it appears. Or
14 what does it say?

15 CHAIR MUNN: They are not released
16 in significant quantities from all four
17 reactor types.

18 MR. MARSCHKE: I think that,
19 Wanda, to me, that refers to the fact that,
20 for example, U-155, for the ATR, there's no
21 value here.

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1 CHAIR MUNN: Yes.

2 MR. MARSCHKE: For the FFTF, there
3 is a value. Iron-55 triggers the only one
4 that has a value for it. So it's saying that
5 for ATR, the FFTF and the N Reactor, iron-55
6 is not released in any significant quantities.

7 DR. ULSH: It seems to me that we
8 don't necessarily have to demonstrate that
9 each cell here is conservative. In other
10 words, for each radionuclide, this provides a
11 conservative case. What we have to show is
12 that sum total, treating people this way, will
13 not result in a lower internal dose than sum
14 total for each of these different reactor
15 types.

16 DR. MAURO: I have got a problem.
17 This is the core inventory, right? What are
18 we looking at? What is that?

19 MR. MARSCHKE: This is source
20 term. This is released.

21 DR. MAURO: Oh, this is released

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1 to the coolant? Is that what we're talking
2 about?

3 MR. MARSCHKE: This is release for
4 intake calculation.

5 DR. MAURO: Yes, I just wonder,
6 what are the units of the numbers that we're
7 looking at?

8 DR. BURNS: Where they're
9 dimensional, it's because they're normalized,
10 but that's the product of activity and the DOE
11 standard release fractions. Those are being
12 treated as intake fractions.

13 DR. MAURO: Okay. Let me tell you
14 what I'm thinking.

15 DR. BURNS: Okay.

16 DR. MAURO: Whenever I used to do
17 dose calculations from radionuclides released
18 from a reactor, my starting point was always
19 the primary coolant, and the mix of
20 radionuclides in the primary coolant was
21 dramatically different than the mix of

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1 radionuclides that were in the core because
2 some radionuclides leave much more rapidly.
3 Cesium leaves more rapidly than strontium.

4 Now that being the case, how is
5 that -- and the reality is, of course, any
6 workers that are exposed are going to be
7 exposed to what is in the primary coolant.
8 That leaks out, and somehow they inhale it. I
9 presume that is the process we are in now.

10 Maybe you could just help me out
11 because I sort have taken some steps backward.

12 But how is that taken into consideration?
13 The reality of the situation is it's the
14 primary coolant and the mix that is in the
15 primary coolant that is at play here. How is
16 that sort of captured in the process here?

17 DR. BURNS: The short answer is
18 that was the intent when we applied the
19 release fractions, I believe they're called,
20 from the DOE 1027 standard. We were trying to
21 address those mechanisms.

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1 DR. MAURO: Oh, so the release
2 fraction is this multiplier on the core
3 inventory that says, what fraction that's --
4 has the potential to escape?

5 DR. BURNS: That's correct.
6 What's available --

7 DR. MAURO: Thank you.

8 DR. BURNS: Right.

9 DR. MAURO: I'm okay again.

10 DR. BURNS: Okay. Then, again, we
11 treated those as intake fractions.

12 DR. MAURO: I got you. Okay. I'm
13 sorry for the little --

14 MEMBER ZIEMER: Well, let me ask
15 one additional question as a followup. The
16 primary coolant also, typically, contains
17 activation products which are not from the
18 fuel but are from components. Is that in the
19 mix?

20 DR. BURNS: The short answer would
21 be, I guess the short answer would be no,

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1 since there's no good way to model that.
2 What's modeled is the fuel and the cladding
3 and any associated impurities. But if there's
4 other stuff, if you've got makeup water that's
5 mineralized or something like that, I've got
6 no good way to account for that other than
7 attempting to do it through the impurities I
8 included in the fuel and cladding
9 compositions.

10 MEMBER ZIEMER: Yes. Well, that's
11 kind of a separate question.

12 I think, John, what I was
13 understanding from your earlier question was
14 why wouldn't you take the highest value, let's
15 say, barium, look at everything, and pick the
16 highest value, and put that in the default?

17 DR. MAURO: No, I was saying --

18 MEMBER ZIEMER: Wasn't that what
19 you were saying originally?

20 DR. MAURO: No. I was saying that
21 this is sort of like some kind of hybrid.

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1 MEMBER ZIEMER: No, I understand
2 that, but --

3 DR. MAURO: And this doesn't
4 really exist in reality.

5 MEMBER ZIEMER: Right, and your
6 original question was -- it sounded like it
7 was why wouldn't you just take any nuclide and
8 say, okay, what's the highest that you get
9 from anything, and put that in --

10 DR. MAURO: No, no, I was saying
11 that, no, what you would do is, if you have a
12 guy, and you've got his gross beta-gamma, and
13 you know he works at an ATR, well, of course,
14 you would use this mix. And, of course, we
15 have the burnup.

16 MEMBER ZIEMER: But if you don't
17 know where he works --

18 DR. MAURO: If you don't know, you
19 wouldn't know here. Why don't you, if you
20 don't know, which is the one that is the worst
21 one.

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1 MEMBER ZIEMER: That's what I was
2 just saying.

3 DR. MAURO: Not the single isotope
4 which --

5 MEMBER ZIEMER: No, no.

6 MR. HINNEFELD: So you're saying
7 run the calculation four times?

8 DR. MAURO: Yes.

9 MR. HINNEFELD: Essentially, as if
10 he worked at ATR; run it as if he worked at
11 FFTF, and --

12 DR. MAURO: Right, and which is
13 the worst one?

14 MR. HINNEFELD: Run the ones four
15 times, and whichever one comes out the best
16 for the claim, you do that?

17 DR. MAURO: That's what I had in
18 mind. I'm not saying I can tell. There may
19 be good reason not to do that, but that seems
20 to be -- I realize that you have been in a lot
21 more complex situations than this and done

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1 that, where you have say, just like you have
2 different forms of the isotopes. You run
3 every isotope and figure out which is the one
4 that is most limiting for that cancer.

5 So, yes, it would mean, if you
6 didn't know, you would have to do it four
7 times. But take this. It's not apparent to
8 me why the average of them all is, in fact,
9 claimant favorable, in fact, it may not be
10 claimant favorable if one of them really is a
11 bad actor.

12 DR. ULSH: If we could demonstrate
13 one time, if we could take this table and run
14 it -- I don't know; I'm thinking on the fly
15 here, which is always dangerous -- demonstrate
16 that for each cancer this mix would give you a
17 better result than any of the individual ones,
18 then you would be okay with that?

19 DR. MAURO: Then you've got it,
20 sure.

21 DR. ULSH: I mean I think the

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1 reason that we are doing this is so that we
2 don't have to run every case four times,
3 right, Bob?

4 DR. BURNS: Right. And again, it
5 was keep, since we felt we were conservative
6 to begin with, we just didn't want to keep
7 piling on and create a document that was just
8 overly complex.

9 DR. ULSH: So the question it
10 seems that you have here is does this table E2
11 give you a result that is always conservative,
12 given the plausible alternatives here?

13 DR. MAURO: Yes.

14 DR. ULSH: That's the question?

15 DR. MAURO: Yes.

16 CHAIR MUNN: That it is reasonably
17 conservative, not necessarily the most
18 conservative.

19 DR. ULSH: Well, by "reasonable,"
20 what I think we could say is, is it better
21 than an ATR or an FFTF or any of the other

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1 choices, not necessarily each individual
2 radionuclide, but as a group?

3 DR. MAURO: As a group, of course.

4 DR. ULSH: Right?

5 CHAIR MUNN: Yes.

6 MR. MARSCHKE: Wouldn't the
7 selection, another way to do it, I mean
8 couldn't you make one run-through and look and
9 see which type cancer is associated with which
10 of the four reactor types, and wouldn't that
11 always hold? Like if -- I don't know -- bone
12 cancer was always, or ATR was always the
13 reactor you picked, but you had bone cancer,
14 or --

15 DR. MAURO: If you don't know the
16 reactor. But you know the reactor.

17 MR. MARSCHKE: If you know the
18 reactor, yes, you can pick the reactor. But
19 if you know the cancer type, couldn't you
20 basically go backwards and look and see, okay,
21 this cancer type, and have that as

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1 basically -- I mean would that change?
2 Wouldn't that change? Wouldn't that stay the
3 same from claimant to claimant and just be
4 dependent upon the type of cancer that they
5 had?

6 MR. HINNEFELD: It could
7 theoretically change based on time since
8 exposure to diagnosis.

9 DR. ULSH: It's probably not as
10 sensitive as I'm talking about here, but --

11 MR. HINNEFELD: And, in fact, if
12 it changes, if any of these comparisons change
13 based on exposure time, time from exposure to
14 diagnosis, theoretically, you almost can't do
15 any comparisons ahead of time.

16 DR. MAURO: Let me show you an
17 example. In general, strontium-90 is an
18 important contributor to bone cancer. So in
19 this situation, now, of course, this ratio is
20 indexed of intake for the trigger SS power is
21 7.9 minus 2 while your strontium-90 number at

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1 1 meter is 4 minus 2. It's about 32 -- so, I
2 mean, just my intuition says it seems that you
3 would get a better deal if you assumed this
4 for the guy you didn't know. That's just
5 looking at strontium-90, of course.
6 Strontium-90 is an important contributor to
7 the bone dose, as you know.

8 DR. ULSH: Right. Exactly. But
9 what we have to show is that, for each of
10 these things, added up together --

11 DR. MAURO: Yes.

12 DR. ULSH: -- you get the worst
13 deal here than if you took --

14 DR. MAURO: But would you agree it
15 gets a better deal if you defaulted to this in
16 that case? A fellow with bone cancer and just
17 looking at these numbers, this is the highest
18 one of all, the high strontium, this one for
19 this one because of that.

20 Now if it turns out you did it
21 this way and he did it this way, he gets a

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1 better deal out of this, don't you think we
2 should use this?

3 DR. ULSH: If we find a case
4 where, say, bone cancer, where a TRIGA is a
5 plausible alternative and this gives him a
6 lower number than a TRIGA, then we've got a
7 problem.

8 DR. MAURO: That is all I'm
9 saying.

10 DR. ULSH: Right.

11 MR. HINNEFELD: Well, I don't know
12 that I want to sign up to saying necessarily.

13 PUBLIC PARTICIPANT: I heard the
14 number of radionuclides has already been
15 reduced and simplifying assumptions have
16 maximized the numbers already.

17 DR. BURNS: Right. That's the
18 issue. I suspect if you picked one of the
19 reactors individually, you could get a bigger
20 number than you would from the average, but
21 that doesn't mean the average still isn't

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1 sufficiently conservative.

2 MR. HINNEFELD: The
3 transcriptionist needs to know who commented
4 before Bob.

5 DR. BURNS: Oh, I'm sorry.

6 MR. HINNEFELD: Would the person
7 who commented before Bob please identify
8 yourself for the transcriptionist?

9 CHAIR MUNN: Who was the woman --

10 MR. KATZ: The woman who
11 commented, can you please let us know who you
12 are?

13 (No response.)

14 A ghost in the system.

15 MR. HINNEFELD: Apparently. We're
16 going to have to fix that. Elyse, you're
17 going to have to let us know.

18 I'm not ready to sign up to just
19 saying here in this meeting that in this
20 instance that selection would have to be made
21 for that one reactor. I think the question is

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1 is the dose reconstruction sufficiently
2 conservative so that no one is shortchanged?

3 CHAIR MUNN: Yes.

4 MR. HINNEFELD: And if that is the
5 case, based on the way these things were
6 developed in the first place and the
7 assumptions made in dose reconstruction,
8 because, let's face it, you know, a mixed
9 fission product internal dosimetry question.
10 It's just abominably complex.

11 So if you make enough simplifying
12 assumptions at the start to arrive at these
13 ratios, so that you're confident, no matter
14 what happened, you have a bounding dose for
15 these people, then I don't think you have to
16 choose individual reactors.

17 DR. MAURO: Okay. I'll take it a
18 step further then. Then just forget about the
19 -- see, what you just said is --

20 MR. HINNEFELD: The bad thing is
21 the visual -- I understand completely what

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1 you're saying. I understand that part.

2 DR. MAURO: If this wasn't so
3 conservative already, but you're going to use
4 it when you know it's that, then later you're
5 going to say, well, listen, this is good
6 enough. Then this should be good enough
7 always.

8 MR. HINNEFELD: If the argument I
9 just made is a good argument, then it should
10 be your only option.

11 DR. MAURO: The only option.

12 MR. HINNEFELD: That should be
13 your only option.

14 DR. MAURO: We're in agreement
15 with that, too. Because once you make that
16 case, that that --

17 MR. HINNEFELD: Once you provide
18 the option of doing one or the other, I think
19 you've done --

20 DR. MAURO: You're going to put
21 yourself in the situation --

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1 MR. HINNEFELD: Then your argument
2 is hard to speak against.

3 DR. MAURO: We understand each
4 other.

5 MEMBER ZIEMER: And you have to be
6 careful not to select one isotope because the
7 other ones --

8 MR. HINNEFELD: Right.

9 DR. ULSH: I just got a -- Elyse
10 doesn't know who that speaker was.

11 MR. HINNEFELD: Well, that's
12 interesting.

13 MEMBER ZIEMER: It sounded like it
14 was one of your staff people at ORAU, but
15 apparently not.

16 MR. HINNEFELD: No one who
17 identified themselves earlier.

18 MR. KATZ: I hope she's okay if
19 she's not able to respond now.

20 MR. HINNEFELD: I hope she's just
21 shy.

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1 MEMBER ZIEMER: So we're going to
2 hold this?

3 CHAIR MUNN: We're going to hold
4 this one --

5 DR. MAURO: Absolutely.

6 CHAIR MUNN: -- to discuss, both
7 14 and 15 will be discussed with Ostrow when
8 he arrives.

9 All right. Then that takes us
10 down to 16. Finding, source term
11 verification.

12 "SC&A agrees that the use of 17
13 radionuclides with adjusted relative activity
14 fractions has an increasing effect on the 50-
15 year committed effective doses and organ doses
16 in relation to the original list. SC&A also
17 agrees that this increasing effect does not
18 include the uncertainties listed in OTIB
19 Section 6.3. As the OTIB does not provide the
20 quantitative effect of the uncertainties cited
21 in Section 6.3, SC&A cannot agree with the

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1 conclusion that the default source term
2 produces an upper-bound to doses from a non-
3 specific radioanalysis."

4 And NIOSH responds, "We are in the
5 process of establishing appropriate methods to
6 assess the sources of uncertainty identified
7 in Section 6.3. Response to this comment is
8 forthcoming."

9 That puts it in abeyance, awaiting
10 response.

11 MR. MARSCHKE: In abeyance -- in
12 progress?

13 DR. MAURO: Because we don't
14 really know what the answer -- if they gave
15 the answer, and we'd agree with it, I would
16 say it would be in abeyance. But we don't
17 really --

18 CHAIR MUNN: So we're in process.

19 DR. MAURO: We are in process,
20 yes.

21 MEMBER ZIEMER: Right.

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1 MR. MARSCHKE: This was 16?

2 DR. MAURO: Yes.

3 CHAIR MUNN: That's 16.

4 Seventeen, a finding, urinalysis.

5 "SC&A believes that NIOSH did not
6 present sufficient data to justify the
7 derivations of values given for the beta
8 yield, and counting adjustment factors in
9 table F1. NIOSH should demonstrate using
10 measurement information that those factors are
11 acceptable and the best ones to be used."

12 NIOSH responds, "The adjustment
13 factors are applied as multipliers. So having
14 factors that are too large is favorable to the
15 claimant, as long as this is done consistently
16 across the nuclide mix. (Since everything is
17 on a normalized basis.) Further, if most of
18 the nuclides in the mix have similar beta
19 energies, then the choice of the adjustment
20 factor becomes largely arbitrary."

21 "We evaluated the importance of

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1 the values selected for the beta adjustment
2 factors by using beta efficiency data for a
3 Protean gas flow counter to assign adjustment
4 factors to each nuclide. This evaluation
5 showed trivial differences for the beta
6 activity fractions for cesium-137 and
7 strontium-90 given in table 7-1. Thus the
8 activity fractions for the indicator nuclides
9 are not highly dependent on the choice of the
10 beta adjustment factors. This is due to the
11 similar beta energies from the nuclides in the
12 mix.

13 "The same logic can be applied to
14 the gamma calculation. The data in table 7-2
15 are equally unaffected by the choice of the
16 beta adjustment factor given in the same
17 chemical yield for the elements carried
18 through the mixed fission product separation
19 method."

20 "Further, since the activity in
21 the processed samples is nearly all

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1 strontium-89 plus strontium-90, the choice of
2 adjustment factor becomes even less of an
3 issue. The factor would only have a
4 significant impact if it differed
5 significantly for the two."

6 Does SC&A have a response to this?

7 DR. MAURO: This may sound
8 strange, but I think I understand the answer.

9 (Laughter.)

10 DR. BURNS: From both of them at
11 once.

12 CHAIR MUNN: That sounds good to
13 me.

14 DR. MAURO: And I sort of
15 understand that this is driven by
16 strontium-90, and as long as there isn't a big
17 -- if that wasn't the case, and there were
18 other beta-emitters that needed a
19 substantially different adjustment factor,
20 yes, there would be a problem. But that's not
21 the case. I mean, in principle, I understand

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1 what they are saying, and I agree, but I'm
2 reaching.

3 MR. MARSCHKE: So we want Joyce or
4 Steve to look at this?

5 DR. MAURO: Yes, I would feel a
6 little better.

7 CHAIR MUNN: Do we hold it for
8 Steve?

9 MR. MARSCHKE: Let me just add
10 that Steve has only had these for a few days.

11 DR. MAURO: Well, Joyce is going
12 to be on the line, isn't she?

13 MR. MARSCHKE: No.

14 DR. MAURO: No? Okay.

15 MR. MARSCHKE: Joyce is at the
16 ICRP meeting. She's not available.

17 And Steve, when he gets here, he
18 may or may not be able to solve any of these.

19 DR. MAURO: Yes.

20 MR. MARSCHKE: I mean he may just
21 want more time to look at them himself.

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1 DR. MAURO: Yes.

2 MEMBER ZIEMER: This is a bioassay
3 issue rather than --

4 DR. MAURO: Yes, that's a Joyce
5 issue.

6 MEMBER ZIEMER: Yes.

7 DR. MAURO: Yes. The nuclear
8 engineering side of things maybe, but this is
9 clearly a Joyce question.

10 MR. MARSCHKE: I think this one,
11 you know, we can just leave it as open, but it
12 probably won't be, when Steve gets here, it
13 probably will still be open.

14 DR. MAURO: Yes.

15 MR. HINNEFELD: Well, I would like
16 to move it to in progress.

17 DR. MAURO: Yes, that's the way it
18 should be.

19 MR. HINNEFELD: Because it has
20 been here.

21 DR. MAURO: That's the way it

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1 should be. Oh, was it --

2 MR. HINNEFELD: It was open.

3 MR. MARSCHKE: It is open now.

4 DR. MAURO: So now it is in
5 progress, absolutely. Absolutely.

6 MR. MARSCHKE: And, Wanda, this is
7 in progress?

8 CHAIR MUNN: Yes.

9 MR. KATZ: We can do that after
10 Steve, though. At the end of the day, we can
11 change these all to in progress.

12 MEMBER ZIEMER: But if Steve isn't
13 able to answer that, it sounds like we need a
14 response --

15 DR. MAURO: Yes.

16 MEMBER ZIEMER: -- from NIOSH. Or
17 from SC&A.

18 DR. MAURO: No, no, from SC&A.
19 Yes. Yes, why this answer is good or not.

20 CHAIR MUNN: We'll see.

21 Item 18, observation, urinalysis.

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1 "SC&A verified the intake
2 retention factor, IRF, values of table F1 with
3 a different software package than IMBA. The
4 only nuclide with a difference is iodine, for
5 which the IRF is 23 percent higher than the
6 one derived by SC&A."

7 NIOSH responds, "SC&A did not
8 document the software or assumptions used to
9 determine its IRF value for iodine. The value
10 used in OTIB-54 reflects type F vapor. The 23
11 percent difference for iodine has no effect on
12 the indicator nuclide activity fractions given
13 in table 7-1 and 7-2, as iodines were not
14 considered through those calculations. This
15 is favorable to the claimant since including
16 the iodines would decrease the activity
17 fractions for the indicator nuclides with a
18 shorter decay time. It has no effect for the
19 longer decay times since the iodines have
20 decayed away."

21 DR. MAURO: I will speak. I feel

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1 comfortable with this one.

2 First of all, you're using IMBA,
3 we checked it using some other software
4 package. IMBA has been validated and proved,
5 even though Joyce clearly knows there's more
6 to the story because ICRP is always
7 researching issues. And the conclusion is,
8 notwithstanding all that, the approach used is
9 claimant-favorable. If anything, it is an
10 error on the high side. I think we close
11 this.

12 CHAIR MUNN: Is there any
13 objection from anyone on the telephone to
14 closing this?

15 Steve, would you --

16 MEMBER LEMEN: No.

17 CHAIR MUNN: Steve, would you
18 please say, "SC&A agrees. The Subcommittee --
19 closure."

20 MR. MARSCHKE: Okay. I will.

21 CHAIR MUNN: Next, item No. 19 --

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1 this is finding, urinalysis.

2 "SC&A agrees with NIOSH on the way
3 the percentage of each radionuclide's
4 contribution to beta and/or gamma urine counts
5 should be calculated. SC&A does not agree,
6 however, that results should be averaged for
7 the four reactors in order to obtain the data
8 in tables G1 to G4. For some radionuclides,
9 such as strontium-90, the relative exposure
10 activity fractions given in table D1 may
11 differ by an order of magnitude among reactor
12 types."

13 The response from NIOSH, "The
14 Attachment G data are of an interim nature and
15 serve as the basis for the tables in Section
16 7. The issue of whether or not to average
17 across the four reactors is discussed under
18 comment 14."

19 DR. MAURO: When we resolve 14,
20 this will be resolved. In other words, there
21 is complete overlap here.

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1 DR. ULSH: Well, obviously, it's
2 going to be wait for Steve, right?

3 CHAIR MUNN: This is a wait for
4 Steve.

5 DR. MAURO: This is still a wait
6 for Steve, but, I mean, in a way, once we take
7 care of that, we will take care of this.

8 CHAIR MUNN: More of the same.

9 DR. MAURO: Yes.

10 DR. ULSH: Is that one of those
11 situations that Marschke mentioned earlier --
12 addressed in or --

13 MR. KATZ: Yes. It is similar to
14 15.

15 MR. MARSCHKE: We could change the
16 status of this one right now to "addressed in
17 14," if we wanted to.

18 CHAIR MUNN: Well, we haven't
19 changed the other --

20 MR. MARSCHKE: We haven't changed
21 the other one, exactly.

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1 CHAIR MUNN: We are just waiting
2 for Steve.

3 MR. MARSCHKE: Okay.

4 CHAIR MUNN: But we may do that
5 later this afternoon after we've had that
6 discussion with him.

7 Now we are on item No. 20,
8 finding, urinalysis.

9 "SC&A has not reproduced" -- did I
10 get the wrong one? Did we just do this? No.

11 "SC&A could not reproduce all the
12 percentages listed in tables G1 to G4
13 following the procedure described by NIOSH,
14 with the values listed for strontium-90
15 presenting the greatest difference. On the
16 other hand, table 7-1 values for strontium-90
17 were reproduced using SC&A-derived values, but
18 not using table G2 values."

19 NIOSH responds, "We, too, noted
20 the issue with the Attachment G data, and the
21 revision is in progress to correct it. This

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1 will also affect the values in table 7-2. In
2 addition, some of the IRF values used will
3 also be revised."

4 Can we change this to in progress?

5 MR. MARSCHKE: I was going to
6 change it -- what about in abeyance?

7 MEMBER ZIEMER: Yes, they have
8 agreed to change it.

9 DR. MAURO: They have agreed to
10 change it, but we would like to see that
11 change. So, in other words, I think it is
12 more in progress than in abeyance. It's not
13 that they gave the answer.

14 CHAIR MUNN: Yes. That's why I
15 say in progress.

16 MR. MARSCHKE: In progress?

17 CHAIR MUNN: In progress.

18 Okay on the phone?

19 (No response.)

20 All right, I'll take that as yes.

21 MEMBER LEMEN: Yes.

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1 CHAIR MUNN: Item No. 21,
2 observation, urinalysis.

3 "The radionuclides listed in
4 tables G1 to G4 are the ones taken from table
5 D1, and the simplifications introduced in
6 tables E1 and E2 were not used."

7 NIOSH response, "That is correct.
8 The simplified source terms given in
9 Attachment E are the basis for tables 7-3 and
10 7-4. Attachment G and tables 7-1 and 7-2 are
11 based on the nuclide mix given in table D1."

12 MR. HINNEFELD: Is there anything
13 wrong in the finding?

14 CHAIR MUNN: I don't see that
15 there is.

16 MR. HINNEFELD: Just making a
17 comment --

18 CHAIR MUNN: It was an observation
19 --

20 DR. ULSH: Our response seemed to
21 be, yes, there was.

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1 (Laughter.)

2 CHAIR MUNN: Yes, it was an
3 observation. It didn't ask for action. And
4 the answer is it doesn't look like anything is
5 being asked for other than agreement.

6 MEMBER ZIEMER: I'm trying to
7 understand the implication of saying that the
8 simplification introduced in the tables were
9 not used. Is this Joyce's comment?

10 DR. MAURO: Yes, I can't speak to
11 this.

12 MEMBER ZIEMER: I guess I would
13 like to understand what her point is, why did
14 she raise that issue.

15 DR. MAURO: I don't know. I can't
16 speak to it.

17 MR. HINNEFELD: Well, on the face
18 of it, there are quite a few more
19 radionuclides in the E table than there are --
20 so that accounts for the simplification. The
21 simplification is that -- and that may be

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1 where radionuclides contributing less than one
2 percent or something like that. We had heard
3 about that earlier. I don't know if that was
4 just some -- but I haven't tracked this
5 document well enough to know where we are. I
6 mean one of the simplifications is D has more
7 radionuclides than E.

8 CHAIR MUNN: Well, since this is
9 an observation, it does not appear to have
10 been a major issue. It's more of a
11 observation.

12 DR. MAURO: The very fact that we
13 read this and we don't quite understand the
14 point -- so maybe what Joyce was asking for is
15 a little clarification between, I guess, the G
16 tables and table D1, and why these differences
17 exist. There doesn't seem to be any criticism
18 of it. It just means -- just to explain a
19 little better what this is all about.

20 And just from looking at this, I
21 don't understand what's going on.

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1 DR. ULSH: You assign it --
2 whatever status it is, where we say it's still
3 open, but it's in SC&A's court to respond now?

4 DR. MAURO: Yes, we'll take it
5 from here. We may have to explain further
6 what the nature of our concerns are, if there
7 is a concern. It may just be requesting
8 clarification.

9 MR. KATZ: So this is another
10 Steve.

11 DR. MAURO: Okay.

12 CHAIR MUNN: All right, we'll wait
13 for Steve.

14 The next item numbered --

15 MEMBER ZIEMER: Well, is this
16 going to be a Steve one anyway?

17 CHAIR MUNN: Or is it going to be
18 a Joyce?

19 MEMBER ZIEMER: I think it would.

20 DR. MAURO: Well, I think
21 everything -- most of these questions are

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1 probably going to go back to Joyce.

2 MEMBER ZIEMER: This is
3 urinalysis, I'm not sure we can do this this
4 afternoon. I'm thinking that maybe, to my
5 mind, we need a response from SC&A to clarify
6 --

7 DR. MAURO: What's up. Yes.

8 MEMBER ZIEMER: -- whether or not
9 the observation was intended to raise an issue
10 or not.

11 DR. MAURO: I agree with you.
12 Yes.

13 MR. MARSCHKE: If we're waiting
14 for Steve, Paul, he might just have some
15 insight.

16 MEMBER ZIEMER: Maybe he would
17 know, sure.

18 MR. MARSCHKE: Not necessarily
19 that he's going to -- one way or the other,
20 but --

21 DR. MAURO: The ball's in SC&A's

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1 court on this --

2 MEMBER ZIEMER: Right, right.

3 MR. MARSCHKE: He may give some
4 insight.

5 DR. MAURO: -- to clear up exactly
6 what are we talking about here now.

7 MEMBER ZIEMER: Yes.

8 CHAIR MUNN: If he has some
9 information for us this afternoon, fine.
10 Otherwise, we will call it in process, ask for
11 more.

12 Item No. 22, finding, urinalysis.

13 "Looking at tables G1 to G4, SC&A
14 does not agree with NIOSH that the trends are
15 similar for all solubility categories. SC&A
16 does not agree with NIOSH averaging the
17 results for each solubility category. SC&A
18 notes that the most conservative approach
19 (most claimant-favorable) would be to use the
20 percentages for insoluble radionuclides in
21 tables G2 and G4 instead of averaging. As the

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1 two indicator radionuclides are type F, their
2 concentrations are maximized and considered
3 the most insoluble form of the other
4 radionuclides."

5 Comment from -- response from
6 NIOSH, "OTIB-54 will be revised to use just
7 the most insoluble forms, as recommended."

8 Does SC&A accept that?

9 DR. MAURO: Yes, I like that
10 answer. I think it's in abeyance.

11 CHAIR MUNN: Accept that? It's in
12 process.

13 DR. ULSH: It's in abeyance.

14 DR. MAURO: I say in abeyance
15 because they gave the answer.

16 MR. HINNEFELD: We said we're
17 going to change it.

18 DR. MAURO: And it's the right --
19 in other words --

20 CHAIR MUNN: In abeyance.
21 Absolutely. Sorry. That's 22.

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1 No. 23, finding, urinalysis.

2 "SC&A notes that the
3 oversimplification results creates reference
4 numbers that do not relate with the real
5 exposure of the workers. As a result, tables
6 7-1 and 7-2, although perhaps conservative,
7 cannot really be used as representatives of
8 the workers' exposure."

9 NIOSH response, "OTIB-54 was never
10 intended to provide anything more than a
11 favorable overestimate. The document states
12 doses determined by OTIB-54 should be assigned
13 as upper bounds."

14 DR. ULSH: So basically agree it's
15 not representative, but what we're saying is
16 that wasn't the purpose of it in the first
17 place.

18 DR. MAURO: Is that the table we
19 were looking at before?

20 DR. ULSH: I don't know.

21 CHAIR MUNN: No. No. Different

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1 tables.

2 DR. ULSH: Maybe I'm reading too
3 much into SC&A's comment. It looked like in
4 the comment you agreed that it's conservative.

5 Am I reading too much into that?

6 MR. HINNEFELD: Well, they say it
7 may be. I don't know if they agree --

8 CHAIR MUNN: "Although perhaps
9 conservative --

10 DR. ULSH: Perhaps?

11 DR. MAURO: Okay.

12 CHAIR MUNN: -- "cannot really be
13 used as representatives of the workers'
14 exposure."

15 DR. MAURO: Interesting situation.
16 There is a lookup table that doesn't really
17 represent anything in particular by way of
18 reality, but it represents a surrogate --

19 CHAIR MUNN: Overexposure.

20 DR. MAURO: -- which is an
21 overexposure. Now in situations like this in

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1 the past, we've run into circumstances where,
2 when you're doing a plausible upper bound for
3 the purpose of granting or denial, that's
4 fine. But if you are assigning a dose which
5 is not plausible, but certainly is upper, then
6 it can only be used for denial.

7 So the question becomes have you
8 created a table that is not plausible, and
9 therefore -- and granting people their claim
10 using a methodology that is not plausible. We
11 have run into this with OTIB-4. Remember
12 that? That's the classic one where that
13 happened.

14 I guess my only concern is that
15 given that it is true that this table is, in
16 fact, bounding, as long as it represents --
17 but we also all agree that it really doesn't
18 exist in reality, that mix, you know. Is it
19 appropriate to use this for the sake of
20 granting? Denial, I understand, but granting,
21 and that's really a tough question.

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1 Do you see where I am on that?

2 MR. KATZ: You can always do that
3 if you lack better information. Then it's
4 fine for granting. So that's the limiting
5 factor actually.

6 You can use simplified
7 information, what have you, when you don't
8 have better information for granting a DR.

9 DR. MAURO: Well, as long as it's
10 plausible. In other words, if you have a
11 construct that really cannot exist, and it
12 assigns a dose that is unrealistically high
13 and could not occur in reality, and then you
14 compensate, I don't know. That's a
15 regulatory, I guess, interpretation of what
16 the intent is of the rule, but it seems to me
17 kind of strange that you would do that.

18 MR. KATZ: The rule says that you
19 can do a maximizing assumption in a case where
20 you lack better information, where there's no
21 more research to do and there's no way to put

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1 a better number on it.

2 MEMBER ZIEMER: Well, I think the
3 question here is are you using assumptions --
4 I mean there are assumptions and there are
5 assumptions. A reasonable assumption I think
6 is what you're saying.

7 DR. MAURO: When you're confronted
8 with a circumstance where you certainly do not
9 want to end up underestimating this person's
10 dose, and you have -- and you really don't --
11 but you do know it can't be higher than this,
12 but it is plausible it could have been as high
13 as that, that's the appropriate protocol. And
14 that's what I interpret maximizing to be.

15 Now to pick a number -- and we've
16 been through this before -- that it is not
17 plausible to be that high, a dust load, just
18 couldn't happen.

19 MEMBER ZIEMER: That you couldn't
20 breath in or something.

21 DR. MAURO: Now one could say that

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1 certainly is maximizing, but then I think it
2 does challenge other aspects of the rule.

3 MR. HINNEFELD: Well, I think
4 we're putting a pretty fine point on not
5 plausible here because the not plausible was
6 sort of like -- the idea when it was written
7 was you can't say, well, we know the external
8 doses assigned here were less than 500 rem
9 because nobody died from acute radiation
10 syndrome. So we'll bound it at 500 rem.

11 That's kind of what was thought
12 about, is to avoid clearly a hypothetical.
13 Well, we know that they didn't get 500 rem
14 because nobody died.

15 DR. MAURO: Well, you know, how
16 would I deal with this circumstance? I have
17 got a guy that has got a gross beta-gamma
18 reading --

19 MR. HINNEFELD: Well, I think look
20 at the dose numbers. I mean the dose numbers
21 that this thing has generated from bioassay I

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1 don't think are going to be anything like out
2 of this world. You know, they're going to be
3 sort of realistic sort of dose numbers that
4 you would get from an intake of mixed fission
5 products.

6 I mean I'd look at the actual
7 number as opposed to start worrying about,
8 well, since we have a composite, we know that
9 didn't exist. Is that an implausible thing?
10 I think you have to look at the dose and the
11 magnitude of the dose before you start talking
12 about that.

13 DR. MAURO: But you understand
14 what I'm thinking about?

15 MR. HINNEFELD: Yes. Well, I
16 understand, but I just feel antsy at this
17 implausibility and taking it too many places.
18 To me, it's a magnitude sort of thing -- the
19 doses -- we know it wasn't that high because
20 nobody died, so --

21 DR. MAURO: I mean, in theory, if

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1 one wants to look for a shortcut when you lack
2 information, I've got gross beta-gamma; I've
3 got a person with a particular type of cancer;
4 I'm going to assume all strontium-90. We've
5 done that in the past, way back -- listen, we
6 know that would be the worst-case scenario,
7 assuming if it's lung cancer. If it was some
8 other, you know, if it was some soft tissue
9 cancer, it might be cesium.

10 MR. HINNEFELD: Yes.

11 DR. MAURO: In other words, we
12 know those are the radionuclides that find
13 their way in varying degrees in coolant, and
14 they're going to constitute a very important
15 contributor to the dose. So you should look
16 at all this.

17 MR. MARSCHKE: But you can make
18 the argument that that's not a plausible
19 comment -- that's not a plausible assumption
20 either because you know that it's not going to
21 be all cesium-137.

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1 MR. KATZ: Let me give you another
2 example that's written into the reg. You can
3 choose the most claimant-favorable solubility
4 factor when you don't know anything. There
5 may be circumstances where it is not plausible
6 that it would be entirely that solubility
7 factor, but that's written in the reg as
8 absolutely kosher.

9 So I think what Stu is trying to
10 say is taking plausibility to every nitpicking
11 detail is taking it beyond sort of the
12 intended parameters.

13 I mean the plausibility, where it
14 is discussed, is discussed about you need to
15 only consider plausible circumstances of
16 exposure. You don't all of a sudden put them
17 in an implausible exposure scenario and say,
18 what if that happens?

19 MR. HINNEFELD: Correct.

20 DR. MAURO: We needed to have this
21 conversation.

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1 MR. MARSCHKE: So back to issue

2 23?

3 DR. ULSH: What's the status of

4 23?

5 CHAIR MUNN: Does SC&A accept that
6 response?

7 MR. HINNEFELD: I think there
8 might be more discussion here.

9 DR. MAURO: I will be the first to
10 admit this issue of plausibility and trying to
11 navigate your way through the regulations,
12 find a way to deal with the fact that we lack
13 complete information, and we always lack
14 complete information, and we have to make
15 certain assumptions to simplify the problem,
16 and in so doing, you, by definition, are
17 creating circumstances which may not
18 necessarily be plausible.

19 Does that mean you have done
20 anything inappropriate? I would be the first
21 to admit no. But it's almost a judgment. And

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1 you know, if you go back to a judgment and
2 this is reasonable, this is almost a personal
3 judgment, unfortunately.

4 CHAIR MUNN: This is the stickiest
5 of the wickets that we have to deal with
6 without a doubt.

7 DR. MAURO: The stickiest.

8 DR. ULSH: Well, does the
9 Subcommittee need more input from NIOSH or
10 SC&A to opine on this question?

11 CHAIR MUNN: I don't think the
12 Subcommittee needs any more input until SC&A
13 has come to a conclusion with respect to this
14 response. I don't know that we, as a
15 Subcommittee, can do anything without an
16 agreement that this approach is acceptable,
17 conservative, plausible.

18 DR. MAURO: Plausible
19 circumstances puts us in a difficult spot. I
20 would be much more comfortable saying, listen,
21 these are the four mixes of radionuclides that

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1 we believe represent the range of reactor
2 mixes that all the different workers might
3 have experienced.

4 Coming up with a construct that
5 doesn't really exist in reality brings us to
6 this conversation, which I think is a
7 difficult conversation to have.

8 CHAIR MUNN: It is.

9 MR. MARSCHKE: John?

10 DR. MAURO: Yes.

11 MR. MARSCHKE: We're not talking -
12 - four mixes -- we're not -- this is table 7-1
13 and 7-2.

14 DR. MAURO: Okay, yes. I guess
15 I'm --

16 MR. MARSCHKE: These are the two
17 tables that this particular issue is
18 addressing.

19 DR. MAURO: Okay.

20 MR. MARSCHKE: Table 7-1 and 7-2
21 are conservative, cannot be really used as

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1 representative.

2 DR. MAURO: Yes.

3 MR. MARSCHKE: So we're not
4 talking about those tables, those previous
5 tables.

6 DR. MAURO: Okay. Good.

7 MR. MARSCHKE: This is two
8 different tables.

9 DR. MAURO: What brings us here as
10 opposed to the other tables then?

11 MR. MARSCHKE: I don't know --

12 DR. MAURO: All right.

13 MR. MARSCHKE: -- OTIB-54.

14 DR. MAURO: Okay.

15 MR. MARSCHKE: We have to look
16 into the details of --

17 DR. MAURO: I'm overreaching.
18 Let's wait until Steve gets back, so we get
19 context. Okay.

20 MR. KATZ: So we want this one for
21 Steve, 23?

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1 MR. MARSCHKE: Steve or Joyce or -
2 - yes.

3 MR. KATZ: Discuss with Steve.

4 MEMBER ZIEMER: Ultimately, it
5 might be Joyce, but Steve can weigh in on it.

6 DR. MAURO: But I'm sorry, but the
7 philosophy is the same. If you are going to
8 try to assign something to someone with lack
9 of information, try to assign something that
10 represents a plausible circumstance that could
11 have existed and would be bounding as applied
12 to this worker.

13 MEMBER ZIEMER: But we don't know
14 whether she is claiming it was not plausible.
15 She's saying it's not representative. So I
16 think we need some clarity on that. I mean,
17 yes, if it's beyond the realm of you can't
18 conceive of some concentration that could
19 possibly arise -- you know, I'm not sure we
20 know the parameters here.

21 CHAIR MUNN: You know, there's a

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1 big difference in representative and
2 plausible.

3 MEMBER ZIEMER: Yes.

4 CHAIR MUNN: A big difference.

5 All right, item No. 24, finding,
6 air/surface contamination.

7 "SC&A notes that the same
8 oversimplifications as discussed in comment 23
9 is creating reference numbers in tables 7-4
10 that do not relate to the real exposure of the
11 workers."

12 This sounds very similar to the
13 preceding one.

14 The NIOSH response, "Same as
15 comment 23, OTIB-54 was never intended to
16 provide anything more than a favorable
17 overestimate. The document states doses
18 determined by way of OTIB-54 should be
19 assigned as upper bounds."

20 So do we leave that also on --

21 MEMBER ZIEMER: The same thing.

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1 CHAIR MUNN: -- because it will be
2 the same, essentially the same concern to be
3 addressed?

4 I know it is lunchtime, but we are
5 only two strokes away of getting through this.

6 Twenty-five is finding summary.

7 "SC&A finds that the urine
8 activity fraction used for the indicator
9 radionuclides is somewhat arbitrary and,
10 consequently, intake and dose calculations are
11 somewhat arbitrary as well. The
12 overestimation of doses due to simplification
13 of the source term is not a valid reason to
14 use excretion rates of the indicator
15 radionuclide and intake values of the
16 dosimetrically significant radionuclides that
17 do not relate to the real intakes and
18 excretion rates.

19 "In addition, NIOSH does not show
20 how much of the dose might be underestimated
21 due to the scenario that was assumed, the

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1 reactor averaging, the solubility averaging,
2 and by all other assumptions taken to derive
3 tables 7-1 and 7-2."

4 And the NIOSH response is, "See
5 comments 16, 23, and 26."

6 We haven't seen 26 yet, but we
7 know 23 and 24 are the same. So essentially,
8 NIOSH's response is the same.

9 We'll add 25 to this list and go
10 on to the final finding for the moment -- for
11 the morning, finding summary.

12 "SC&A questions the validity of
13 the guidance provided in ORAUT OTIB-54 on the
14 assignment of radionuclide-specific intakes of
15 mixed fission and activation products when air
16 sampling or urinalysis data associated with
17 reactors or reactor fuels are available only
18 as gross or total beta activity or gross or
19 total gamma activity.

20 "The methods described in the OTIB
21 will provide intakes and doses not correlated

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1 with the real ones. The differences between
2 the intakes provided through the use of the
3 document and the real ones are unknown and
4 depend heavily on the scenario (periods of
5 fuel irradiation and decay), the reactor type,
6 and the detection methods."

7 NIOSH responds, "Because of the
8 large number of nuclides potentially present
9 in the fission and activation product mixture,
10 it's not feasible to account for all
11 possibilities. The approach was designed as
12 an upper bound method for approximating the
13 dose, which is the quantity of interest from
14 mixed fission and activation products.

15 "Doses are input to IREP by
16 radiation type rather than specific
17 radionuclides. So an accurate accounting of
18 the radionuclides is not important if the dose
19 for the mixture can be closely approximated.

20 "All of the nuclides in the
21 mixture fall into the categories of photons E

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1 greater than 250 keV and electrons E greater
2 than 15 keV, both of which are the referenced
3 radiations in IREP and have a point value
4 radiation effectiveness factor, REF, of unity.

5 So the total doses can be assigned as a
6 single value per year. See also comments 16
7 and 23."

8 Is this a Steve one?

9 DR. MAURO: Yes. We have
10 basically entered into a realm of
11 constructs --

12 CHAIR MUNN: Yes.

13 DR. MAURO: -- for the purpose of
14 simplifying a very complicated analysis.

15 CHAIR MUNN: Right.

16 DR. MAURO: And I can see the
17 virtue of trying to do that. I can also see
18 the dilemma you find yourself in. So I
19 understand this, and I don't know how much we
20 can -- you know, the reality is what we have
21 as a circumstance where I'm sure that the

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1 construct is reasonable, if not bounding.
2 Does it exist in reality? No. It's a
3 construct that crosses different domains for
4 the intention of simplifying the process.

5 You know, I'm saying this for like
6 five of the things we're talking about now.
7 In some cases, it's clear that -- it might be
8 shown to be clear that it is bounding. In
9 this case, it's not apparent to Joyce that
10 it's necessarily bounding, when taking all of
11 the different facets of the problem,
12 everything from mix to solubility type, to the
13 amount of time it's operated, you know, burnup
14 time. You know, it's not apparent that
15 necessarily your default has, in fact,
16 captured the bounding circumstance.

17 So it's two levels here. The
18 simpler level is did your default really
19 capture the bounding scenario, given the lack
20 of information. The second one is, even if
21 your default does capture the bounding

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1 scenario, if it doesn't really exist in
2 reality, is that something that is appropriate
3 to do. Your argument will be yes, as long as
4 you know it's bounding, that's fine. And that
5 becomes a regulatory interpretation.

6 So that's the place we're in right
7 now. And we're going to have to -- SC&A is
8 going to have to struggle with this as best we
9 can.

10 CHAIR MUNN: All right, then, for
11 the moment, we will leave this as one of the
12 11 that we will dump on Steve when he arrives.

13 (Laughter.)

14 DR. MAURO: And Steve is going to
15 love this.

16 (Laughter.)

17 CHAIR MUNN: Oh, yes, I know. I
18 know he has no idea this is going to be --
19 is that -- unless someone has objection, I
20 would like for us to recess for lunch.

21 Any objections?

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1 MEMBER ZIEMER: No.

2 CHAIR MUNN: Otherwise, let's take
3 until 1:15, 1:20.

4 MR. KATZ: Thanks on the phone,
5 everybody. 1:20.

6 (Whereupon, the above-entitled
7 matter went off the record at 12:19 p.m. and
8 went back on the record at 1:28 p.m.)

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1 information up on the board, so that Steve
2 Ostrow can take a look at it.

3 The first item that we postponed
4 for him to look at was Item 7. Item 7.

5 MR. MARSCHKE: There it is.

6 CHAIR MUNN: And I don't know,
7 Steve Ostrow, you don't have your own laptop
8 there, do you?

9 DR. OSTROW: No, but I can read it
10 off the screen at this point.

11 CHAIR MUNN: Okay, fine.

12 Item 7. And then -- I'll tell you
13 what. Instead of our holding up the whole
14 process while you do this, perhaps you might
15 get over by Marschke for a little bit and read
16 through those. I will give you the numbers of
17 the items that we have --

18 MR. KATZ: Well, really, I think
19 you need to let Steve know what the
20 conversation was around the item for Steve to
21 sort of be brought up-to-speed. If he just

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1 looks at these on the screen, he won't know
2 what's happened in here.

3 CHAIR MUNN: All right, if you
4 would rather.

5 MR. KATZ: I'm just saying, if you
6 want --

7 DR. OSTROW: Yes, that would
8 probably be a good idea.

9 MR. KATZ: If you want to get
10 Steve up-to-speed so he can in some of these
11 cases either make a contribution, in others
12 say that that situation looks to be an issue,
13 whatever it might be.

14 CHAIR MUNN: Okay. We'll start
15 with Item No. 7. The finding there, Steve,
16 has to do with fuel dimensions, compositions,
17 and burnup values. The OTIB was asked by our
18 contractor to provide some justification for
19 the assumption that the data did not change
20 significantly. And you can read the NIOSH
21 response there about the single pass reactors.

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1 DR. OSTROW: Well, Wanda, you
2 know, I really can't make comment on this as I
3 think about it a lot. You know, I can't make
4 offhand comments on this.

5 CHAIR MUNN: Okay. That's true.

6 Does anyone want to enrich the
7 discussion any for Steve before we show him
8 the next one?

9 DR. ULSH: Well, what status are
10 we going to assign to this? Is that an in
11 progress where it's in SC&A's court to
12 consider and respond to that or --

13 CHAIR MUNN: It is in progress
14 when we are awaiting some action.

15 MR. KATZ: John, could you remind
16 Steve of what -- you thought of this --

17 DR. MAURO: Yes. After going
18 through the ones that are in progress now,
19 because we really -- although it looks like
20 about half of them we were able to put to bed,
21 either close or put them in abeyance.

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1 CHAIR MUNN: Yes.

2 DR. MAURO: But the other half we
3 couldn't. And of the half that we -- out of
4 the what? What was it? How many, 26?

5 CHAIR MUNN: We had 26 --

6 MR. MARSCHKE: Eleven that are
7 still basically open.

8 DR. MAURO: Okay. So we had 11
9 out of 26 are still alive, which is good, a
10 lot of progress.

11 Out of the 11 that are still at
12 issue, maybe half of them are what I would
13 call more biochemistry, radiochemistry,
14 internal dosimetry questions, which I think
15 really Joyce needs to look at. I know no one
16 at the time this morning felt comfortable in
17 being able to say whether or not it has been
18 resolved.

19 And the other half are more
20 nuclear engineering. And we did try our best
21 here to explore whether it seems like it was a

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1 good answer or not. But, at the same time, we
2 felt that we didn't want to rush to any
3 judgment.

4 I know, Steve, you may also want
5 to weigh-in on the nuclear engineering issues,
6 such as the very first one we just looked at,
7 No. 7. But if you're not comfortable, you
8 know, you would like to give it a chance to
9 look at it, maybe we just say, okay, Steve and
10 Joyce and us could get together after we go
11 home and take those on.

12 DR. OSTROW: I mean I made all the
13 nuclear engineering comments on this.

14 DR. MAURO: Okay.

15 DR. OSTROW: But I can't really
16 answer them thoughtfully offhand.

17 CHAIR MUNN: After No. 7, we have
18 No. 9.

19 MR. HINNEFELD: So No. 7 is going
20 to in progress? Is that it?

21 CHAIR MUNN: Yes.

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1 Which had to do with the TRIGA
2 reactors and whether or not the use of 20
3 percent enrichment in this particular document
4 was appropriate for the purposes stated. And
5 there is, as you can see, a NIOSH response to
6 that.

7 The next one that we kept in
8 abeyance, I mean kept in process for you, was
9 Nos. 14, 15, and 19. Almost all have --

10 MR. KATZ: Fourteen, 15, and 17.

11 CHAIR MUNN: Fourteen, 15, 17, and
12 19, but 14, 15, and 19 were pretty closely
13 related.

14 MR. KATZ: Yes.

15 CHAIR MUNN: They had to do with
16 reactor source terms and how four reactor
17 types had been chosen to produce a default
18 source term. He has a NIOSH answer to one of
19 them -- to all of them, actually.

20 Fourteen is the first of them.

21 The second of them was concerning

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1 the fact that some radionuclides weren't
2 released in significant quantities when you
3 are reviewing those four reactor types. NIOSH
4 had a response to that as well.

5 And Item 17 had to do with
6 urinalyses, questioning NIOSH's data
7 sufficiency for the derivation of the values
8 that they had -- that was used. There's a
9 significant NIOSH response to that one.

10 And then Item No. 19 was, again,
11 urinalysis issues with respect to the
12 percentage of each radionuclide's contribution
13 to both beta and gamma urine counts. And they
14 all seemed to bear on the same general
15 assumptions in those tables.

16 Item 21, also with respect to
17 urinalysis. We looked at this, tables G-1 and
18 G-4, and the simplifications that were used.
19 That was an observation, but it was difficult
20 for those of us here to come to some real
21 understanding of what the actual issue was

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1 with No. 21.

2 MR. KATZ: Well, Steve may be able
3 to clarify that.

4 CHAIR MUNN: Oh, okay. That might
5 be --

6 DR. OSTROW: Okay, which one is
7 this now?

8 CHAIR MUNN: Item 21. The
9 finding, the SC&A finding said, observation
10 urinalysis, that "radionuclides listed in
11 tables G1 to G4 are the ones taken from table
12 D1, and the simplifications introduced in
13 tables E1 and E2 were not used."

14 The NIOSH response was, "That is
15 correct. The simplified source terms given in
16 Attachment E are the basis for tables 7-3 and
17 7-4. Attachment G and tables 7-1 and 7-2 are
18 based on the nuclide mix given in table D1."

19 We were not sure what the real
20 concern was here, if there was concern, and
21 whether that concern had been answered

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1 properly or not to the satisfaction of anyone.

2 DR. OSTROW: You have to ask Joyce
3 about this one.

4 CHAIR MUNN: Very good.

5 The last ones are also fairly
6 well-associated, and I believe most of them
7 are urinalysis and surface contamination.

8 No. 23 was a finding of
9 urinalysis. "SC&A notes the
10 oversimplification of results creates
11 reference numbers that do not relate with the
12 real exposure of the workers. As a result,
13 tables 7-1 and 7-2, although perhaps
14 conservative, cannot really be used as
15 representative of the workers' exposure."

16 And NIOSH's response said, "OTIB
17 was never intended to provide anything more
18 than a favorable overestimate."

19 So this is -- our discussion
20 focused around the fact that this is our
21 continually-recurring problem of whether or

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1 not the overestimates are plausible, and that
2 continues through to some degree in No. 24,
3 which was the finding of air and surface
4 contamination.

5 "SC&A notes the same
6 oversimplifications as discussed in the
7 previous comment was creating reference
8 numbers to table 7-4 that do not relate to
9 real exposure of workers."

10 And the response of NIOSH was the
11 same as the previous one.

12 No. 25 has to do, again, with
13 urinalyses, and the finding summary was, "SC&A
14 finds that the urine activity fraction used
15 for the indicator radionuclide is somewhat
16 arbitrary, and, consequently, intake and dose
17 calculations are somewhat arbitrary as well.
18 The overestimation of doses due to
19 simplification of the source term is not a
20 valid reason to use the excretion rates of the
21 indicator radionuclide and intake values of

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1 the dosimetrically-significant radionuclides
2 that do not relate to real intakes and
3 excretion rates."

4 And the same response,
5 essentially, was at play there.

6 And the final one is the final
7 item that we had to deal with, which was No.
8 26. And the finding summary was, "SC&A
9 questions the validity of the guidance
10 provided by the procedure on the assignment of
11 radionuclide-specific intakes of mixed fission
12 and activation products when air sampling and
13 urinalysis data associated with reactors or
14 reactor fuels are available only as gross or
15 total beta activity or gross or total gamma."

16 That is questioning, again, the
17 reality with respect to what is actually seen.

18 There is a longer and more involved response
19 from NIOSH on that one, but the issue appears
20 to be pretty much the same.

21 Is there anything anyone wants to

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1 say about what I just said that would help
2 Steve in his machinations when he goes over
3 the list?

4 DR. MAURO: Yes. Steve, while we
5 were going over a number of these, there was a
6 recurring theme related to plausibility,
7 bounding assumptions, maximizing assumptions.

8 You know, when is it reasonable to construct
9 a lookup table that simplifies the problem?
10 Do you use, under default circumstances, which
11 may not really represent any one particular
12 real circumstance, but is more of a construct?

13 And Ted did a very nice job in
14 explaining the intent of the rule with respect
15 to this matter, and it will go toward, I
16 think, our -- I think it will be important
17 that we read the transcript, which will be
18 ready in about a month in raw form. And
19 perhaps together with Steve and Joyce, we will
20 sort of share all this and put our heads
21 together and come up with a response that not

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1 only is from a technical perspective, but also
2 the interpretation of the term "plausibility"
3 for some of these constructs I think is going
4 to be important.

5 CHAIR MUNN: Okay. Can we leave
6 that item now?

7 MEMBER ZIEMER: So all of these
8 are going to be --

9 MR. HINNEFELD: Are all those
10 going to be marked in progress now?

11 MR. MARSCHKE: I have marked them
12 all in progress at this point. I have not
13 added the response because it is just too
14 slow.

15 DR. MAURO: They're all the same.
16 I would imagine they're fundamentally close
17 to the same, anyway.

18 MR. MARSCHKE: I will add the
19 response to all those ones similar to the
20 response that I have added to 9, which
21 basically states, "SC&A will review the NIOSH

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1 response. The Subcommittee changed the issue
2 status to in progress."

3 When I get home, I will add that
4 response to each one of the --

5 CHAIR MUNN: That should be fine.

6 All right. Let's see if we have
7 any action on the carryover items that we had
8 from last time.

9 The first one that we have listed
10 on our agenda for this morning was response
11 from SC&A on TIB-13. Do we have anything on
12 that?

13 MR. MARSCHKE: I think I looked at
14 the response that NIOSH provided. My
15 recollection was that I thought they could be
16 changed to in abeyance.

17 Let's see, the first finding was,
18 "Important parameters, such as averaging
19 worker geometry, in particular, worker height
20 and assumed dosimeter position, are not
21 indicated in the description."

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1 The NIOSH response was, "First,
2 Attila is not a point kernel shielding code.
3 Attila is a multi-group deterministic
4 radiation transport program that is capable of
5 modeling complex geometries efficiently and
6 accurately to solve large 3D problems. This
7 is stated in Section 2.2 on the software. The
8 worker geometry is shown in the figures for
9 each scenario, and a list of the distances and
10 dimensions were provided to SC&A.

11 "The geometry factors obtained in
12 the Attila glovebox worker TIB-10 provide a
13 reasonable idea of the spread of ratio values
14 between upper and lower torso in this TIB.
15 The geometric mean and standard deviation of
16 the glovebox are as follows, 2.19 and 1.34,
17 respectively. This spread is based on a
18 Crystal Ball Monte Carlo analysis of 30
19 different upper and lower torso points.

20 "Since this is only geometry-
21 dependent, I would expect it to hold for this

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1 TIB as well. More discussion can be added to
2 avoid any confusion on the part of the reader
3 as well as the dimensions."

4 And I read that response, and I
5 said, basically, I agreed with it, and I --
6 add more discussion to the TIB. And if they
7 do that, then change the status to in
8 abeyance. That would be our recommendation.

9 CHAIR MUNN: Any objection? Any
10 further discussion?

11 (No response.)

12 Anyone on the phone have any
13 problem with taking this in abeyance and
14 awaiting NIOSH's --

15 MEMBER LEMEN: No, I don't. This
16 is Richard.

17 CHAIR MUNN: All right.

18 MEMBER ZIEMER: What's the date on
19 that particular one? I think I missed that.

20 CHAIR MUNN: The most recent one?

21 MR. MARSCHKE: This one --

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1 basically, you won't have this. This was not
2 emailed out. This was, because I was not able
3 to add the responses to the database last week
4 when I was looking at this, I had to pull this
5 information off from the database and put it
6 into this little Word file. Otherwise, I
7 would have normally, you know, if the database
8 had been working the way it is working today,
9 I would have just added this response right
10 directly into the database. Unfortunately, it
11 was not. So I did this as a stopgap.

12 CHAIR MUNN: But the next time we
13 see it, this will be on the database.

14 MEMBER ZIEMER: Scroll it up then.
15 What's the last entry there at the bottom?
16 Scroll down, I should have said.

17 DR. ULSH: That's finding 4 there.

18 MR. MARSCHKE: This is finding 4.

19 MEMBER ZIEMER: I'm sorry. Okay.
20 Yes, then, go back. Okay.

21 MR. MARSCHKE: Right now, we're

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1 just looking at finding 3 there.

2 And let's see, I think I can pull
3 up the -- this is OCAS TIB-13.

4 DR. MAURO: Three.

5 MR. MARSCHKE: Yes.

6 CHAIR MUNN: Thirteen, 3. You're
7 looking at 3, I think?

8 DR. MAURO: Yes.

9 MR. MARSCHKE: OCAS TIB-13.

10 CHAIR MUNN: No. 3.

11 MR. MARSCHKE: No. 3 was basically
12 -- here you can see what was in there
13 initially. This is what is in the database.

14 CHAIR MUNN: Yes, everything
15 except the most recent response is there.

16 MR. MARSCHKE: And then what I
17 proposed to add was what I just read there.

18 MEMBER ZIEMER: Can you put that
19 back up once again, what you just read?

20 MR. MARSCHKE: Which one?

21 MEMBER ZIEMER: What you just

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1 read.

2 DR. MAURO: I don't know if you
3 have that.

4 CHAIR MUNN: No.

5 DR. MAURO: This is a hard copy
6 that Steve gave you.

7 CHAIR MUNN: Yes.

8 MR. MARSCHKE: I just added the
9 one sentence. "Adding more discussion would
10 avoid confusion. Recommend changing the
11 status to in abeyance."

12 MEMBER ZIEMER: So NIOSH is saying
13 that they're going to put this discussion in?
14 That's the discussion, right? Got you.

15 CHAIR MUNN: Our next --

16 MR. MARSCHKE: What did we decide?

17 CHAIR MUNN: We decided that you
18 would make that addition to the database and
19 that it would be in progress.

20 DR. MAURO: In abeyance.

21 CHAIR MUNN: In abeyance, awaiting

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1 the additional comment that has been proposed.

2 Then we have --

3 MR. MARSCHKE: Issue 4, currently
4 in progress, and the issue was, "The procedure
5 underestimates the maximum correction factor
6 to be applied to the badge readings.
7 Therefore, the procedure does not provide
8 adequate guidance for defining the claimant-
9 favorable assumptions."

10 The NIOSH response was, "The basis
11 for the supposed underestimate is the
12 calculation of dose made by SC&A with MCNP.
13 The TIB is vague on the issue of dose
14 calculation and must be updated.

15 "The correction factor is
16 completely determined by geometry. Photon
17 fluence was determined at the surface of the
18 dosimeter on the upper torso and at the
19 surface of the person on the lower torso and
20 head in each scenario. That is why
21 Bremsstrahlung is not taken account in the

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1 TIB.

2 "The geometry consideration is the
3 same. Much of the difference between TIB-13
4 and the review appears to relate to angular
5 dependence on dosimeters. This is a broader
6 issue not affecting just Mallinckrodt cases
7 and should be addressed as an overriding
8 issue."

9 So what did I say?

10 CHAIR MUNN: We then instructed
11 SC&A, did we not? We instructed SC&A to
12 review the NIOSH response. And the question
13 now is has SC&A reviewed that?

14 MR. MARSCHKE: Our response was,
15 basically, "NIOSH indicates that the TIB must
16 be updated to address this issue. And after
17 the TIB-13 has been updated, SC&A proposes a
18 review of the update to determine whether the
19 issue has been addressed. And we recommend
20 maintaining the status of this issue in
21 progress."

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1 DR. MAURO: The only concern I
2 have with this is we did bring up the issue of
3 angular. In other words, beside the location,
4 you know, let's say the lapel versus down
5 here, whatever adjustment, an inverse square,
6 I guess, is also the issue that the angle of
7 incidence of a weak photon, let's say it is
8 Bremsstrahlung, coming in at an angle, there
9 is an additional correction.

10 I remember Bob Anigstein's
11 analysis of the two factors and how they
12 affect -- or it might have been Hans. And it
13 does make a big difference to take both
14 factors into account, not only the inverse
15 square law. Let's say the film badge is worn
16 on the lapel, but you are concerned about the
17 bladder. But there is also a change in the
18 angle of incidence.

19 Now is there a commitment being
20 made here to look into that aspect of the
21 correction factor also?

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1 MR. HINNEFELD: I think what our
2 thought was that to take that up, that affects
3 things more broadly than just the Mallinckrodt
4 data.

5 DR. MAURO: It does. Absolutely.

6 MR. HINNEFELD: That's a more
7 broad thing to discuss, and we would rather
8 deal with that as an overarching issue kind of
9 discussion because it is going to affect a lot
10 of things.

11 DR. MAURO: Is there a home for
12 that? I mean, is there like --

13 MR. HINNEFELD: Well, I mean --

14 CHAIR MUNN: I think it is
15 overarching.

16 MR. HINNEFELD: Theoretically, we
17 will have to form, you know, whether that is
18 going to come to this group as a special
19 meeting to deal with overarching issues or
20 what, that's where those will have to be
21 discussed. There are a few of them out there,

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1 and they wouldn't be site-specific. They
2 would be overarching, so you wouldn't give
3 them to a site Work Group. I suspect they
4 would come here. But it sounds -- it would
5 almost be a separate agenda, and we would have
6 to give some thought to collecting them all
7 because we have had a few.

8 DR. MAURO: Yes, that's the
9 question I have. Do we have --

10 MR. HINNEFELD: Well, Jim kept a
11 list for a while.

12 DR. MAURO: So Jim has a list?

13 MR. HINNEFELD: He kept a list for
14 a while.

15 DR. MAURO: I agree that is where
16 this would go.

17 CHAIR MUNN: Would that pass to
18 you or whether we are still going to deal with
19 it --

20 MR. HINNEFELD: Oh, no, I mean
21 it's not coming to me. That would be

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1 delegating up.

2 CHAIR MUNN: Somebody's got to
3 take it. I thought Jim was going to take --

4 MR. HINNEFELD: We will see what's
5 -- we will have to just come back another
6 time. For this purpose and for the purpose of
7 this agenda item and this document, we just
8 felt like it shouldn't be discussed under this
9 document because it affects life more broadly.

10 DR. MAURO: Do we have a category
11 to say this has been transferred to global or
12 something like that? That is, do we have a
13 category for this kind of thing?

14 MR. HINNEFELD: Boy, I don't know.

15 DR. MAURO: What are the options
16 for designation of this?

17 MR. MARSCHKE: Well, right now, I
18 mean, basically right now, if you look at what
19 they said, NIOSH is updating the dose
20 calculation. So they're updating the TIB. So
21 I would not move it to anywhere until we see

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1 what the update looks like.

2 DR. MAURO: Yes, but I got the
3 sense that the updated TIB is to explain the
4 basis for the correction factor between the
5 lapel and the bowel.

6 MR. HINNEFELD: I suspect that's
7 what it is going to do. I don't think --

8 DR. MAURO: But not the angle of
9 incidence.

10 MR. MARSCHKE: Well, let's wait
11 until we see what the update is --

12 DR. MAURO: Okay.

13 MR. MARSCHKE: -- before we --

14 DR. MAURO: Okay.

15 MR. HINNEFELD: Yes, we have
16 committed to a change. We have committed to a
17 change of some sort where you put it in
18 abeyance, and at that point it could then be -
19 - if that's okay, then you could transfer it
20 to overarching.

21 DR. MAURO: Well, you see, what

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1 that correction factor is going to be and the
2 description of it is something that we really
3 don't have in front of us, right?

4 MR. MARSCHKE: Correct.

5 DR. MAURO: So we really can't say
6 it's in abeyance.

7 MR. MARSCHKE: No. That is why we
8 basically recommended maintaining it in
9 progress.

10 DR. MAURO: In progress, yes. But
11 any chance we could capture -- see, I don't
12 want to lose this angle-of-incidence issue in
13 terms of status. You know, is there any way
14 just to make sure of that? Because, if,
15 ultimately, that aspect of this response is
16 going to be a global issue, and it is
17 appropriately a global issue --

18 CHAIR MUNN: It is.

19 DR. MAURO: -- I just don't want
20 to lose that. That's all.

21 MR. MARSCHKE: Let's add a

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1 response here, basically, we can add something
2 in here. We can add some words to
3 instructions that NIOSH, when they do the
4 update, or suggestions to NIOSH when they do
5 the update about angle of incidence. What do
6 you want to say, I guess, is the question.

7 MEMBER ZIEMER: Well, let me
8 insert here sort of a question, and then you
9 can remind me if I have forgotten. But do we
10 have an overarching document that deals with
11 personnel dosimetry methodologies, or
12 something like that, where it would be the
13 natural place to discuss film badge response
14 and the variables that affect it, or something
15 like that?

16 MR. HINNEFELD: As far as I know,
17 it's a list that we keep in our office, and I
18 don't know that it's got a formal category on
19 the thing.

20 MEMBER ZIEMER: But I'm thinking
21 of a document, sort of like the contamination

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1 resuspension document.

2 DR. MAURO: Yes, like resuspension
3 factor. That's a global issue that's on the
4 list. So it goes on that list, evidently.

5 MEMBER ZIEMER: Right.

6 CHAIR MUNN: But this issue has
7 come up in several other Work Groups.

8 DR. MAURO: Yes, it has.

9 MEMBER ZIEMER: Yes, yes.

10 CHAIR MUNN: And inevitably, it --

11 MEMBER ZIEMER: Well, I think SC&A
12 raises it as a regular thing. As you say,
13 it's an overarching issue.

14 But you have the issue of energy
15 response of film badges. You have the issue
16 of angular dependence. You have the issue of
17 fading.

18 DR. MAURO: Yes.

19 MEMBER ZIEMER: You have the issue
20 of minimum detectable limits which varies from
21 site to site. But at least the fading,

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1 angular dependence, and energy dependence are
2 certainly three parameters that you have to
3 come to grips with sort of across the board,
4 irrespective of the site.

5 DR. MAURO: Right. That's true.

6 Well, and the only reason why I
7 was saying that, that point that you just
8 made, it needs to be captured somewhere.
9 Certainly, it's in the transcript. Do we want
10 to capture it in any way in the matrix?

11 MR. HINNEFELD: Well, I would
12 suggest that we would have to go back and find
13 out from the design of the database where --
14 how to do that. Because right now, the
15 database is structured along -- our part of
16 the database is structured along Subcommittees
17 and Work Groups. That is sort of the big
18 chunk, and it's set up that way, so that any
19 of the Subcommittees and Work Groups, this is
20 available to them, and just be some --
21 designating authorities and things like that,

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1 putting names on them.

2 MEMBER ZIEMER: Well, I would
3 think it could even still be addressed in this
4 Work Group, but you would say it was a TIB-
5 something-or-other issue. I mean, we have
6 done that on a couple of others where we keep
7 it as being discussed in a different --

8 DR. MAURO: Sure, like TIB-9 for
9 ingestion and --

10 MEMBER ZIEMER: Yes.

11 DR. MAURO: -- TIB-70 for the
12 residual periods.

13 MEMBER ZIEMER: Right.

14 DR. MAURO: Absolutely. We have
15 transferred many issues. Now, unfortunately,
16 this particular issue does not have a TIB that
17 I'm familiar with.

18 MEMBER ZIEMER: It doesn't have a
19 home right now.

20 DR. MAURO: A home. That's why I
21 said that it needs a home, right.

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1 MEMBER ZIEMER: But it might be
2 possible to think in terms of identifying --
3 well, it's part of the overarching issues,
4 sort of, topic, and how are we addressing
5 overarching issues in terms of the procedures,
6 or something like that?

7 You know, I could even imagine
8 setting aside, putting in reserve some future
9 TIBs that we know are going to have to be
10 developed.

11 DR. MAURO: I know this may be --
12 well, this is a suggestion. We are going to
13 come across these things from time to time,
14 and we want to make sure here, within our own
15 -- the thing we do have control over, that we
16 capture that.

17 Now we could do that by simply
18 leaving this in progress, and in the write-up
19 say the things we just said, that this is an
20 issue that is overarching and needs to be
21 addressed eventually somewhere, in some

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1 capacity.

2 We could also create -- now this
3 would be changing the format of the structure
4 -- but actually create a subdivision -- maybe
5 we want to drop something -- which would be
6 called overarching issues. And there will be
7 a list here. In other words, rather than
8 someplace in your office, we could actually
9 have a list that's here where we would list --
10 this would be the home of where the
11 overarching issues list is kept.

12 And then, maybe at the next
13 meeting, you could bring your list. Here's
14 what we have right now on our list, and load
15 it up. And this way, you will actually have a
16 formal home in the database for this
17 Subcommittee.

18 CHAIR MUNN: Actually, John, that
19 is exactly what I was going to suggest. I was
20 going to ask Stu and Brant if they can work
21 with Jim to get his list of the overarching

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1 issues we have identified that have not yet
2 found a procedural home, so that at least we
3 will have a better opportunity to view exactly
4 how much work needs to be done.

5 My memory is that there are less
6 than a half dozen of these. I think there are
7 only four or five.

8 MR. HINNEFELD: Yes, that's my
9 recollection.

10 CHAIR MUNN: But we need to get
11 them formalized. We have not had them
12 formalized in any way. But we have done quite
13 a bit of work around them, on the assumption
14 that something magical was going to happen.

15 So if we could request that you
16 bring us that list the next time we meet, then
17 we will include that on our expectations and
18 have some discussion then about whether it is
19 timely for this particular body to be doing
20 anything with it at this moment or whether it
21 is a future item.

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1 DR. ULSH: So the current --

2 CHAIR MUNN: And --

3 DR. ULSH: I'm sorry. Go ahead.

4 CHAIR MUNN: No, go ahead.

5 DR. ULSH: So the current status
6 is in progress? Is that it?

7 CHAIR MUNN: Yes.

8 DR. ULSH: Okay.

9 MR. MARSCHKE: Do you want to add
10 any response to this or just basically leave
11 it as in progress?

12 CHAIR MUNN: You had a one-liner
13 response, didn't you? Or did you?

14 MR. MARSCHKE: Well, I was toying
15 around as we were talking as to whether or not
16 we wanted to add something along the lines of
17 what I had here, about the three topics I
18 think that Paul talked about, in my
19 understanding of what was discussed, is that
20 the calculation of the dose from badge
21 readings needs to capture the issue of energy

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1 response, angular dependence, and fading, if I
2 was hearing the discussion correctly.

3 And I don't know if somehow we
4 want to incorporate that into the database
5 record or if we just want to just cancel this
6 response and just leave it as in progress.

7 MEMBER ZIEMER: What about a
8 sentence to the effect that this appears to be
9 an overarching issue or a global issue that
10 probably should be dealt with under a separate
11 -- would you call it a separate TIB or --

12 MR. HINNEFELD: Or agenda item
13 or --

14 CHAIR MUNN: Document, a separate
15 a document.

16 MEMBER ZIEMER: A separate
17 document or a separate --

18 MR. HINNEFELD: Yes.

19 MEMBER ZIEMER: I'm not even sure
20 of the procedure at the point you do that.
21 You are looking at -- it's sort of like high-

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1 fired oxide, you're looking at how to handle
2 them, but you may have a specific procedure
3 for a specific site, but it is more of an
4 issue approach where you address how you come
5 to this issue and deal with it.

6 DR. MAURO: There may already be
7 an OTIB out there. I don't know. If Kathy
8 Behling is on the phone, she probably has all
9 the OTIBs memorized. Whether or not there
10 would be a home for this, that is, is there an
11 OTIB out there, just like OTIB-70 has a home
12 for all this residual period issues, is there
13 an OTIB out there that would be the proper
14 home for film badge correction factors related
15 to all the matters we are discussing? If that
16 is the case, then all it is a matter of is
17 basically transferring it.

18 MR. MARSCHKE: Well, what we did
19 on some of the earlier issues about, well,
20 again, on resuspension, we changed the status.
21 We had a status where we basically said, this

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1 has been transferred to global issues. And we
2 kind of never really defined what global
3 issues are or is.

4 CHAIR MUNN: I think I suggested a
5 course for moving forward. Is that acceptable
6 with everyone? Then let's --

7 MR. HINNEFELD: Was it?

8 CHAIR MUNN: Yes.

9 MR. HINNEFELD: What was it?

10 CHAIR MUNN: The course for moving
11 forward was that you were going to bring us
12 the list of what we have already identified as
13 overarching issues, and we will discuss at our
14 next meeting how to address what might be the
15 most expedient method for addressing those and
16 getting them moving.

17 Yes, Ted?

18 MR. KATZ: No, I was just going to
19 say, just to add on to what Wanda just said,
20 one element of that may be that DCAS wants to
21 consider whether any of these overarching

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1 issues are an appropriate subject for an OTIB,
2 or whatever, some sort of document. So that
3 when we have that discussion --

4 DR. MAURO: Maybe all this needs
5 to say is transferred to, like you did with
6 the others, transferred to -- it is a global
7 issue, and the way that ends up being handled
8 right now, I guess we don't know.

9 MEMBER ZIEMER: Yes, I'm not even
10 sure you need to put --

11 DR. MAURO: No, I was going to
12 say, you don't need that. You can just say
13 transferred to a global issue.

14 DR. BEHLING: Well, John, this is
15 Hans Behling. Can I just make a comment?

16 DR. MAURO: Sure.

17 CHAIR MUNN: Please.

18 DR. BEHLING: Because the question
19 was whether or not there is an OTIB. The
20 issue of angular dependence was heavily
21 discussed during the time that I reviewed

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1 Implementation Guide 1. And I think I
2 provided some strong documentation from
3 various texts that talked about angular
4 dependence of photo -- film dosimeters as a
5 function of energy and angle. And I think we
6 had some fairly extensive discussions back in
7 the very early days when we were reviewing the
8 basic documents, including Implementation
9 Guide 1 and 2. So there is a significant
10 amount of information that had been submitted
11 and discussed several years ago on this issue.

12 DR. MAURO: And interestingly
13 enough, when we were looking at OTIB -- OCAS
14 IG-001, which is the document that -- as being
15 one of the ones we were going to do a two-
16 pager for, we ended up not doing a two-pager
17 because all of the issues have not been
18 resolved. So, in principle, this issue that
19 we are talking about right now has a home, and
20 that home, as Hans has pointed out, is OCAS
21 IG-001.

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1 CHAIR MUNN: Is an IG.

2 DR. MAURO: Now the question is,
3 has that issue been resolved in the issues
4 resolution process for OCAS IG-001?

5 DR. OSTROW: John, the only open
6 issue for 001 -- is a mislabeling of one of
7 the findings.

8 DR. MAURO: So this has been
9 resolved?

10 DR. OSTROW: Everything has been
11 resolved.

12 DR. MAURO: Oh, so this may have
13 already been resolved. Any way we could find
14 that out? You know, the degree to which
15 issues resolution related to OCAS IG-001 did,
16 in fact, resolve angular dependence, fading,
17 and whatever?

18 DR. BEHLING: They were really
19 never resolved, John, because the simple fact
20 is this. When we calibrate a film dosimeter,
21 the standard protocol is to use, obviously,

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1 some source of radiation, and then the film
2 badges are exposed to that point source
3 usually at right angles or normal to the
4 incidence of the film. And that, of course,
5 is the optimum position of a dosimeter to
6 respond to the imparted energy.

7 And if I look, for instance -- and
8 again, I just opened up my old trustworthy
9 radiation dosimetry book that was issued by
10 Heine and Brunell many, many years ago, and
11 I'm looking at, for instance, the energy of
12 photons at 200 keV, which is a very, very
13 common central value associated with human
14 exposures in the various environments that we
15 are dealing with; namely, the 30 to 250 keV.

16 I can just simply recite the
17 reduced response on a film dosimeter at zero
18 degrees, it's 1.0 or normalized, then,
19 therefore, to all the other values. At 22.5
20 degrees, it's .92. At a 45-degree angle, it's
21 .73. At 67.5, it's .45, and at 90 degrees,

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1 it's .41.

2 So if you actually average those
3 values out, a dosimeter that is uniformly
4 exposed from a source term that is rotational
5 or omnidirectional or 2 pi geometry, you would
6 expect a response that is, in essence, around
7 70 percent of what that response should be.
8 In other words, you are underestimating the
9 true exposure that individual received by
10 about 30 percent.

11 DR. MAURO: Okay. Has that been
12 adopted?

13 MEMBER ZIEMER: Well, I don't know
14 if that's been adopted. I mean, you don't
15 have to adopt that. I mean, those are
16 physical facts, and I don't think that has
17 ever been disputed.

18 The issue really is, in practice,
19 it would be very rare, maybe impossible, to
20 always have normalized beams hitting you --
21 even though it is a beam, you would get

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1 scatter, and so on -- in a particular case.

2 Unless you knew that the exposure
3 was always from, you know, a 1-degree angle or
4 something where you have a terrific miss of
5 the dose, you end up integrating. And then,
6 in the sort of general case, you do what Hans
7 said, you say, well, you assume that it is
8 distributed over all angles over sort of an
9 even period of time. Then your dosimeter has
10 missed about 30 percent of the total, and you
11 can adjust for that.

12 So all you have to really do is
13 say, okay, here's the correction factors we
14 would normally use in a typical field.

15 DR. MAURO: Yes.

16 MEMBER ZIEMER: Here's the
17 correction factors we would -- you do have
18 some workers that are always head-on into a
19 beam, maybe a glovebox worker, or so on,
20 although it's not always that direct and it is
21 scattered. But I think you could come up with

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1 a scheme where you said, here's the conditions
2 under which you would use the actual reading
3 or here are the conditions under which you
4 would correct it by 1.3 or some value. And
5 that's what you're talking about, I guess.

6 DR. MAURO: Yes.

7 MEMBER ZIEMER: Yes. And I guess
8 what they're talking about here.

9 DR. MAURO: Yes. The thing is
10 this was an issue raised related to OCAS
11 IG-001.

12 CHAIR MUNN: And it's been raised
13 again and again and again, and unless we are
14 prepared to discuss IG-001 right here, which I
15 am not -- I have not seen it, and it isn't
16 even on my list anymore. We used to have
17 IG-004 on there.

18 But I would like to suggest that
19 we ask, that we be prepared to take a look at
20 existing documentation which may cover any
21 question that is being raised here. Since we

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1 know it has been discussed earlier before, may
2 we ask NIOSH and/or SC&A or both to please
3 verify what is contained in the IG document
4 that might or might not bear on that?

5 MR. KATZ: I think if you consult
6 Jim Neton, I think he was on the other end of
7 this discussion, this extensive discussion.

8 MEMBER ZIEMER: Right.

9 MR. KATZ: There were a series of
10 discussions, as it might have been actually
11 with Hans and others, and he probably can
12 recollect where to look for exactly how this
13 was resolved.

14 MEMBER ZIEMER: You see, some of
15 it is also taken care of in other ways, like
16 the film badges. Sure, there's energy
17 dependence, but, typically, they have several
18 filters and the film badge company can make a
19 correction within reason, unless you're using
20 an extremely different energy that they don't
21 know because they calibrate it at certain

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1 energies, too. They can, to some extent,
2 bracket the energy based on the film badge
3 response and the filters.

4 But, anyway, we don't need to get
5 into that detail here, but I guess the
6 question is is there -- there must be some
7 standard ways that we can do this, if we need
8 to have a methodology defined.

9 MR. HINNEFELD: I would believe
10 so. I think that the suggestion to go back to
11 IG-001 -- well, IG-001 sounds like it should
12 be the home for the global issues.

13 MEMBER ZIEMER: Right.

14 MR. HINNEFELD: That's one thing.

15 MEMBER ZIEMER: See what it
16 already says about it.

17 MR. HINNEFELD: And then go back
18 and refresh our memories on that discussion.
19 I remember the discussions. I just don't
20 remember resolutions very well.

21 MR. KATZ: So IG-001 is not in

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1 this database?

2 IG-001 is not in this database?

3 MR. MARSCHKE: No.

4 MR. HINNEFELD: No, it's not.

5 MR. MARSCHKE: No, I can't reach
6 it. No, it's not reachable in this database.

7 You may be able to bring it up, Stu, but I
8 can't bring it up.

9 MR. HINNEFELD: So you can't see
10 it?

11 MR. MARSCHKE: I can't see it.

12 CHAIR MUNN: The only thing that
13 is in this database is information --

14 MR. MARSCHKE: No IGs, no PERs.

15 DR. MAURO: Well, when we reviewed
16 them, that was the first one we --

17 MR. HINNEFELD: Yes, but I think
18 we may have gotten done with it before --

19 DR. MAURO: But it's not in this
20 database?

21 MR. HINNEFELD: -- before we got

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1 the database going. That's the only thing I
2 can think of, back when we were using tables
3 and matrices.

4 MR. MARSCHKE: It's one of those
5 things that we talked about this morning when
6 we talked about the database.

7 MR. HINNEFELD: Yes.

8 MR. MARSCHKE: It's one of the
9 deficiencies of the database, in that it does
10 not --

11 DR. MAURO: Have everything?

12 MR. MARSCHKE: In some ways, we
13 can see how many issues were raised in IG-001,
14 how many of them have been resolved, but we
15 can't see what the issues were. We can't see
16 what the resolutions were.

17 DR. MAURO: Yes, I have the sense
18 from this morning's discussion that there were
19 a number of new PERs, for example, PER 9,
20 12 --

21 MR. MARSCHKE: That is true, too.

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1 DR. MAURO: -- that we would like
2 to load now because we have recently completed
3 our work. But I'm hearing that there are also
4 some that we did five years ago, reviews of
5 procedures, such as --

6 MR. MARSCHKE: That was discussed
7 this morning as well.

8 DR. MAURO: Oh, I didn't hear
9 that. My apologies.

10 MR. MARSCHKE: We talked about
11 that.

12 DR. MAURO: And we have to load
13 those, also.

14 MR. MARSCHKE: We have to somehow
15 access them. I don't know. They may be
16 already loaded somewhere. I don't know how
17 this database works.

18 MR. HINNEFELD: Yes, I'll have to
19 figure that out with the guys back in the
20 office, but --

21 MR. MARSCHKE: So you can,

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1 basically, again, it's like -- I've got it
2 here.

3 CHAIR MUNN: This brings up
4 another item which this particular format also
5 has robbed us of, and that is the ability to
6 tell when these items came to us. Our earlier
7 database had them grouped by -- we could tell
8 by date. We received groups of procedures by
9 certain dates. And this does not give us a
10 feel for whether we are dealing with a group
11 1, a group 2, group 3, or --

12 DR. MAURO: Yes, I remember that.
13 Right.

14 CHAIR MUNN: -- additional
15 findings.

16 And there are times when that
17 information is very useful to us. Certainly,
18 the next time we make a report to the
19 Secretary, it will be enormously useful, and
20 I'm not quite sure how to parse that out of
21 this.

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1 MR. HINNEFELD: And also,
2 everybody should remember IG-001 was reviewed
3 twice. There's a Rev. 1 review and there's a
4 Rev 2. review. The Rev. 2 review still has,
5 according to the database -- it comes up for
6 me because of -- rights, I guess -- there were
7 24 findings, and I believe 11 are still open.

8 CHAIR MUNN: And you see, if
9 they're open, then why am I not seeing them on
10 this database?

11 MR. MARSCHKE: Basically, if you
12 pull up, like we talked this morning, if you
13 pull up the reports file, Wanda, if you go up
14 to the top of the database, under the Reports
15 button, and you click on the SC&A Finding
16 Status Report, you will see IG-1, 2, 3, or 1,
17 2, and 4 up there.

18 Like Stu said, there were 24
19 issues for IG-1, seven for the Rev. 2, and 17
20 for Rev. 1.

21 Now this database will pull up

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1 this information, but it will not -- let me go
2 back to the documents screen. None of the IGs
3 are in these 91 documents. If you go and look
4 for IG in one of these documents, you don't
5 find any. None of the IGs. So it's there,
6 but it's not there.

7 DR. MAURO: I think this is very
8 important. IG-1 and 2 are the rock we stand
9 on. They are the starting point in this whole
10 process.

11 CHAIR MUNN: Yes.

12 DR. MAURO: We've got to get that
13 into the system.

14 CHAIR MUNN: Yes, we need to be
15 able to reference them easily, and I am still
16 not getting them, but there is no point in our
17 dealing with that. That is a mechanical
18 thing.

19 I think our request of NIOSH now
20 is fairly clear, and we can probably move on
21 from there.

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1 Do we have anything? What's our
2 next item in 13 that we need to look at?

3 MR. MARSCHKE: That was basically
4 -- so that was just left as in progress?

5 CHAIR MUNN: Yes.

6 MR. MARSCHKE: Item 13-5 was some
7 discussion as to how the assumed worker height
8 and placement of the dosimeter on the worker
9 was obtained as well as verification that it
10 creates a plausible upper bound for the
11 claimant would benefit the analysis.

12 And NIOSH says, "Will be added.
13 See also response to finding 3."

14 And, again, since NIOSH has agreed
15 that it will be added, my recommendation was
16 to change the status to in abeyance.

17 CHAIR MUNN: Reasonable. Any
18 objection to in abeyance?

19 (No response.)

20 All right.

21 DR. MAURO: I hate to do this, but

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1 we don't know what those adjustment factors
2 are, do we? They are saying that they will be
3 provided. What does it say again? I guess it
4 sounds a lot like what we just worked on.

5 MR. MARSCHKE: "Some discussion as
6 to how the assumed worker height and placement
7 of the dosimeter on the worker was obtained as
8 well as verification that it creates plausible
9 upper bounds will benefit the analysis."

10 So, it's basically they want, we
11 said we wanted a discussion.

12 DR. MAURO: Yes, that's true.

13 MR. MARSCHKE: And basically,
14 NIOSH said that they will provide the
15 discussion.

16 DR. MAURO: Okay. You're right.
17 It does not say we want to see what the
18 adjustment factors are. That's the other one,
19 I guess, the one we just talked about.

20 MR. MARSCHKE: Yes.

21 DR. MAURO: Okay.

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1 MR. MARSCHKE: And the last one
2 was 13-6. "TIB-13 does not represent a
3 scientifically valid or claimant-favorable
4 approach to developing a correction factor for
5 organs in the lower torso. The TIB
6 underestimates the DCF by a factor of almost
7 five. This appears to be essentially a
8 restatement of finding 4. So see response to
9 finding 4."

10 And since finding 4 was left as in
11 progress, I believe that we should probably
12 leave this -- I think the recommendation was
13 to leave this one as in progress.

14 DR. ULSH: What's the difference
15 between and that --

16 MR. MARSCHKE: Part --

17 DR. ULSH: What was it, addressed
18 in?

19 MR. MARSCHKE: That's what --
20 again, either we can change it to addressed in
21 OCAS TIB-44 -- or 13-4 or we can just leave it

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1 as standalone, as in progress.

2 DR. MAURO: I vote for addressed
3 in because for all intents and purposes -- I
4 hate to make it appear that there are two
5 issues here when there really is one.

6 MR. KATZ: I agree.

7 MR. MARSCHKE: So we change this?

8 CHAIR MUNN: Addressed in, that's
9 better.

10 Okay, excellent. Anything else on
11 TIB-13?

12 (No response.)

13 If not, the next item we have on
14 our list is OTIB-49-01 and 02.

15 There was going to be some
16 technical conversation between NIOSH and SC&A
17 relative to plutonium retained in the lung.
18 Has that discussion occurred?

19 DR. ULSH: I'm not aware that it
20 has occurred.

21 MR. MARSCHKE: I'm not, either.

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1 DR. MAURO: But can you hear a
2 little bit about what that's about? In other
3 words, what's that discussion as to context?
4 Do you know what that is? This is the high-
5 fired plutonium one, isn't it, the 49?

6 DR. ULSH: I think that's the 49.

7 DR. MAURO: So there was some
8 reason why we felt -- because I know that we
9 reviewed that, and we approved it. We found
10 it fine. I was surprised to hear there's more
11 discussion regarding it, and I just wanted to
12 get the context.

13 CHAIR MUNN: We have had these
14 items, we have carried these forward for a
15 long time.

16 MEMBER ZIEMER: Notes from last
17 time on 01 and 02, the note I wrote to myself
18 was, "NIOSH and SC&A are both going back to
19 review and clarify these issues." That must
20 have been -- we'd have to go back to the
21 earlier one then.

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1 CHAIR MUNN: This is estimating
2 doses of plutonium strongly retained in the
3 lung.

4 MEMBER ZIEMER: It looks like
5 there was some lack of clarity on what the
6 issues were.

7 MR. MARSCHKE: I believe that was
8 -- Stu, did you send an email way back?

9 MR. HINNEFELD: Oh, is this that
10 thing?

11 MR. MARSCHKE: I think this is
12 that thing; it's your email, because that's
13 what my notes say. "Look for Stu's email last
14 fall." So that's what I have in my notes from
15 the last meeting.

16 MR. HINNEFELD: Okay. The general
17 context of this is that there were two
18 findings written on this, at least two
19 findings. And we provided responses to both.
20 And SC&A came back with essentially a non-
21 assent, you know, additional discussion sort

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1 of thing on one of the findings. And on the
2 other findings, they came back with
3 essentially, again, a non-consent, additional
4 findings.

5 But, in the second finding, they
6 were not consenting with our first response.
7 It was unrelated to our response to the second
8 finding. It was additional response to the
9 first finding, as I read it.

10 MR. MARSCHKE: Okay.

11 MR. HINNEFELD: And I guess that's
12 what we were trying to clarify, and that will
13 require Joyce on the phone to do that.

14 Because I wrote a fairly long
15 thing of trying to piece all this together and
16 how did we get where we are. That's what I
17 arrived at. As far as I know, there was one
18 finding that I thought should have been closed
19 from our first response -- or previous
20 response. I don't know if it was our first or
21 not.

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1 But the dissenting opinion didn't
2 reflect that finding, but it reflected the
3 first finding. So that's what the issue was
4 and that's what we were going to talk about,
5 is to see if Joyce, (a) agreed with my
6 interpretation, okay, it really is the one
7 finding. And that's what I wanted to continue
8 discussion about. That's what I thought.

9 CHAIR MUNN: Well, we have been
10 carrying it forward for a year.

11 MR. HINNEFELD: I'm tempted not to
12 change anything in it.

13 DR. MAURO: Just leave it? The
14 ball's in our court, though. Clearly, Joyce
15 is center-stage on an awful lot of stuff we're
16 doing here. We've got to get her involved.
17 She is very busy with other matters, but it is
18 important that we schedule her in for the next
19 time we get together.

20 CHAIR MUNN: Well, this technical
21 discussion thing is really hanging us up on

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1 this particular issue.

2 DR. MAURO: We have Rich Leggett
3 and Dunstana Melo, also, who have very, very
4 strong backgrounds in the very same subject
5 areas. I'm thinking that what I could do to
6 have more depth here, so that folks are on
7 travel, we can still cover these. I hate to
8 see us, you know, go through the whole day and
9 have to leave behind so many items. I will
10 see what I can do to have available to us a
11 little bit of a fallback position, so that we
12 don't have to have so much stuff on hold.

13 CHAIR MUNN: Yes, that would be
14 most helpful, John. Thank you very much.

15 The next item that I have is
16 Procedure 42, scaling factor, finding 06. Is
17 there a status change?

18 DR. ULSH: Elyse, do you have
19 anything to add or to contribute on that one?

20 MS. THOMAS: Let's see, I think
21 the only thing or the last thing that I have

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1 is that there was a response added to the
2 database for finding 06. So let me get there.

3 So it may be that SC&A needed to
4 just verify that they were okay with that
5 additional information, and then --

6 CHAIR MUNN: Elyse, the database
7 shows your response on July 16th. "While it's
8 possible for the scaling methodology to be
9 used to reduce the doses shown in table 5.1,
10 DCAS staff directed ORAU staff not to apply a
11 negative scaling factor, as part of an email
12 communication and personal discussion in 2004.

13 Therefore, the values in table 5.1 are either
14 used as is or scaled upward, when appropriate,
15 as described by the procedure. The procedure
16 will be revised to incorporate this guidance."

17 So, apparently, there's been no
18 status change on that, and this is essentially
19 in abeyance, is that correct? Am I reading
20 that properly?

21 MS. THOMAS: Yes, that sounds

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1 right. I mean, we modified the response, but
2 we have not modified the document.

3 CHAIR MUNN: So we already have it
4 listed as in abeyance. There is no change on
5 it.

6 And I'm going to take that off the
7 list of carrying because we will see something
8 when you have changed it, right?

9 MS. THOMAS: Yes.

10 CHAIR MUNN: Good.

11 Now we have a continuation of
12 carryover items that include quite a number of
13 things. I'm a little concerned about
14 undertaking them until we have made sure that
15 we have covered the business of the two-page
16 summaries, because that's something I really
17 do want to ensure that we get in front of the
18 Board, if we possibly can.

19 Let's put our database on hold for
20 just a moment, and, if you have before you the
21 four documents that have been provided to you

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1 as two-pagers --

2 DR. OSTROW: Excuse me, Wanda. We
3 actually sent five of them.

4 CHAIR MUNN: We sent five, but we
5 haven't had an opportunity, the fifth one just
6 got here.

7 DR. OSTROW: Yes, about two weeks
8 ago, I think, something like that.

9 CHAIR MUNN: Oh.

10 DR. OSTROW: Actually, no, on
11 September 29th we sent it out.

12 CHAIR MUNN: Oh, I haven't
13 addressed that, and I haven't heard back from
14 anybody else.

15 MEMBER ZIEMER: Well, the fifth
16 one was the tritium one that we did before.
17 Didn't you just redo that?

18 DR. OSTROW: No, the fifth one we
19 sent with OCAS-IG-002.

20 CHAIR MUNN: Yes.

21 MEMBER ZIEMER: Oh, I did get

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1 that.

2 CHAIR MUNN: Yes. It's a brand-
3 new one.

4 But we have the four that are
5 done. At least I have messed them up pretty
6 nicely. And if you can pull those up, let's
7 take a look at them and see if we can go
8 through them numerically, I suppose.

9 OCAS-PR-003. The only changes
10 that I made in any of these when I was editing
11 them was to try to simplify them, frankly. No
12 matter how hard we try, technical people have
13 a tendency to write in a technical format, and
14 we have to try to overcome that when we're
15 aiming for easily-understood documentation
16 that's going to be a permanent part of the
17 public record.

18 So, as kind of a rule of thumb,
19 what the subgroup of your Subcommittee who
20 worked on the initial document, which we were
21 using as our straw man from the last couple of

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1 sessions, and has been approved by the Board,
2 is now ready to go up.

3 For your information, we will be
4 working with Brant over the next few weeks,
5 probably following the Santa Fe meeting, to
6 try to get together with the IT folks and
7 agree on a format and how and where to put
8 those up on our web page, so that they will be
9 available to everybody.

10 One of the things that I hope will
11 happen, and I would like to get the agreement
12 of the Subcommittee to that, I see these
13 documents as documents that SC&A is putting
14 together for us, but I see them as Board
15 documents. They require approval of the Board
16 in order for us to release them to be placed
17 on the site. I think they are the kind of
18 thing to which we will refer in our next
19 report to the Secretary.

20 That being the case, as we go
21 through here, there are one or two minor

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1 things that we will need to change. For
2 example, we will need to, instead of just
3 referring to SC&A from time to time, we will
4 need to say something like "The Board's
5 current practice" or something to that effect.

6 Yes?

7 MEMBER ZIEMER: I would like to
8 reinforce that. I have exactly the same idea.

9 Because unlike the SC&A reports, which we
10 deal with the findings, but that's still your
11 report, we don't change the report.

12 DR. MAURO: Right. Right. You're
13 taking ownership of it.

14 MEMBER ZIEMER: But here we are
15 adopting them. To some extent, they are like,
16 you know, we only have a couple of products.
17 One product is letters to the Secretary which
18 come out of our process and reports to the
19 Secretary. I think these are like that.

20 DR. MAURO: Okay.

21 MEMBER ZIEMER: So, John, you'll

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1 notice my markup.

2 DR. MAURO: Yes, yes.

3 MEMBER ZIEMER: I changed the
4 authorship.

5 DR. MAURO: Right.

6 MEMBER ZIEMER: And it's exactly
7 what you said. This is a document of the
8 Advisory Board, and then I would have it
9 footnoted somewhere saying this document was
10 developed with the assistance of the Board's
11 contractor, S. Cohen & Associates, or
12 something, because we've got to acknowledge
13 that they really did a lot of the work, but it
14 becomes our document.

15 That also affects how some of the
16 things are stated in terms of --

17 DR. MAURO: Sure. Absolutely.

18 Well, could I change the optics up
19 a little bit? As your contractor, we deliver
20 the draft to you that is a work product of
21 SC&A.

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1 MEMBER ZIEMER: Right.

2 DR. MAURO: Now you are in the
3 process, you have to decide whether we think
4 that this work product as delivered met the
5 intent of the mandate you gave us.

6 MEMBER ZIEMER: Right.

7 DR. MAURO: And if it basically
8 meets some threshold of acceptability, then
9 you're going to take it, and we're not
10 involved anymore.

11 MEMBER ZIEMER: Right.

12 CHAIR MUNN: Correct.

13 DR. MAURO: Unless you want us to
14 help, you know, make the edits that you would
15 like to make. So it's no longer ours.

16 MEMBER ZIEMER: Right. Right. I
17 think that's the concept.

18 CHAIR MUNN: That is my intent.

19 DR. OSTROW: Let me understand,
20 then. What you would like to do is that we
21 deliver as best we can these summaries, and

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1 then you'll do the final edit and get it into
2 the system?

3 MEMBER ZIEMER: Well --

4 MR. KATZ: Let me just jump in on
5 this final point.

6 MEMBER ZIEMER: Yes.

7 MR. KATZ: I think SC&A should go
8 ahead and do the edits and so on because
9 they're your contractor.

10 DR. MAURO: Which brings me to a
11 different question. Really, there are two
12 parts.

13 We could deliver to you a product
14 that will read as if it's yours.

15 MEMBER ZIEMER: Right, right.

16 MR. KATZ: Yes, I think that's
17 easier.

18 DR. MAURO: Okay. Fine.

19 MR. KATZ: Yes.

20 MEMBER ZIEMER: Right.

21 MR. KATZ: Does that work for the

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1 Board?

2 DR. MAURO: Yes. Fine. And we'll
3 refine it.

4 MEMBER ZIEMER: Not unlike ORAU
5 assisting NIOSH in developing a NIOSH
6 document.

7 MR. KATZ: Exactly right.

8 DR. MAURO: Okay. Good. That
9 changes what we have to do. So, in effect,
10 right now there are a number of comments that
11 you have here which are both editorial, you
12 know, substance, and also of the way in which
13 it is presented to the world, that you are
14 going to communicate to us in some way, and we
15 will go ahead and make all those edits, which
16 include making it a Board document --

17 CHAIR MUNN: Right.

18 DR. MAURO: -- and get that back
19 to you.

20 CHAIR MUNN: Let me repeat before
21 we start these. Some of the obvious things

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1 that the subgroup worked on with the straw man
2 in determining exactly what we were going to
3 aim for in terms of level of
4 understandability, we agreed that any time you
5 see -- we agreed that we would not use
6 acronyms if we could avoid it.

7 We agreed that in cases where we
8 were addressing a procedure, we would put the
9 title of the procedure before the procedure
10 nomenclature that we usually use because
11 seeing something like OCAS-PR-003 turns people
12 off and their minds just simply jump over
13 that. So we want them to see the titles
14 rather than this sort of thing.

15 We want not to use a complicated
16 word if there are simpler ways to say it, even
17 if it requires more words to say it. We want
18 to use sentences that are as short as
19 possible.

20 And we want to try to make sure
21 that a reasonable person could pick this up

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1 and read through it and not have any major
2 questions outstanding about what did that
3 mean?

4 So those were basically the
5 guidelines that we sort of set out for
6 ourselves.

7 DR. MAURO: And you did. I guess
8 it was our intent to try to meet that.

9 CHAIR MUNN: Right.

10 DR. MAURO: But clearly, we didn't
11 entirely do that.

12 CHAIR MUNN: Well, as I said, it's
13 very difficult for technical people to write
14 in a simplistic, non-technical manner because
15 all of us write some other way.

16 But, with OCAS PR-003, how would
17 you prefer that we address this? Would you
18 like me to simply read through, so that it
19 reads the way my markup reads or would you
20 like to address things in a different way?

21 DR. OSTROW: Well, Wanda, I read

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1 through the four procedures that you commented
2 on, and I accept all your comments in all the
3 documents with the reservation of maybe an
4 occasional edit, a typo here or there. But I
5 accept all your comments. I don't think that
6 we have to go through them all; I mean, unless
7 you want to.

8 DR. MAURO: Well, certainly,
9 between the Work Group Members, you may want
10 to.

11 CHAIR MUNN: Yes.

12 DR. MAURO: But we are prepared to
13 receive your direction to make the editing
14 that you folks together agreed to.

15 CHAIR MUNN: Thank you, John.
16 Thank you.

17 DR. MAURO: So, really, we're not
18 part -- we're sort of outside, on the
19 sideline.

20 DR. OSTROW: I understand your
21 comments, and I agree with them all, as I

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1 said, just with the exception of a few minor
2 edits on what you did, mainly for typo sort of
3 things.

4 CHAIR MUNN: Yes, very possibly
5 so. I certainly didn't check my work very
6 thoroughly after I had done it.

7 On the telephone, Mark or Richard,
8 do you have any comments to make before we
9 sort of take our first little stab at PR-003?

10 MEMBER LEMEN: I don't. Just go
11 ahead, and I'll comment if I have any.

12 CHAIR MUNN: Thank you, Richard.
13 Mark?

14 (No response.)

15 Mark still hasn't joined us.

16 As you will notice, just glancing
17 at this page, you will see that I highlighted
18 a parenthetical statement down under finding
19 4. That was --

20 MEMBER ZIEMER: Hang on. Is there
21 a new version of this that is marked up -- or

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1 what are you looking at?

2 CHAIR MUNN: There is a marked-up
3 one. We are looking at the email that I sent
4 last night.

5 MEMBER ZIEMER: Oh, okay.

6 CHAIR MUNN: With enormous
7 apologies to all concerned for the lateness of
8 it.

9 MEMBER ZIEMER: So I should check
10 my email, that's what I should do.

11 (Laughter.)

12 MR. MARSCHKE: Paul, it's up on
13 the screen up here.

14 DR. MAURO: Oh, that's great.
15 That's the way to do it. Way to go.

16 MEMBER ZIEMER: I should be able
17 to pull it up.

18 CHAIR MUNN: I was having -- my
19 laptop does not have Acrobat on it, and so I
20 was having a hard time manipulating the files.

21 MEMBER ZIEMER: Did you send that

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1 to my CDC address or to --

2 CHAIR MUNN: No. No.

3 MEMBER ZIEMER: Oh, that's why I
4 don't have it. Okay.

5 DR. OSTROW: You may want these as
6 Word documents.

7 MEMBER ZIEMER: I'll just look up
8 here.

9 CHAIR MUNN: Yes. All I really
10 needed to do was to --

11 DR. OSTROW: How did we send these
12 to you, in Word or with Adobe Acrobat?

13 CHAIR MUNN: Well, these were PDF
14 files.

15 DR. OSTROW: Okay. That's our
16 fault, then. In the future, I'll send them to
17 you as Word files.

18 CHAIR MUNN: As long as I have a
19 Word file, I have no problem.

20 DR. MAURO: Yes, that's just, you
21 know, we're in such a habit of delivering our

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1 products in PDF because they're ours, but this
2 is a different circumstance.

3 CHAIR MUNN: Yes, it is, and I can
4 understand how, when you're dealing with a
5 file, you don't want anybody to have anything
6 but read-only capability. Then that's fine.
7 And I really should have called Nancy, but I
8 was arrogant and believed that I could have a
9 PDF without any problem.

10 DR. OSTROW: It's tough to do a
11 markup like this in PDF.

12 CHAIR MUNN: It really -- well, I
13 changed it.

14 DR. MAURO: All you had to do was
15 call Nancy, and she would have sent you one.

16 DR. OSTROW: Yes, I gave it to
17 Nancy in Word. She converted it to PDF.

18 CHAIR MUNN: Do you have it now,
19 Paul?

20 MEMBER ZIEMER: No, but I'm
21 looking at the screen.

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1 CHAIR MUNN: Oh.

2 MR. KATZ: It's on the screen.

3 CHAIR MUNN: All right. Would you
4 like -- would anyone like a read-through?

5 MEMBER ZIEMER: No.

6 CHAIR MUNN: All right. Then I
7 will draw your attention again to the
8 parenthetical comment that's highlighted under
9 finding 4.

10 MEMBER ZIEMER: Hold it there a
11 minute.

12 DR. MAURO: Could I -- because I
13 have a perspective on this, also. Originally,
14 when we were conceptualizing this, I know that
15 you put your format out, but the idea of
16 putting the findings in, the findings,
17 sometimes it's three; sometimes it's a dozen,
18 and sometimes they're burdensome.

19 This is certainly for the Work
20 Group's consideration. Perhaps we don't do it
21 that way. Perhaps we just describe in

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1 layman's terms the essence of what the
2 findings were and get away from delineating
3 the findings because that, to me, is
4 burdensome on the reader. I would rather just
5 tell a story.

6 CHAIR MUNN: It is burdensome on
7 the reader. And as a matter of fact, I think
8 the findings need to be listed individually,
9 but not in the same language that they were
10 originally presented.

11 DR. MAURO: Oh, okay.

12 MEMBER ZIEMER: They don't
13 necessarily have to be word-for-word.

14 CHAIR MUNN: That's what I have
15 done here.

16 DR. MAURO: Okay.

17 CHAIR MUNN: I have changed what
18 the findings say in several instances, and
19 certainly in a couple of the documents the
20 technical verbiage was so thick that you
21 really would have had to have been sitting

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1 around this table for a good many years to be
2 able to absorb it.

3 DR. MAURO: Right, I agree with
4 you. Yes.

5 Toward that end, if we are in the
6 process of doing a future one where it's our
7 judgment, you know, that these three or four
8 readings really could be collected into a
9 descriptive material that collapses it to a
10 much simpler statement regarding them, or do
11 you want to not lose that there were 11
12 findings?

13 CHAIR MUNN: I think we would
14 prefer at this juncture not to lose that there
15 were 11 findings.

16 DR. MAURO: Okay. Good.

17 CHAIR MUNN: That seems logical to
18 me.

19 DR. MAURO: Okay. That's fine.

20 CHAIR MUNN: But we may find a way
21 to circumvent that later or find it necessary

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1 to circumvent that later down the road.

2 DR. OSTROW: Excuse me, Wanda. In
3 cases like John is talking about, if we have,
4 let's say, a bunch of findings, and three of
5 them are essentially the same issue, we can
6 still list them, but have an additional
7 comment that Issues 5, 7, and 12 are
8 essentially the same or deal with the same
9 issue, something, a little bit of guidance in
10 addition.

11 MEMBER ZIEMER: But you wouldn't
12 lose the number.

13 DR. OSTROW: Yes. Have a little
14 commentary on the findings.

15 CHAIR MUNN: I am quite sure that
16 we will find -- you have done such a good job
17 of selecting a very broad difference of
18 procedures here to look at.

19 DR. MAURO: Well, I would say, if
20 you want to communicate that there were 37
21 findings here, 12 findings, or whatever the

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1 number, we can say that, and then go on to
2 conceptually describe what they were about,
3 without actually having every finding.

4 CHAIR MUNN: Certainly, if we have
5 37 findings, that's going to be pretty much
6 necessary.

7 DR. MAURO: I like that. Because
8 I think that's what burdening us, is those
9 findings.

10 CHAIR MUNN: We haven't counted
11 that too much yet. But, certainly, in this
12 case, for example, we had 11 findings.

13 DR. MAURO: Yes.

14 CHAIR MUNN: That's fine. They
15 came through just fine in a brief enough
16 manner that they can be comprehended.

17 DR. MAURO: Okay.

18 CHAIR MUNN: But I think we're
19 going to have to do this on an individual
20 procedure-by-procedure basis.

21 I just wanted to know what, "the

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1 reviewer questions the need for OCAS PR-003,"
2 meant and why it was still in there. I don't
3 know what reviewer. Was that a part of the
4 finding?

5 DR. MAURO: Yes. That was part of
6 the finding, I believe.

7 Steve, am I correct, in the
8 findings list, they were just lifted directly
9 from the original findings? We didn't do any
10 editing to that?

11 DR. OSTROW: No. That's why it's,
12 as Wanda points out, sometimes obscure because
13 we tried to keep the same language. We just
14 changed it slightly in a couple of cases where
15 it wasn't written correctly to begin with and
16 adequately.

17 DR. MAURO: What I'm hearing,
18 though, is right now the marching orders --
19 this is only for the path going forward -- is
20 that we keep the list of findings. If there
21 are five, there's going to be five findings.

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1 But we do have the, I guess, discretion to try
2 to rewrite the findings in a way that makes it
3 a little easier for the reader?

4 DR. OSTROW: Paraphrasing.

5 DR. MAURO: Okay. Fine.

6 CHAIR MUNN: Exactly. Yes.

7 DR. MAURO: Okay. Very good.

8 MR. MARSCHKE: Can I? I mean,
9 just looking at this list of findings, a lot
10 of them, three of them out of the six
11 reference specific sections in the PR. And I
12 question the usefulness. To somebody reading
13 just a two-pager, who just has the two-pager
14 in front of them, "subsection of Section 6,"
15 they're not going to know what you're talking
16 about. "Guidance provided in Section 6.9 and
17 6.10," they're not going to know what --

18 MEMBER ZIEMER: We could just say
19 certain subsections of the document,
20 generalize it.

21 MR. MARSCHKE: I would try to get

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1 rid of specifics, references to specific
2 sections or subsections of the document. I
3 mean, that would be my contribution to this.

4 CHAIR MUNN: We can certainly do
5 that.

6 MEMBER ZIEMER: Can I make a
7 couple of suggestions on this?

8 CHAIR MUNN: Please.

9 MEMBER ZIEMER: One of the first
10 places to eliminate acronyms is SC&A. I would
11 suggest that we start, and you would probably
12 start all of the documents somewhat similarly
13 and say something like, "The Board's
14 contractor, S. Cohen & Associates, reviewed
15 the procedures and produced x findings as
16 follows," or something like that.

17 CHAIR MUNN: Well, haven't we
18 covered that in our -- remember when we did
19 our first one, we had an introductory --

20 MEMBER ZIEMER: Yes. Oh, that's
21 going to be in each one, isn't it?

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1 CHAIR MUNN: Well, it's not going
2 to be in each one. It's going to be the first
3 thing you see when you pull up this site.

4 MEMBER ZIEMER: Right. Right.
5 Okay.

6 CHAIR MUNN: You'll see that
7 business about --

8 DR. MAURO: That's right. You
9 have the front paragraph.

10 CHAIR MUNN: Yes.

11 DR. MAURO: Now that's a good
12 question.

13 CHAIR MUNN: Below that is the
14 heading that you can click on for any one of
15 the --

16 DR. MAURO: So on the website --

17 CHAIR MUNN: So you will have to
18 have -- you at least will have had an
19 opportunity to read that whole first section
20 before you ever start this.

21 MEMBER ZIEMER: Okay. Then let me

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1 offer an alternative, if we are going to use
2 "SC&A" because I don't think you can guarantee
3 that someone is going to have read that, which
4 is dis-attached from the report.

5 Suppose you said, "Summary of the
6 findings," "Results of the findings by the
7 Board's contractor resulting from technical
8 review," or something like that?

9 DR. OSTROW: I think that's good.

10 In general, we'll change "SC&A" to "the
11 Board's contractor."

12 MEMBER ZIEMER: Well, no. I was
13 going to say put that in the title, and then
14 you say, "SC&A reviewed the procedure." That
15 links the two.

16 Otherwise, if someone comes in
17 cold, just looking at the documents, you know,
18 what's the "SC&A" part?

19 DR. MAURO: Right.

20 CHAIR MUNN: Well, yes, I don't
21 think we should ever say "SC&A" in the body of

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1 any of these. And that's one of the changes
2 that we will make.

3 MEMBER ZIEMER: Well, yes, so
4 right there in the sentence, then, you could
5 say, "The Board's contractor reviewed the
6 procedures."

7 CHAIR MUNN: Yes. Correct.

8 MEMBER ZIEMER: And actually,
9 "made a number of comments" or -- are they
10 just comments or do we call them findings
11 here?

12 CHAIR MUNN: "And had a number of
13 findings," actually.

14 MEMBER ZIEMER: Okay.

15 CHAIR MUNN: Yes.

16 MEMBER ZIEMER: And then, just a
17 fine edit, the first finding I think should
18 say, "The procedure," not just "Procedure is,"
19 right? "The procedure?" Make a sentence?

20 CHAIR MUNN: Or "This procedure."

21 MEMBER ZIEMER: Or "This

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1 procedure."

2 And likewise, in finding 4,

3 "Procedure contains."

4 DR. MAURO: Okay.

5 CHAIR MUNN: Yes.

6 MEMBER ZIEMER: And then, I guess
7 I had the same note you did. I was going to
8 say, rather than "Lacks the level of detailed
9 guidance provided in guidance documents
10 utilized by NIOSH's contractor." I don't
11 think we need to even mention Oak Ridge or
12 ORAU, right?

13 CHAIR MUNN: Well, the only reason
14 that I --

15 MEMBER ZIEMER: No, I think we can
16 still mention the titles, but do we need the
17 -- perhaps we give the titles first.

18 CHAIR MUNN: We do give -- well, I
19 changed it around so the titles were first.
20 Originally, they were not.

21 MEMBER ZIEMER: Okay, but these

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1 are -- what I was trying to do is to link
2 that. "These are guidance documents that are
3 utilized by NIOSH's contractor," isn't that
4 correct?

5 DR. MAURO: Some are; some aren't.

6 MR. HINNEFELD: Some are used by
7 them; some are used by us.

8 MEMBER ZIEMER: Okay. So these
9 two are not --

10 DR. MAURO: How about "program?"

11 MEMBER ZIEMER: Okay.

12 DR. MAURO: Yes, "used by the
13 program."

14 MEMBER ZIEMER: No, no. If you're
15 both using them, we don't need -- I was trying
16 to differentiate between --

17 MR. HINNEFELD: Well, some are
18 primarily theirs and some are primarily ours,
19 but to us it's the program uses it all.

20 MEMBER ZIEMER: The program, okay.

21 MR. HINNEFELD: Because we

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1 essentially sign off on it.

2 CHAIR MUNN: So you're suggesting
3 that we take --

4 MEMBER ZIEMER: No, I think it's
5 okay then. "This procedure contains some
6 inconsistencies" --

7 CHAIR MUNN: Comma.

8 MEMBER ZIEMER: "Does not
9 provide" --

10 DR. MAURO: Unless you're
11 itemizing something here.

12 MEMBER ZIEMER: "And does not
13 provide the level of detailed guidance
14 given" --

15 MR. MARSCHKE: Other documents?

16 MEMBER ZIEMER: -- "in other
17 guidance documents."

18 DR. MAURO: See, this is the
19 problem we have with just listing the
20 findings.

21 MEMBER ZIEMER: Right.

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1 DR. MAURO: You see why I tripped
2 over that.

3 MEMBER ZIEMER: "In other guidance
4 documents used in the program, such as -- "

5 DR. MAURO: Yes. Yes, yes. We
6 weren't sure where we had the liberty to go
7 ahead and fool with the findings.

8 CHAIR MUNN: Yes.

9 DR. MAURO: And now you're saying,
10 yes, we do.

11 CHAIR MUNN: Yes, you do.

12 DR. OSTROW: Then we can write it
13 in much clearer English.

14 MEMBER ZIEMER: Then, my
15 suggestion here was just to leave out that
16 parenthetical. I want to know why we need
17 that in there.

18 CHAIR MUNN: Well, the only
19 question is whether we could -- I asked the
20 question earlier, was that a part of the
21 original finding? And Steve said, yes, it

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1 was, that a part of the finding was we
2 questioned whether we even need this
3 procedure. And so, the question before us, as
4 the reviewer, I think, becomes, then, do we
5 want to incorporate that thought? Do we need
6 to capture that thought in this? Or is that
7 truly a parenthetical expression just for our
8 information and we can delete the entire
9 thing? That's the real question.

10 DR. OSTROW: I believe the
11 layperson doesn't need to know that at all.
12 What are they going to do with that
13 information?

14 CHAIR MUNN: Yes, it doesn't seem
15 relevant to me. I'm going to delete it unless
16 I hear to the contrary.

17 MEMBER ZIEMER: No, I would delete
18 it.

19 Finding 6, again, we need the word
20 "the" before "procedure" in finding 6 and 6.3
21 of the procedure.

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1 Again, do we need the section
2 numbers in there? The same in No. 5.

3 MR. MARSCHKE: I would take section
4 numbers out because --

5 MEMBER ZIEMER: "Guidance provided
6 is limited regarding connecting" -- you could
7 leave out the sections, I would think.

8 MR. MARSCHKE: What about, if you're
9 taking out section numbers, what about No. 2?

10 DR. OSTROW: Well, I think, in
11 general, we have section numbers all over the
12 place. We should take those out.

13 CHAIR MUNN: We have changed No. 2
14 to read, "Some subsections of the procedure
15 could be organized in a more logical format."

16 You had something in No. 6?

17 MEMBER ZIEMER: Well, the sixth one
18 there, again, we can remove the section. And
19 I guess it's guidance given for "conducting
20 claimant interviews." Or "the claimant
21 interview" or what? Is that "claimant

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1 interviews?" Well, let's see.

2 DR. MAURO: It needs to be further
3 developed or something like that.

4 CHAIR MUNN: Well, very brief is
5 fine.

6 DR. MAURO: Okay.

7 CHAIR MUNN: It's fine.

8 MEMBER ZIEMER: Well, right now, it
9 says, "claimant interview in the procedure."
10 I guess we don't need to have the words "in
11 the procedure," do we?

12 CHAIR MUNN: No. So all it really
13 needs to say is, "Guidance given for
14 conducting claimant interviews is very brief."

15 DR. OSTROW: Well, I think we
16 changed "very" to "too brief," or "very brief"
17 could be good.

18 MEMBER ZIEMER: Yes. I think the
19 implication is it's too brief.

20 DR. OSTROW: Too brief.

21 MEMBER ZIEMER: And Nos. 7, 8, 9,

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1 and 10, you need the word "the" in front of
2 the "procedures" in every one of those.

3 MR. MARSCHKE: And the section
4 number, take it out?

5 CHAIR MUNN: Yes. So it just says,
6 "Guidance given for conducting claimant
7 interviews is too brief."

8 MEMBER GIBSON: Since you are
9 taking a lot of the words out in a lot of
10 these findings, couldn't we further refine
11 finding 4, cut a few more words out of it?

12 CHAIR MUNN: We probably could.

13 MEMBER ZIEMER: Probably.

14 MEMBER GIBSON: Something like,
15 "Inconsistencies" -- "given in other procedure
16 documents," period.

17 MEMBER ZIEMER: Or just "the
18 program guidance." Yes, in other words, do
19 you need to name them is what you are saying?

20 MEMBER GIBSON: Examples here --
21 because we took out all the subsections, so

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1 they couldn't --

2 CHAIR MUNN: So you would like to
3 say, "This procedure contains some
4 inconsistencies and does not provide the level
5 of detailed guidance given in other" --

6 MEMBER ZIEMER: "Program guidance."

7 MEMBER GIBSON: "Program guidance."

8 CHAIR MUNN: -- "other program
9 documents?"

10 MEMBER GIBSON: Period. I mean,
11 doesn't that say the same thing?

12 MEMBER ZIEMER: I think it's a good
13 suggestion, Mike.

14 CHAIR MUNN: I like it when we make
15 it shorter.

16 Now, finding 7. We'll remove
17 "Section 6.1." We'll remove that.

18 And we will remove Subsections
19 6.2.8 through 6.2.15. We'll just end with
20 "identified." "Many types of information that
21 are likely to be used are not properly

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1 identified." Period.

2 Now the next one I think is one of
3 those where you do want to leave the title
4 there because you want to get the point across
5 that this is a federal regulation, not just
6 another procedure.

7 MEMBER ZIEMER: Do we need, though,
8 the title and part number?

9 CHAIR MUNN: We don't necessarily
10 need --

11 MEMBER ZIEMER: Can we say it's
12 prescribed in the U.S. Code of Federal
13 Regulations?

14 CHAIR MUNN: "Required by the Code
15 of Federal Regulations" is fine.

16 MR. MARSCHKE: The Code of Federal
17 Regs is a big document.

18 (Laughter.)

19 MEMBER ZIEMER: Well, I understand
20 that.

21 MS. LIN: Actually, I think if you

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1 can hold up on that, I'm checking with the
2 guidance tracking office, if you can hold on.

3 MEMBER ZIEMER: Well, if we do, we
4 can put in parentheses "Title 42, Part 82."

5 MS. LIN: For the dose
6 reconstruction guidelines, something like
7 that. As of now, we agree that the title and
8 the part number should be kept in. I'll be
9 happy to --

10 CHAIR MUNN: Okay.

11 MEMBER ZIEMER: Shall we say, "As
12 prescribed in Title 42 of the Code of Federal
13 Regulations"?

14 CHAIR MUNN: Yes. Well, that's the
15 way you would prefer to have that, the way it
16 was originally?

17 MS. LIN: Right.

18 MEMBER ZIEMER: I think she is
19 saying we can leave out the part number maybe,
20 right?

21 MS. LIN: Oh, no. No. We will

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1 keep the part number. So the entire citation
2 of it, as of now, Title 42, Part 82, Code of
3 Federal Regulation.

4 MR. MARSCHKE: You want not
5 "regulations," but "regulation?"

6 DR. OSTROW: No, it's "regulation."

7 MS. LIN: It's "regulations."

8 CHAIR MUNN: So there's no s?

9 MS. LIN: No, there is.

10 MEMBER ZIEMER: No, there is. Code
11 of Federal Regulations; I think it's plural.

12 CHAIR MUNN: I thought so, too.
13 There's certainly more than one.

14 MR. MARSCHKE: We're streamlining
15 the government.

16 CHAIR MUNN: I would put it back
17 the way it was.

18 No. 9, "The procedure does not make
19 it clear whether the worst-case assumptions
20 are used for efficiency or used because of
21 unknowns."

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1 MEMBER ZIEMER: Oh, okay, that's
2 better, I think. I didn't know what that
3 meant, "Are used."

4 CHAIR MUNN: Do you use the worst-
5 case assumption for -- to increase efficiency
6 or because it isn't known?

7 MEMBER ZIEMER: The procedure does
8 not make it clear whether worst-case
9 assumptions are used -- okay, I see it.

10 MR. MARSCHKE: "Efficiency or used
11 because of" --

12 CHAIR MUNN: Well, we can say, "for
13 reasons of efficiency," if you would like.
14 "For reasons of efficiency or used because of
15 unknowns."

16 MR. MARSCHKE: I just don't like
17 the word "unknowns." Unknown what? Unknown --
18 you kind of leave me hanging there.

19 MEMBER ZIEMER: Yes, I didn't know
20 what that meant. As opposed to what?

21 DR. ULSH: Lack of documents, lack

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1 of --

2 MR. MARSCHKE: Lack of parameters,
3 lack of data, lack of --

4 CHAIR MUNN: Lack of data. A lack
5 of information. "The procedure does not make
6 it clear whether worst-case assumptions are
7 used for reasons of efficiency or used because
8 of lack of information."

9 DR. MAURO: I just thought of
10 something. Someplace in the introductory
11 section -- I know we're not going there right
12 now -- but the very fact that -- I don't want
13 to mislead a reader to think that these
14 findings repeat verbatim the findings that
15 were in the original reports. One could
16 incorrectly jump to that conclusion, if you
17 were a layperson reading, going online and
18 reading this. They might think these were the
19 findings. Somewhere they should be apprised
20 of the fact that these findings really are
21 paraphrases.

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1 In other words, I could see someone
2 just looking at these and saying, "Yes, those
3 are the findings," and it would be misleading.

4 MEMBER ZIEMER: That could be
5 handled in the opening sentence just ahead of
6 No. 1 --

7 CHAIR MUNN: Yes.

8 MEMBER ZIEMER: -- where it says,
9 "The Board's contractor reviewed the
10 procedures and made a number of findings that
11 are" --

12 DR. OSTROW: "Which are paraphrased
13 below."

14 MEMBER ZIEMER: "Which are
15 summarized" --

16 CHAIR MUNN: I was going to say,
17 "summarized below."

18 DR. MAURO: "Summarized."

19 MEMBER ZIEMER: "Which are
20 summarized below." It sort of suggests not
21 the detail. Would that do it, do you think?

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1 DR. OSTROW: And then use the same
2 formula in all the write-ups?

3 MS. LIN: So, while we're here, we
4 would also like to make a recommendation about
5 the Board's contractor. We recommend revising
6 that to, "The CDC's contractor assigned to
7 provide technical assistance to the Board."

8 (Laughter.)

9 MEMBER ZIEMER: This is exactly
10 what we're trying to avoid, Jenny.

11 MS. LIN: I know.

12 MEMBER ZIEMER: And I think what we
13 can do, I understand what you're saying
14 because they are technically the Board's
15 contractor. Suppose we say something like,
16 "The contractor that the Board uses?"

17 MS. LIN: Or even just adding a
18 footnote would be sufficient. If you just
19 say, "The Board's contractor" and had a
20 footnote there --

21 MEMBER ZIEMER: If it's footnoted,

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1 because that's what we're trying to -

2 MS. LIN: I mean, our concern is
3 that this document specifically provides to
4 the public --

5 MEMBER ZIEMER: Yes, understood.
6 Understood.

7 MR. MARSCHKE: Do you want to state
8 it?

9 CHAIR MUNN: We've already
10 footnoted what DCAS is, as well as what OCAS
11 stands for. So we can certainly --

12 MEMBER ZIEMER: Yes, how about if
13 we footnoted that? What's the terminology
14 that they like?

15 MS. LIN: "The CDC contractor
16 assigned to provide technical assistance to
17 the Board."

18 MEMBER ZIEMER: Okay. "The
19 contractor assigned by the Centers for Disease
20 Control."

21 MR. MARSCHKE: Do you want to add

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1 "Prevention?"

2 CHAIR MUNN: Do we need to put the
3 entire "Centers for Disease Control" in
4 anything else they do in here?

5 "The contractor assigned by the
6 Centers for Disease Control" and what?

7 DR. OSTROW: "Prevention."

8 MEMBER ZIEMER: "Prevention."

9 CHAIR MUNN: Thank you.

10 MR. MARSCHKE: You could put "SC&A"
11 in there, if you wanted to.

12 CHAIR MUNN: Well, I don't think we
13 need to. You know, we're getting back into
14 what we were trying to avoid by making a
15 separate paragraph upfront that points all
16 this out, which I can read to you, if you need
17 me to read that to you again.

18 MEMBER LEMEN: When you get to the
19 resolution of findings, I have got a comment.

20 CHAIR MUNN: Okay. Hold on just a
21 moment. We're still, I'm still dithering away

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1 here, Richard.

2 MEMBER LEMEN: I agree with John's
3 comments that you need to take all the section
4 stuff out, and I'm glad you're doing that.

5 CHAIR MUNN: Yes, we're doing that.

6 Now that introductory paragraph
7 actually doesn't say -- yes, it does. The
8 introductory paragraph -- it's not a
9 paragraph; it's three paragraphs.

10 The introductory section says,
11 "Under the Energy Employees Occupational
12 Illness Compensation Act of 2000, atomic
13 weapons workers who developed cancer may be
14 compensated if it can be determined that their
15 radiation dose from working with nuclear
16 materials was more likely than not to have
17 caused the cancer. The Department of Health
18 and Human Services was given the
19 responsibility to establish ways to determine
20 radiation doses for people who had worked for
21 employers covered by the law. This so-called

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1 'dose reconstruction' is the requirement for
2 individuals with cancer who apply for
3 compensation under the Act.

4 "The Act also established an
5 independent body known as the Advisory Board
6 on Radiation and Worker Health to evaluate the
7 scientific validity of the methods used for
8 dose reconstruction. In carrying out this
9 responsibility, the Board conducts technical
10 reviews" -- bolded -- "of the various guidance
11 documents that pertain to dose reconstruction.

12 The Board utilizes the services of a
13 technical support contractor, S. Cohen &
14 Associates (SC&A), to assist in the review
15 process of these guidance documents. The
16 reviews are intended not only to assess the
17 scientific and technical quality of the
18 methods used in dose reconstruction, but also
19 to identify any deficiencies that could have a
20 negative effect on the results of the dose
21 reconstruction process.

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1 "When the technical reviews are
2 complete and all deficiencies have been
3 resolved, a brief summary of what has
4 transpired in the resolution process is
5 prepared for Board approval. The report is
6 subsequently added to the Advisory Board's
7 permanent archives. These summary reports are
8 maintained in electronic format at" --
9 wherever we're going to address it -- "and
10 include the individual procedure reviews
11 listed below. More details may be found in
12 the technical documents themselves."

13 Then there's a list of completed
14 NIOSH radiation procedures listed
15 alphabetically by title, which consists
16 currently of OTIB-3, Savannah River Site
17 Tritium Doses.

18 So our concerns with respect to
19 SC&A and identifying them as contributors I
20 think is addressed there.

21 MEMBER ZIEMER: Well, if that's the

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1 case, I think in that first sentence just
2 before the findings we probably don't have to
3 say, "the Board's contractor." Just say, "the
4 technical support contractor." Then that
5 doesn't sort of -- I think they are concerned
6 about who owns the contractor. That's my
7 contractor, you know.

8 (Laughter.)

9 Or go to the highest bidder.

10 (Laughter.)

11 MR. MARSCHKE: We can give it as a
12 footnote?

13 MS. LIN: I think so.

14 CHAIR MUNN: Is that because of the
15 contractor --

16 MEMBER ZIEMER: Well, I was going
17 to ask Jenny, the other thing doesn't identify
18 the Centers for Disease Control.

19 DR. MAURO: Yes, there's a
20 distinction between you and us.

21 MS. LIN: How do you plan to post

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1 the introduction together with the summary? I
2 mean, are they going to be posted together or
3 as one document?

4 CHAIR MUNN: Yes, that's what I was
5 just saying.

6 MEMBER ZIEMER: No, there's one
7 document.

8 CHAIR MUNN: We will be working to
9 identify where on our website this is going to
10 go. It's going to go somewhere in with all of
11 the technical documents, and it will be an
12 archive. What I just read will be the first
13 thing people see when they bring it up.

14 MS. LIN: On the website or on the
15 document?

16 CHAIR MUNN: On the website.

17 MS. LIN: Okay.

18 CHAIR MUNN: When they click on the
19 document, they will have those three
20 paragraphs in front of them. Below that will
21 be the index that they will click on in order

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1 to pull one of these up.

2 MS. LIN: If that's the case, I
3 would recommend keeping the footnote because,
4 obviously, the introduction isn't part of the
5 same document that they will be reading. So I
6 think it should be saved in three places.

7 CHAIR MUNN: Okay, we'll keep it
8 there.

9 We were down to --

10 MEMBER ZIEMER: I do have one other
11 question before -- for the staff. We talked
12 earlier on No. 5 about probability of
13 causation, and one of the things we bumped
14 into in the earlier one, even the tritium
15 document, we said, well, people may not even
16 know what tritium is. So we had a little
17 section explaining that.

18 And then there's something in here
19 in your introduction that talks about the
20 process, and so on. But I don't recall if it
21 talked about probability of causation.

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1 CHAIR MUNN: Yes. It said it
2 didn't -- well, hold on.

3 The words "probability of
4 causation" do not appear, as I recall. It
5 says that, "The Department of Health and Human
6 Services was given the responsibility to
7 establish ways to determine radiation doses
8 for people who have worked for employers
9 covered by the law. This so-called 'dose
10 reconstruction' is the requirement" -- whoa,
11 whoa, back, back.

12 The first sentence, under EEOICPA
13 of 2000, "atomic weapons workers who developed
14 cancer may be compensated if it can be
15 determined that their radiation dose from
16 working with nuclear materials was more likely
17 than not to have caused the cancer. The
18 Department of Health and Human Services was
19 given the responsibility to establish ways to
20 determine radiation doses for people who have
21 worked for employers covered by the law. This

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1 so-called 'dose reconstruction' is a
2 requirement for individuals with cancer who
3 apply for compensation under the Act."

4 It does not specifically say
5 "probability of causation."

6 MEMBER ZIEMER: But then finding 5,
7 then we have a concept in reduced --

8 CHAIR MUNN: Right.

9 MEMBER ZIEMER: -- which is
10 undefined at this point. But if we could link
11 it to that, link it to -- and maybe we don't
12 even use the words here. Maybe we say -- what
13 words were used there? The words were? Is it
14 "the likelihood?"

15 CHAIR MUNN: "Are usually more
16 likely than not."

17 MEMBER ZIEMER: "More likely than
18 not."

19 MR. KATZ: I believe it says, "at
20 least as likely as not." It's not "more
21 likely than not."

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1 MEMBER ZIEMER: "At least as" --

2 MR. HINNEFELD: "At least as likely
3 as not."

4 MEMBER ZIEMER: What if you said in
5 No. 5, on top of the head now -- I haven't
6 thought about this -- "The guidance is limited
7 regarding conducting dose assessments for
8 determining likelihood of" --

9 DR. MAURO: Don't use lingo. Just
10 "the likelihood of the radiation responsible"
11 or something like that.

12 MEMBER ZIEMER: Well, I was trying
13 to link it to what was said in the
14 introduction. In other words, either that or
15 we say --

16 MR. KATZ: I think it would stand
17 alone here. I wouldn't worry about it.
18 Because then you're assuming that they'll go
19 back to this. I would just make it stand
20 alone --

21 CHAIR MUNN: I think you are right.

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1 MR. KATZ: -- as clearly as
2 possible.

3 CHAIR MUNN: And actually,
4 probability of causation is, you know, many
5 people think that is an oxymoron to begin
6 with.

7 MEMBER ZIEMER: Well, what if you
8 said, "potentially high or low likelihood of
9 causing cancer?"

10 MR. KATZ: Yes.

11 DR. MAURO: Yes, regular words.

12 CHAIR MUNN: That's what it says.
13 "Guidance provided in Section 6.5" -- no, take
14 out the sections --

15 MEMBER ZIEMER: Or maybe you don't
16 even say high or low, just potential
17 likelihood or something.

18 DR. MAURO: Yes. That's good, too.

19 CHAIR MUNN: "Guidance provided is
20 limited on how to conduct dose assessments for
21 the potential likelihood of causing cancer."

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1 MEMBER ZIEMER: Or "potential
2 determination of the likelihood," right?

3 DR. MAURO: Well, I would get rid
4 of the word "potential." Just "determination
5 of the likelihood."

6 CHAIR MUNN: Yes. Yes.

7 MEMBER ZIEMER: "The likelihood." I
8 like that.

9 DR. OSTROW: "The likelihood of
10 causing cancer."

11 MEMBER ZIEMER: On the first one,
12 we did, Dick Lemen was real good at the
13 wording.

14 Dick, are you still with us?

15 CHAIR MUNN: Yes, he said he --

16 MEMBER ZIEMER: Are you tracking
17 this?

18 CHAIR MUNN: He said he had some
19 comments.

20 MEMBER ZIEMER: Yes.

21 MEMBER LEMEN: I was just waiting

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1 for resolution on the findings.

2 MEMBER ZIEMER: Seeing what we have
3 done so far, does this look good to you?

4 MEMBER LEMEN: Yes, I'm happy with
5 it so far. I'm glad we took the numbers out
6 and made it more specific.

7 But I do have some ideas about the
8 resolution of the findings area, that they get
9 simplified.

10 CHAIR MUNN: Okay. I think we had
11 gotten down to No. 10. No. 10, "Procedure
12 provides no guidance on calculating the
13 uncertainty of dose estimate." And I think
14 that's pretty straightforward.

15 Finding 11, "An extensive list of
16 potential sources of data is provided, but the
17 conditions for using them" -- we can take out
18 the parenthetical phrase -- "limits their
19 value."

20 Then, resolution of findings, "In
21 response to the findings" --

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1 MEMBER LEMEN: This is Dick. Can I
2 make a comment here?

3 CHAIR MUNN: You certainly may.

4 MEMBER LEMEN: I don't know why we
5 have to say 1, 2, 3. Could we just say, under
6 resolution of findings, that "In response to
7 the findings identified above, the Advisory
8 Board agreed with all findings and, thus,
9 recognized that this procedure has been
10 replaced with more specific procedures
11 elsewhere, and therefore, closes all issues
12 associated with this procedure," "cancelling
13 this procedure," or something like that?

14 MEMBER ZIEMER: I think it's a good
15 point that we don't have to go through the
16 numbers here, particularly agreed with them
17 all.

18 MEMBER LEMEN: Just make it very
19 simple. Just say, "We have agreed with them
20 all." I mean we can wordsmith it, but,
21 basically, say that the Board agrees with it

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1 all, and because there's other procedures that
2 have been recognized, we're cancelling this
3 procedure.

4 MEMBER ZIEMER: Actually, I guess
5 it is still NIOSH that agrees with the
6 findings, right?

7 MEMBER LEMEN: Well, NIOSH then.

8 MEMBER ZIEMER: Yes.

9 CHAIR MUNN: And then we can say,
10 "The Advisory Board" --

11 MEMBER ZIEMER: And then the Board
12 --

13 CHAIR MUNN: The last sentence,
14 then, would just follow. "The Advisory Board
15 recognized" --

16 MEMBER LEMEN: I would change the
17 tense on that then. "The Advisory Board
18 recognizes that this procedure" -- instead of
19 "was replaced" -- "has been replaced with more
20 specific procedures elsewhere and, thus" -- do
21 we recommend or do we say, "thus, closes all

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1 issues associated with this procedure?"

2 CHAIR MUNN: I think we just say
3 just "closes."

4 MEMBER LEMEN: That's fine.

5 MEMBER ZIEMER: Or "closed all" --

6 CHAIR MUNN: "With more specific
7 procedures elsewhere," period.

8 MEMBER LEMEN: Fine.

9 MEMBER ZIEMER: The question, the
10 new procedures have not yet been reviewed.

11 MR. HINNEFELD: I don't know.
12 Let's see.

13 CHAIR MUNN: No.

14 MEMBER ZIEMER: Because, if not,
15 there's a loose end here that we don't know,
16 in a sense, what they are. And if so, we
17 could add, "The new, revised procedures will
18 be reviewed separately" or something.

19 MR. HINNEFELD: I think it's going
20 to be a mixture. Some of them have been. I
21 won't guarantee that they all have been.

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1 MEMBER LEMEN: In theory, you have
2 to put that in, quite frankly, but --

3 CHAIR MUNN: Well, remember, we
4 here around this table are not going to review
5 all procedures.

6 MEMBER LEMEN: Right.

7 CHAIR MUNN: We are only going to
8 review certain procedures under any
9 circumstance.

10 MEMBER ZIEMER: Right.

11 MEMBER LEMEN: I think the point
12 around this table is that we have closed this
13 out.

14 CHAIR MUNN: Yes. So this closes
15 all the issues associated with it, from my
16 view.

17 MEMBER LEMEN: And we don't really
18 need to say anything further than that.

19 CHAIR MUNN: Then I --

20 MEMBER GIBSON: So how are we
21 certain that the issues have been addressed if

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1 we haven't reviewed them in other procedures?

2 MR. MARSCHKE: Well, the --

3 MEMBER LEMEN: We haven't said they
4 have been addressed. We have said they have
5 been replaced with more specific procedures.

6 MR. MARSCHKE: The way we have been
7 working, the Subcommittee has given SC&A the
8 authority to basically track the procedures,
9 track the findings, even if the findings go to
10 another procedure. So, you know, if we make a
11 finding on a procedure A, and NIOSH takes the
12 information from A and basically cancels A and
13 puts that information in procedure B, the
14 Subcommittee has given us the authority to go
15 to procedure B and make sure that that
16 procedure addresses the original issue, even
17 though that original issue was not procedure
18 A. We don't have the authority to review all
19 of the second procedure, but we do have the
20 authority to track the issue to its closure.

21 DR. MAURO: I've got a question.

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1 When we say an issue is closed, I guess, does
2 that mean not transfers or not in abeyance?
3 It's closed?

4 The reason it's closed is the issue
5 is closed because we have followed it to its
6 logical conclusion, wherever that brought us,
7 and agreed with the solution. And it is
8 genuinely closed.

9 MR. MARSCHKE: What you say is true
10 except for one thing. Basically, it can
11 either be closed or in abeyance.

12 MEMBER ZIEMER: But my point was
13 this thing currently says we've closed all
14 issues associated with this document that's
15 disappearing. And I'm really asking you if
16 that's the case. If not, if those issues have
17 just moved into a new document --

18 MR. MARSCHKE: In theory, they
19 should be closed. In theory, they should be
20 closed because the issues have been identified
21 as being closed. If it was moved to another

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1 document and still was an issue, it should
2 still be carried through as an open issue or
3 an issue that's in progress.

4 Now I'm not familiar enough with
5 PR-003 to be specific on PR-003, but this is
6 the philosophy that we have been operating
7 under, is that we track the issue until it's
8 closed. Whether it's closed in the original
9 procedure or in a subsequent procedure, we
10 still track it.

11 MEMBER ZIEMER: I understand that --

12 MEMBER GIBSON: I guess my issue,
13 then, is isn't it maybe premature of this
14 Subcommittee to put this out to the Board
15 until we know that that has been done?

16 MR. MARSCHKE: Well, in theory, if
17 they are all shown as being closed, then it
18 has been done. We can double-check it and
19 make sure, but that's the --

20 MEMBER GIBSON: That's a slippery
21 slope for me --

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1 DR. MAURO: Yes, I think we have
2 to --

3 MEMBER GIBSON: -- when you have
4 things in theory.

5 DR. MAURO: -- be careful of the
6 procedures that we prepare these two-pagers
7 for. What I just heard is that if it is
8 designated as closed, that issue has been
9 resolved to everyone's satisfaction. If it's
10 in abeyance, it's been resolved to everyone's
11 satisfaction, except we really haven't seen it
12 written up. But we have seen, and we have
13 agreed, and it's on the record that we have,
14 in fact, addressed and resolved this issue.
15 It just hasn't made it into a procedure
16 anywhere.

17 So I would tend to argue that any
18 issue that is either designated as closed or
19 in abeyance, you can prepare one of these two-
20 pagers and feel confident that everyone is
21 satisfied that the technical issue has been

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1 resolved.

2 MR. HINNEFELD: If it would help, I
3 found Procedure 3 in our archive. It was
4 written in 2002. Okay, it's before I worked
5 for the government, and I think about the time
6 -- it's actually dated before the contract was
7 let to ORAU. This was prepared by a handful
8 of OCAS people who were there at the time.
9 And it describes, the table of contents is
10 just the process. One is claim receipt.
11 Evaluate available data/information. Claimant
12 interview. Document claimant interview.
13 Provide interview report to claimant. Claim
14 evaluation. Internal dose calculation
15 methodology. External dose calculation
16 methodology.

17 It's just sort of a road map of
18 what is going to happen to claim that was
19 written in 2002, before we really knew how we
20 were going to do anything specific. All the
21 specifics for all these things are written

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1 somewhere else.

2 MEMBER ZIEMER: Okay, but not
3 necessarily in one document?

4 MR. HINNEFELD: No, not in one
5 document.

6 MEMBER ZIEMER: The implication
7 here is that there is a new document that
8 replaces this.

9 CHAIR MUNN: Let me read my wording
10 that I have mashed around here, under
11 resolution of findings.

12 Dick, see if this meets the
13 criterion you would like to see.

14 "In response to the findings
15 identified above, NIOSH agreed with all
16 findings, cancelled this procedure, and
17 provided improved guidance. The Advisory
18 Board recognized that this procedure has been
19 replaced with more specific guidance
20 elsewhere. This closes all issues associated
21 with it."

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1 MEMBER LEMEN: I like it.

2 CHAIR MUNN: Will that do?

3 MEMBER LEMEN: I like it.

4 CHAIR MUNN: Okay. Thank you.

5 That gets rid of all the steps in
6 the middle.

7 MEMBER ZIEMER: So it says, "This
8 closes all issues associated with this
9 document."

10 CHAIR MUNN: I just said, "with
11 it." Because we had said, "The Advisory Board
12 recognizes that this procedure has been
13 replaced with more specific guidance
14 elsewhere. This closes all issues associated
15 with it."

16 Okay, I think I can provide you
17 with a cleaned-up copy before very long.

18 MR. KATZ: Can we go back to
19 finding 5, which I really think lost the
20 point? I've rewritten it, if I am correct.

21 CHAIR MUNN: All right.

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1 MR. KATZ: It says right now, what
2 you have up there, "Guidance provided and
3 limited on how to conduct dose assessments for
4 determining the likelihood of causing cancer."

5 That really misses the point
6 completely. The finding was that for very
7 high or very low, in other words, efficiency
8 process cases, that the guidance given is
9 limited on how to do that. So it completely
10 misses, actually, the substance of the
11 finding.

12 MEMBER ZIEMER: Oh, it is the
13 high/low --

14 MR. KATZ: Yes, it's the high/low.
15 So let me tell you what I wrote as a
16 possibility.

17 "Limited guidance is provided on
18 methods to be used for dose reconstruction
19 cases in which the likelihood that radiation
20 caused the cancer is either very high or very
21 low."

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1 DR. OSTROW: That is a lot clearer.

2 MR. KATZ: Do you want me to read
3 it more slowly?

4 (Laughter.)

5 MR. MARSCHKE: You think I'm a
6 typist or something.

7 (Laughter.)

8 MR. KATZ: "Limited guidance is
9 provided" --

10 MR. MARSCHKE: Ok, I got that.

11 MR. KATZ: -- "on methods to be
12 used for dose reconstruction cases in which
13 the likelihood that the radiation caused the
14 cancer" --

15 MEMBER ZIEMER: Ted, where it says,
16 "limited guidance," the implication is that it
17 is inadequate guidance, right?

18 MR. KATZ: Yes. That's actually
19 -- yes.

20 MEMBER ZIEMER: Limited guidance in
21 itself is not insufficient --

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1 MR. KATZ: Insufficient guidance
2 would be a better way to put it, yes.

3 MEMBER ZIEMER: I think that is the
4 thrust of what they mean.

5 MR. KATZ: I agree.

6 MEMBER ZIEMER: "Insufficient
7 guidance is provided."

8 MR. KATZ: "The likelihood that the
9 radiation caused the cancer is either very
10 high or very low."

11 DR. MAURO: And don't forget the
12 "is" after "insufficient guidance is
13 provided."

14 CHAIR MUNN: "Insufficient" or
15 "inadequate," which?

16 MR. KATZ: "Insufficient guidance
17 is provided."

18 DR. MAURO: The wrong place. Yes,
19 now you've got it.

20 CHAIR MUNN: Can we say, "This
21 procedure provides insufficient" --

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1 MR. KATZ: Insufficient guidance?

2 Yes.

3 CHAIR MUNN: -- "guidance?"

4 MR. KATZ: Yes.

5 CHAIR MUNN: And make it --

6 DR. MAURO: Stu said something very
7 important before.

8 MR. HINNEFELD: The first time,
9 right?

10 (Laughter.)

11 DR. MAURO: Do we have in the
12 beginning -- I mean, really, what we have
13 here, if this is a procedure that was really
14 an overview of a process which has matured
15 dramatically over the years and, as a result,
16 is really no longer needed because, you
17 know --

18 MR. HINNEFELD: Right.

19 DR. MAURO: Could we have some kind
20 of introductory spiel that sort of sets the
21 stage for that? I forgot how we opened this

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1 up right in the beginning.

2 DR. OSTROW: No, there isn't any.

3 DR. MAURO: There's nothing like
4 that?

5 DR. OSTROW: No.

6 DR. MAURO: That's good
7 perspective. This is a procedure that was
8 originally prepared early in the program, you
9 know, that kind of blah-blah, blah-blah, blah-
10 blah. I think we could do something like
11 that.

12 CHAIR MUNN: I'm getting around
13 what places go where.

14 "This procedure provides
15 insufficient guidance on methods to be used
16 for dose reconstruction cases where the
17 likelihood is either very high or very low
18 that radiation caused the cancer."

19 Is there any objection to moving
20 that last phrase back up in front of
21 "radiation?"

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1 MEMBER ZIEMER: You're trying to
2 get the likelihood high and low together?

3 CHAIR MUNN: Yes, right.

4 " That the likelihood is either very
5 high or very low that radiation caused the
6 cancer." Because the "very high or very low"
7 hung up on ending the sentence this time.

8 MEMBER ZIEMER: Yes.

9 In response to your comment, John,
10 I suppose at the beginning of this in the
11 overview you could say something like, "This
12 procedure was developed early in the OCAS
13 program for the purpose of administering the
14 process for dose reconstruction for claimants"
15 or something like that.

16 DR. MAURO: Yes.

17 MEMBER ZIEMER: You know, you're
18 saying this -- well, I don't know.

19 CHAIR MUNN: Well, I'll tell you
20 what, folks, I think most of us have physical
21 requirements that are keeping our brains from

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1 functioning very well at this moment.

2 Let's take a 15-minute break and be
3 back at 15 minutes from now.

4 (Whereupon, the above-entitled
5 matter went off the record at 3:37 p.m. and
6 went back on the record at 3:50 p.m.)

7 MR. KATZ: Do I have you with us,
8 Dick and Mark?

9 MEMBER LEMEN: You do have me with
10 you.

11 Can you hear me?

12 MR. KATZ: Yes, thank you.

13 CHAIR MUNN: Yes.

14 All right, one last thing before we
15 leave this procedure and go on to the next
16 one. Let's read what I have written now for
17 finding No. 5.

18 "This procedure provides
19 insufficient guidance for methods to be used
20 for dose reconstruction cases where the
21 likelihood is either very high or very low

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1 that radiation has caused the cancer."

2 Is that okay with everybody?

3 If you, in retrospect, suddenly
4 discover that you can't stand that, please let
5 me know and we are going to have one last
6 round of these procedures. I'll send them out
7 so that everybody is happy with them before we
8 go to press in Santa Fe.

9 Now the next document --

10 MR. KATZ: Can I just understand,
11 Wanda?

12 CHAIR MUNN: Yes.

13 MR. KATZ: So you're going to re-
14 review this that you just went through?

15 CHAIR MUNN: Well, I'm just going
16 to send it out. I'm going to clean up the
17 copy and send it out to everybody on the
18 Subcommittee to both assure that we have,
19 indeed, done what we said we were doing.

20 DR. OSTROW: Excuse me, Wanda.
21 Have you been keeping track for this document

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1 of all the changes that we made?

2 CHAIR MUNN: Well, I have that
3 terrible-looking thing that you just saw up
4 there. Yes, I have that.

5 DR. OSTROW: Of what we have been
6 discussing today because Steve has been typing
7 it.

8 MR. MARSCHKE: I can send it to
9 Wanda. I can send what -- I don't have
10 everything because I did not --

11 CHAIR MUNN: I have it.

12 DR. OSTROW: You do have it? All
13 right. Okay.

14 CHAIR MUNN: Oh, yes. Yes.

15 DR. OSTROW: Good.

16 CHAIR MUNN: That's what I was
17 doing over here.

18 DR. OSTROW: You type well then.

19 CHAIR MUNN: Once upon a time, I
20 made my living that way.

21 Now I have completely lost the

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1 files that I want. So just a moment.

2 The next one that we had was TIB-8,
3 use of ICRP-66 to calculate respiratory track
4 doses.

5 Do we all have it up?

6 Are you with us, Dick? Do you have
7 it up?

8 (No response.)

9 Let's just sit still for a minute
10 and let everybody who hasn't read through it
11 read through.

12 (Pause.)

13 All right. I have added one thing
14 that I did not have on what you're looking at.

15 That's when we first say, in the second
16 paragraph, when we introduce International
17 Commission on Radiological Protection, I have
18 bolded that, which I think is appropriate,
19 given the fact that we refer to ICRP-66 in the
20 title, but don't mention it until the end of
21 the second paragraph. And as per our request

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1 earlier, I placed the full name prior to the
2 parenthetical acronym.

3 Also, under "summary of findings
4 resulting from the technical review," I have
5 replaced "SC&A" with the "technical
6 contractor's review of this procedure produced
7 three findings."

8 Now down in "resolution of the
9 findings," it's my instinct to write out
10 "gastrointestinal" in item No. 1 rather than
11 "GI." I know that's not the title of the
12 ICRP, but --

13 MEMBER ZIEMER: Where are you?

14 CHAIR MUNN: Under "resolution of
15 findings," No. 1.

16 MEMBER ZIEMER: Oh.

17 CHAIR MUNN: "Evaluated the human
18 GI tract model." It's my instinct to want to
19 write out "gastrointestinal."

20 MEMBER ZIEMER: I agree with that,
21 but I have some comments before we get there,

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1 if we can go back.

2 CHAIR MUNN: Yes.

3 MEMBER ZIEMER: Well, back in the
4 early paragraphs -- can you back that up,
5 Steve, also?

6 CHAIR MUNN: All right.

7 MEMBER ZIEMER: Get it on your
8 screen here.

9 CHAIR MUNN: The first one?

10 MEMBER ZIEMER: Okay. Now one
11 thing, I'm focusing on the third paragraph.
12 Let me preface this by telling you that, when
13 I was lecturing on lung models to students,
14 and I showed them diagrams of the boxes and
15 the various things, finally, a student raised
16 their hand and said, "Well, is the model made
17 of plastic or what?"

18 (Laughter.)

19 And then I realized that when you
20 talk about models to people, they're thinking
21 about airplanes and cars and some 28-year-old

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1 guys are thinking about women.

2 (Laughter.)

3 So I'm wondering if it would help,
4 under ICRP Publication 66, "Human Respiratory
5 Tract Model," in the next sentence is a
6 document provided by the ICRP that provides
7 "mathematical models."

8 CHAIR MUNN: Absolutely.

9 MR. MARSCHKE: My suggestion is,
10 basically, to just get rid of everything that
11 I highlighted and just say, basically, "the
12 document developed by the ICRP that provides
13 guidance on how to calculate doses to the
14 respiratory tract," because you've got a lot
15 of respiratory tracts in there. You've got
16 the --

17 MEMBER ZIEMER: "Mathematical
18 model" and then delete all the rest of that?
19 Yes.

20 MR. MARSCHKE: I would just start
21 with "provides guidance." I would just go

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1 from, just say, "provides guidance" or
2 "provides mathematical models on how to
3 calculate the respiratory," But, you know, I
4 think there's a little duplication there.

5 CHAIR MUNN: You can go from
6 "mathematical models" on how to calculate,
7 yes, you can take that out. But I do think
8 "mathematical models" needs to be in there
9 because we do refer to models several places
10 following that. We talk about models a lot,
11 and, clearly, "mathematical models" needs to
12 be in there.

13 MR. KATZ: So where you just did
14 it, but, Wanda, in that place, I think
15 "guidance" is much clearer than saying
16 "mathematical models" in paragraph 3.

17 CHAIR MUNN: Well --

18 MR. KATZ: "Mathematical models" is
19 just --

20 MEMBER ZIEMER: Well, it's kind of
21 redundant, but somewhere we've got to point

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1 out that we're talking about mathematical
2 models.

3 MR. KATZ: Yes, we'll do that, but
4 --

5 CHAIR MUNN: What is your first
6 model?

7 MR. MARSCHKE: I think either that
8 or down here, where basically this is where
9 models -- where does models appear first?

10 CHAIR MUNN: Well, I thought that
11 was the first time it appeared in No. 3.
12 Then, below that, it refers to it many times.

13 MEMBER ZIEMER: I'm thinking maybe
14 the last sentence, ICRP, "dose reconstructors
15 use mathematical models like ICRP." You can
16 do it there. It's a little bit later, but
17 that would do it.

18 I think, Ted, you're trying to
19 prevent the redundancy of using math models
20 twice in the previous sentence, right?

21 MR. KATZ: Yes. Also, it's just

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1 much easier, then, to understand a sentence
2 with "guidance" than it is "mathematical
3 models." It's just that is going to miss them
4 completely. Do you just want to use
5 "mathematical models" -- well, that --

6 CHAIR MUNN: Okay. Then what I
7 have is a sentence that reads, "ICRP
8 Publication 66, Human Respiratory Tract Model
9 for Radiological Protection. ICRP-66 is a
10 document developed by the ICRP that provides
11 guidance on how to calculate dose to the
12 respiratory tract after breathing in airborne
13 radionuclides." Right?

14 MEMBER ZIEMER: Right.

15 CHAIR MUNN: Then the following
16 sentence says, "Dose reconstructors use
17 mathematical models like ICRP-66 in order to
18 accurately estimate the dose received by an
19 organ."

20 MR. KATZ: Yes, but I think you
21 could actually get rid of "mathematical

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1 models" everywhere in here. But I think you
2 could just stick with "guidance," not get into
3 talking about mathematical models, which is,
4 again, it's a totally alien construct for --

5 MEMBER ZIEMER: Do we need the
6 title of the --

7 DR. MAURO: I was going to say you
8 don't need that, either.

9 MR. KATZ: Okay.

10 DR. MAURO: Explain to a 12-year-
11 old.

12 MR. KATZ: Yes.

13 MEMBER ZIEMER: Okay. So don't
14 give the title of ICRP-66 then?

15 CHAIR MUNN: I don't think you can
16 avoid that. The title of the document is used
17 for ICRP-66.

18 DR. MAURO: Oh, I see, the title --
19 is that all right?

20 MR. KATZ: Right. I mean it's in
21 the title. You don't have to reiterate

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1 "model" anywhere beyond -- it's in the title.

2 You're stuck with it in the title.

3 MR. MARSCHKE: You have to have it
4 in the title.

5 MR. KATZ: Yes.

6 MR. MARSCHKE: And I think you have
7 to -- title of ICRP-66.

8 MR. KATZ: Yes. Oh, no, I'm not
9 quibbling that. I think you have it in the
10 title, but you don't have to talk about models
11 in here. You can talk about guidance and
12 never talk about models because, again, you're
13 never going to convey to a normal person what
14 you mean. "Mathematical model" doesn't mean
15 any more to them than "model."

16 DR. OSTROW: Get rid of that entire
17 sentence. Why do we need that sentence?
18 "Provides guidance on how to calculate dose to
19 the respiratory tract after breathing airborne
20 radionuclides." You don't need that last
21 sentence of dose reconstructors.

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1 CHAIR MUNN: Well, I don't know.
2 The whole point is we are telling -- well, we
3 have actually said earlier that the people who
4 do dose reconstruction "are required by
5 regulations that govern their work to use the
6 best available science to perform dose
7 reconstruction. This includes guidance
8 provided by the International Commission on
9 Radiological Protection." We have said that.

10 MEMBER ZIEMER: Yes, you have said
11 that, that the people who do it, who do dose
12 reconstruction use that.

13 CHAIR MUNN: So I'm hearing remove
14 the last sentence, right? "Dose
15 reconstructors use mathematical models." We're
16 taking that out?

17 Okay with you, Dick?

18 MEMBER LEMEN: Good idea.

19 MEMBER ZIEMER: Then it says,
20 "using models in assumptions," you would just
21 say, "using ICRP-66 guidance" or something

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1 like that?

2 MEMBER LEMEN: Can you hear me,
3 Wanda?

4 CHAIR MUNN: Yes, I did.

5 MEMBER LEMEN: Okay.

6 CHAIR MUNN: It's okay with you,
7 right?

8 MEMBER LEMEN: Yes.

9 CHAIR MUNN: We can just say,
10 "using the assumptions recommended by
11 ICRP-66." "NIOSH uses the computer code
12 called IMBA" --

13 MR. MARSCHKE: That's not
14 assumptions. That's not assumptions; that's
15 guidance.

16 CHAIR MUNN: Okay. Then "uses the
17 guidance." Change "assumptions" to
18 "guidance?"

19 MEMBER ZIEMER: Well, guess what?
20 We actually have a dangling participle in
21 there, finally.

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1 (Laughter.)

2 MR. KATZ: It feels good, doesn't
3 it?

4 (Laughter.)

5 MR. HINNEFELD: We had to throw it
6 in just for you, Paul.

7 MEMBER ZIEMER: "Using the
8 guidance," that sentence literally says the
9 organ uses the guidance.

10 CHAIR MUNN: Yes, it does.

11 MEMBER ZIEMER: Yes, it does.

12 CHAIR MUNN: We can change "using"
13 to "under."

14 MEMBER ZIEMER: That would work.

15 CHAIR MUNN: "In order to
16 facilitate the calculation of the internal
17 doses to a particular organ under the guidance
18 recommended in ICRP-66, NIOSH uses the
19 computer code called IMBA, Integrated Models
20 for Bioassay Analysis. The specific organs to
21 be modeled using IMBA and the assumptions used

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1 in the model used to model doses" --

2 MR. MARSCHKE: Do you want to get
3 rid of all those "models?"

4 CHAIR MUNN: What?

5 MR. MARSCHKE: Do we want to try to
6 get rid of all those "models?"

7 MEMBER ZIEMER: I don't even see
8 why we have to name it IMBA or anything like
9 that. "Uses a computer code."

10 MR. KATZ: I agree with you. They
11 won't care. It's off-putting.

12 MEMBER ZIEMER: Or "NIOSH uses a
13 special computer code."

14 CHAIR MUNN: "Specialized" or
15 "special?"

16 MEMBER ZIEMER: "Specialized."

17 DR. OSTROW: And I would put that
18 at the beginning of the sentence. "NIOSH uses
19 a specialized computer code in order to
20 facilitate the calculation" --

21 MR. KATZ: And it's a computer

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1 program, I think is what people are familiar
2 with in terms of verbiage.

3 MEMBER GIBSON: Let's just put
4 "computer code" instead of "specialized."

5 MR. KATZ: Yes, but "program," not
6 "code."

7 CHAIR MUNN: "Computer program."
8 "NIOSH uses a computer program in order to
9 facilitate the calculation of the internal
10 doses to a particular organ under the guidance
11 recommended in ICRP-66" --

12 MEMBER ZIEMER: Well, now the
13 organs are under the guidance.

14 (Laughter.)

15 How about, "Following ICRP-66
16 guidance, NIOSH uses a computer" -- and there,
17 I think you could say it's a specialized
18 computer program.

19 MEMBER GIBSON: Now my thoughts
20 there, Paul, are people don't trust a program
21 anyway. They know about computer programs,

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1 and they would say, "Oh, a special program?"

2 Well, you know --

3 MEMBER ZIEMER: I don't know.

4 They're doing it by computer. Is that enough?

5 Is that what you mean, Mike?

6 MEMBER GIBSON: Yes.

7 MEMBER ZIEMER: Okay.

8 CHAIR MUNN: "Following the
9 ICRP-66, NIOSH uses a computer program to
10 facilitate the calculation" --

11 MEMBER ZIEMER: Leave the "in
12 order" out.

13 CHAIR MUNN: Yes. "To facilitate
14 the calculation of the internal doses to a
15 particular organ," period. Right?

16 MEMBER ZIEMER: Now the next
17 sentence, again, we can get rid of the "IMBA"
18 and --

19 CHAIR MUNN: The whole thing.

20 MEMBER ZIEMER: -- the modeling.
21 Do we need to mention the table? "The results

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1 for specific organs are provided in a table in
2 the procedure," or something like that, is
3 what you want to say, right?

4 CHAIR MUNN: Yes.

5 MEMBER ZIEMER: "However, not all
6 organs are included" or something. The point
7 is that there's this table of organs, but that
8 not everything is covered.

9 CHAIR MUNN: Yes. "The specific
10 organs" -- let's say, "organs of concern,"
11 okay? Take out "using IMBA." "And the
12 assumptions used" --

13 MEMBER ZIEMER: "To calculate the
14 doses."

15 CHAIR MUNN: "Doses" --

16 MEMBER ZIEMER: "To the organs."

17 MR. KATZ: We don't need to cut out
18 "to the organs?"

19 CHAIR MUNN: We said "organs"
20 before.

21 MR. KATZ: Yes.

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1 CHAIR MUNN: "The specific organs
2 of concern and the assumptions used to
3 calculate the doses to them" --

4 MEMBER ZIEMER: "Are shown in a
5 table in the procedure."

6 CHAIR MUNN: "Are shown in a table
7 in the procedure," yes.

8 MEMBER ZIEMER: However, you can
9 eliminate "it turns out."

10 CHAIR MUNN: I thought that was
11 real folksy myself.

12 (Laughter.)

13 MEMBER ZIEMER: Yes, you betcha.

14 (Laughter.)

15 CHAIR MUNN: Yes, that's what I
16 thought.

17 "Not all organs are" --

18 MEMBER ZIEMER: "Included."

19 MR. KATZ: Or "covered by the
20 guidance."

21 CHAIR MUNN: No. "Not all

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1 organs" -- "However, the dose to all organs
2 cannot be calculated."

3 MEMBER ZIEMER: Well, no, that's
4 not the case.

5 CHAIR MUNN: No.

6 MEMBER ZIEMER: It can be, but you
7 have to do it a different --

8 CHAIR MUNN: Yes.

9 MEMBER ZIEMER: Let's see, Stu, do
10 you remember ICRP-66 simply doesn't include
11 all the organs? That goes back to 66, right?
12 Or is it to the Code itself?

13 MR. HINNEFELD: ICRP-66 -- or what
14 are we talking about, IMBA?

15 MEMBER ZIEMER: Well, not all the
16 organs are covered by IMBA, but is that
17 because there's not a model for all of them in
18 ICRP-66?

19 MR. HINNEFELD: Yes, ICRP-66
20 identifies particular organs and fractions of
21 intake.

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1 MEMBER ZIEMER: Right, and --

2 MR. HINNEFELD: They end up in
3 those organs, and then --

4 MEMBER ZIEMER: And IMBA uses that.

5 MR. HINNEFELD: And IMBA uses that.

6 MEMBER ZIEMER: Right.

7 MR. HINNEFELD: ICRP-66 doesn't
8 include that for --

9 MEMBER ZIEMER: Right.

10 MR. HINNEFELD: -- unless --

11 MEMBER ZIEMER: So that would be
12 the way to handle it. "Not all the organs are
13 included in the ICRP-66 guidance" or
14 something.

15 CHAIR MUNN: Well, they're not
16 included in the table, either, are they?

17 MEMBER ZIEMER: That's why they're
18 not in the table.

19 CHAIR MUNN: "However, not all
20 organs are included in the table." We just
21 have been talking about the table.

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1 MEMBER ZIEMER: Right.

2 CHAIR MUNN: "The specific organs
3 of concern and the assumptions used to
4 calculate the doses to them are shown in a
5 table in the procedure. However, not all
6 organs are listed in the table." Right?

7 MEMBER ZIEMER: Yes, but it's not
8 just the idea that they forgot to put some in.
9 There's a reason. You know, the guidance in
10 the ICRP-66 isn't there supporting it.

11 MR. KATZ: Yes. So Steve had that
12 there. "Not all organs are included in the
13 ICRP-66 guidance."

14 MEMBER ZIEMER: "And thus, do not
15 appear in the table."

16 MR. MARSCHKE: Okay. Do you need
17 to say that?

18 MR. KATZ: I don't think so, but --

19 MEMBER ZIEMER: Well, maybe not.
20 Maybe, "In order to deal with this limitation,
21 surrogate tissue models" -- now there's the

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1 "models" --

2 MR. MARSCHKE: Do you want to get
3 rid of "surrogate?" I mean I wouldn't put
4 "surrogate" and then "that is a substitute."
5 Pick one word. I mean we're trying to get
6 this -- I mean maybe "substitute" is the word
7 that you want to use in here?

8 MS. LIN: Better use "surrogate."
9 We'll have to get terminology that will match
10 what we use in terms of -- "surrogate" or the
11 word "substitute."

12 MR. HINNEFELD: Well,
13 "surrogate" --

14 CHAIR MUNN: What's another word
15 than "surrogate" or "substitute" that will say
16 the same thing?

17 MR. HINNEFELD: We use "surrogate."

18 CHAIR MUNN: I know.

19 DR. OSTROW: Was that a question --

20 MR. MARSCHKE: You could have
21 "stands for" rather than "surrogate." Or

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1 "represent."

2 CHAIR MUNN: "Other representative
3 tissue?" "Other representative tissue" or
4 "other representative organs are used."

5 MEMBER ZIEMER: That would be fine.
6 Yes, that would work because "other
7 substitute tissues or organs are used," and
8 then you say, "The procedure provides guidance
9 on which tissues and organs to use as
10 surrogates." Leave out the rest of that.

11 CHAIR MUNN: Okay. "However, not
12 all organs are included in the ICRP guidance."
13 Period. "In order to deal with this
14 limitation, other representative organs or
15 tissues are used." The procedure and the
16 review are used for what?

17 MEMBER ZIEMER: To provide
18 guidance.

19 CHAIR MUNN: Yes, but hold on.
20 "Are used for dose reconstruction."

21 MEMBER ZIEMER: "Are used" --

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1 CHAIR MUNN: "To calculate doses?"

2 MR. MARSCHKE: "To represent the
3 missing organs."

4 MEMBER ZIEMER: Yes. "Are used to
5 represent the" --

6 CHAIR MUNN: No, I don't think so.

7 MEMBER ZIEMER: No?

8 CHAIR MUNN: No. "Other
9 representative organs or tissues are used" --

10 MEMBER ZIEMER: Oh, yes, we have
11 "representative."

12 MR. MARSCHKE: Or get rid of the
13 first "representative."

14 MR. KATZ: "To calculate the
15 doses," I would say.

16 CHAIR MUNN: "For dose calculation,"
17 right?

18 MR. KATZ: "To calculate the
19 doses."

20 CHAIR MUNN: "To calculate the
21 doses" --

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1 MEMBER ZIEMER: "To calculate doses
2 to the organ" --

3 MR. KATZ: I wouldn't get back into
4 organs. I'm mean, it's implicit in -- I mean,
5 if they start from the beginning of the
6 paragraph, they understand what this means.

7 CHAIR MUNN: Yes. "The procedure
8 under review provides guidance on which
9 tissues and organs" --

10 MEMBER ZIEMER: "The procedure
11 under review provides guidance on which
12 tissues and organs" --

13 MR. KATZ: "Covered by the ICRP-66"
14 --

15 MEMBER ZIEMER: "Can be used as
16 substitutes for the organs." That would work,
17 right?

18 CHAIR MUNN: Do we want to say,
19 "and other programs" or just ICRP-66 only?

20 DR. MAURO: I think it's ICRP-66
21 only.

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1 CHAIR MUNN: Since we're taking
2 IMBA out?

3 MR. MARSCHKE: Are we getting rid
4 of "these models?"

5 CHAIR MUNN: So it reads, "The
6 procedure under review provides guidance on
7 which tissues and organs covered by ICRP-66
8 can be used as surrogates for those organs and
9 tissues that are not specifically" --

10 MEMBER ZIEMER: "Included" or "not
11 specifically" --

12 CHAIR MUNN: "Shown?"

13 MEMBER ZIEMER: We might have to
14 wordsmith it further. I think that's the
15 idea.

16 CHAIR MUNN: "Are not specifically
17 used?"

18 MR. MARSCHKE: We already said
19 they're not covered by ICRP-66. I would end
20 it. Maybe if you end the sentence?

21 MR. KATZ: Yes. Wait. Yes.

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1 MR. MARSCHKE: With "tissue."

2 MR. KATZ: Yes. No, you could end
3 it with "substitutes" actually, and it should
4 say "not covered" instead of "covered."

5 MEMBER ZIEMER: It's "tissues and
6 organs" --

7 MR. KATZ: "Not covered."

8 MEMBER ZIEMER: -- "not covered by
9 ICRP-66" --

10 MR. KATZ: Period. Period.

11 MR. MARSCHKE: No.

12 MEMBER ZIEMER: "Which organs not
13 covered can be used as substitutes."

14 MR. KATZ: Right. "On which tissues
15 and organs" --

16 MR. MARSCHKE: You can't use it as
17 a substitute if it's not there.

18 MEMBER ZIEMER: It's the other way
19 around. Which organs that are covered by it
20 can be used as substitutes to the ones that
21 aren't. You've got it reversed.

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1 MR. KATZ: Yes. Right.

2 MEMBER ZIEMER: Yes.

3 MR. KATZ: Right.

4 MEMBER ZIEMER: Yes, "which organs
5 covered by ICRP" --

6 MR. KATZ: Yes, yes, you're right.

7 MEMBER ZIEMER: "Can be substituted
8 for those organs that are not specifically
9 included." I think that's the concept right
10 there.

11 MR. KATZ: "That are not covered,"
12 I would just say.

13 MEMBER ZIEMER: "Not specifically
14 covered." We've got "covered" twice, but
15 that's all right probably.

16 MR. KATZ: The only other thing I
17 would say is I would be consistent about
18 "included" or "covered." I mean, use the same
19 term everywhere.

20 MEMBER ZIEMER: Yes.

21 MR. KATZ: We start off saying,

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1 "included," "included," and then we say,
2 "covered," "covered," but I would be
3 consistent.

4 CHAIR MUNN: "The procedure under
5 review provides guidance on which tissues and
6 organs covered by ICRP-66 can be used as
7 substitutes for those organs not specifically
8 covered."

9 MEMBER ZIEMER: Yes, but up above
10 we used "included."

11 MR. KATZ: Above we used the term
12 "included." So Steve is just changing it all
13 to "included?"

14 MR. MARSCHKE: I might have to
15 change it to all "covered."

16 (Laughter.)

17 MR. KATZ: You got there first.

18 MEMBER ZIEMER: Then we have to
19 change the wording on the first thing because
20 we eliminated "surrogates," right?

21 MR. MARSCHKE: I eliminated

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1 "surrogates." I don't know --

2 MR. KATZ: Yes, we did.

3 MEMBER ZIEMER: Well, I think we
4 did.

5 MR. KATZ: We did.

6 MEMBER ZIEMER: We used -- what did
7 we substitute?

8 MR. MARSCHKE: "Substitutes."

9 MEMBER ZIEMER: On the first
10 finding, explanations on the use of organs as
11 substitutes are not always clear, right?

12 We've got to get rid of the non-
13 modeled stuff in the second one.

14 CHAIR MUNN: Yes, I think we have
15 made a mistake, actually. "The procedure
16 under review provides guidance on which
17 tissues and organs are included in" -- instead
18 of "by"

19 "Which should be used as
20 substitutes for those organs not specifically"
21 -- oh, but that's a clumsy sentence.

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1 MEMBER ZIEMER: Which one?

2 CHAIR MUNN: The last one.

3 "The procedure under review
4 provides guidance on which tissues and organs
5 included in the ICRP can be used as
6 substitutes for those organs not specifically
7 covered."

8 MEMBER ZIEMER: "Guidance on
9 tissues" --

10 CHAIR MUNN: Are we going to use
11 "substitutes" always instead of "surrogates?"
12 If so, then finding 1 gets "substitutes,"
13 right?

14 MR. KATZ: Now, I would rewrite
15 finding 1 anyway. I would say, "Guidance on
16 which organs to use as substitutes is not
17 always clear," or something along those lines.

18 MEMBER ZIEMER: That's too long.

19 MR. KATZ: Okay. That's no longer
20 than what's there, though.

21 MEMBER ZIEMER: "Which organs to

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1 use as substitutes." Period.

2 DR. OSTROW: I agree with Ted that
3 the word "explanation" is not very clear
4 itself.

5 DR. MAURO: That's right. Is the
6 problem with "guidance" or is it
7 "explanation?"

8 DR. OSTROW: "Guidance" is not
9 clear.

10 DR. MAURO: On the selection of
11 substitutes, right?

12 DR. OSTROW: Yes.

13 CHAIR MUNN: You want "guidance"
14 there instead of "explanation?"

15 DR. OSTROW: Yes.

16 CHAIR MUNN: So it's going to read,
17 "Guidance over the use of which organs to use
18 as substitutes is not always clear."

19 MR. KATZ: Or "Guidance on the
20 selection of substitutes is not always clear."

21 DR. OSTROW: That's better.

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1 CHAIR MUNN: Still not much better.

2 DR. OSTROW: "Guidance on the
3 selection of substitutes."

4 MEMBER ZIEMER: "Substitutes."

5 DR. MAURO: What's the new wordage?

6 CHAIR MUNN: Okay. Again,
7 "Guidance on the selection of substitutes is
8 not always clear. Having been preceded by the
9 technical contractor's review of this
10 procedure for these three findings. See
11 finding No. 2."

12 What are we going to call non-
13 modeled dose? I tell you we made a mistake.

14 MEMBER ZIEMER: "The section on
15 non-modeled dose" -- what did we call those
16 organs?

17 CHAIR MUNN: Substitutes.

18 MEMBER ZIEMER: No. The
19 substitutes are the ones that you do use.

20 DR. MAURO: It's going downhill
21 fast.

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1 (Laughter.)

2 MEMBER ZIEMER: It's late in the
3 day. We'll save this one for another day and
4 get an easier one.

5 Well, how about this. "The section
6 does not provide clear instructions on what to
7 do if there are large differences in the" --
8 it's differences in what, the dose
9 calculations?

10 DR. MAURO: There can't be -- this
11 doesn't make sense.

12 MEMBER ZIEMER: Large differences
13 of what?

14 DR. MAURO: Yes.

15 MR. MARSCHKE: I don't understand
16 the finding, maybe.

17 DR. MAURO: Yes, that's our
18 problem. We didn't write the finding very
19 well. I mean, I'll just state that. What
20 were we trying to say here?

21 MR. MARSCHKE: I don't know what

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1 the finding is trying to tell us.

2 DR. MAURO: Yes.

3 MEMBER ZIEMER: Well, I thought it
4 had to do with the fact that, let's see, non-
5 modeled organs. Does it have to do with
6 physiological differences in the non-modeled?

7 I mean, obviously, you can't talk about dose
8 differences between the two because you're
9 using the dose that --

10 DR. MAURO: I know. That's what
11 I'm trying to say.

12 MEMBER ZIEMER: Right.

13 MR. MARSCHKE: We'll have to come
14 back and read --

15 MEMBER ZIEMER: It's almost got to
16 do with physiological differences.

17 CHAIR MUNN: Large structural
18 differences.

19 MEMBER ZIEMER: Yes, large
20 biological differences or something like that.

21 We need to know what the finding really is.

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1 DR. MAURO: Yes, I agree with you.

2 MEMBER ZIEMER: It's hard to put it
3 into layman's use if you don't know --

4 DR. MAURO: If you don't know what
5 you're talking about.

6 (Laughter.)

7 MEMBER ZIEMER: We don't even
8 understand the section.

9 In the non-modeled organ dose --
10 non-modeled dose? Do we have to say it's non-
11 modeled dose?

12 CHAIR MUNN: It's a non-modeled
13 organ, not a non-modeled dose.

14 MEMBER ZIEMER: Oh, it's the dose,
15 but it's --

16 DR. MAURO: Organs are never
17 modeled because they are not part of the
18 table. That's the problem. We don't have any
19 doses for it, so we're picking some other
20 organ that we do have dose for --

21 MEMBER ZIEMER: Right.

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1 DR. MAURO: -- and saying we're
2 going to use that as a substitute. Now I
3 don't understand what the finding is.

4 CHAIR MUNN: Because it's a modeled
5 organ.

6 MEMBER ZIEMER: Well, what if you
7 simply, on this last one, what if you just
8 said, "The method described to assign the
9 highest dose to mouth, nose, and throat
10 doesn't follow the recommendations?" It
11 doesn't really matter here whether you say
12 it's modeled, right?

13 CHAIR MUNN: Take out "non-modeled
14 organ."

15 MEMBER ZIEMER: "To assign the" --

16 CHAIR MUNN: "Highest dose."

17 MEMBER ZIEMER: -- "the highest
18 dose to the mouth, nose, and throat does not
19 follow the recommendations."

20 CHAIR MUNN: And is there no way
21 that we can quickly pull up the original

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1 finding?

2 MR. KATZ: See what Steve's doing?

3 That's what he's doing.

4 MR. MARSCHKE: "Technical issues,"
5 that might be where it's at.

6 MR. KATZ: It's right there, 3.3.5.

7 MEMBER ZIEMER: Those are the
8 objectives.

9 CHAIR MUNN: This is not a finding.
10 We're looking for what the finding says.

11 MEMBER ZIEMER: 4.1 is the one
12 finding on this.

13 CHAIR MUNN: You're considering the
14 review objectives as a finding?

15 MEMBER ZIEMER: Well, it's word-
16 for-word what's in here.

17 MR. HINNEFELD: And the word-for-
18 word finding out of the database is "Section
19 4.1, Non-Modeled Organs, does not provide
20 clear instructions on which organ to use in
21 cases involving large differences among non-

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1 modeled organs."

2 CHAIR MUNN: So let's go to
3 Section -- what did you say?

4 MR. HINNEFELD: Section 4.1 of the
5 -- well, that would be of the TIB.

6 MEMBER ZIEMER: Now is there an
7 expansion of that somewhere?

8 MR. MARSCHKE: No. This is all
9 we've got.

10 CHAIR MUNN: This says the
11 objective, but that's not Section 4 -- is that
12 what --

13 MR. MARSCHKE: It's Section 4.1 of
14 the table, Wanda, of the checklist table.
15 See, basically, up here it says 4.1, "Does the
16 procedure support a prescriptive approach to
17 dose reconstruction?" And we gave it a four.
18 And then it says, "See review comments."

19 And then you go down and see the
20 review comments. "Review objective 4.1."
21 "Highest non-modeled dose of OCAS-TIB-8 does

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1 not clearly" -- well, we've got to look at
2 OCAS-TIB-8.

3 MR. HINNEFELD: Getting there.

4 CHAIR MUNN: Page 3, Section 4.1 of
5 the document. "And doses delivered to" --
6 right above it there. "It is conceivable that
7 a situation could arise where a photon-
8 emitting radionuclide causes a large
9 difference in doses delivered to non-modeled
10 organs. The dose based on an organ that is
11 not the highest non-modeled organ."

12 MEMBER ZIEMER: So is that saying
13 that they, then, if there's a couple of
14 neighboring organs that get different doses,
15 that they need guidance on which one to use or
16 -- what is it?

17 MR. HINNEFELD: Well, in response
18 to the comment, he wrote that, "Okay, but the
19 last paragraph of Section 4.1 addresses SC&A's
20 concern, but the preceding paragraph suggests
21 that one or more claimant-favorable selections

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1 is required."

2 So, in other words, it's saying,
3 well, yes, we didn't really -- it kind of
4 agrees with the finding. And this is in
5 abeyance? Is that the status on this or is
6 this finally closed? We revised the document.
7 Is that what happened?

8 DR. MAURO: I like that.

9 MR. HINNEFELD: Okay, there is a
10 Rev. 1. Okay.

11 DR. MAURO: I just was starting to
12 read that.

13 MR. HINNEFELD: Rev. 1 took care of
14 it. Okay?

15 MEMBER ZIEMER: "Radionuclide
16 causes a large difference in doses in non-
17 modeled organs." Yes, it is acceptable in the
18 situations that you base the dose on an organ
19 that is not the highest non-modeled organ.

20 CHAIR MUNN: I have a hard time
21 understanding that.

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1 MEMBER ZIEMER: Okay. So you've
2 got some non-modeled organs in the general
3 vicinity of the organ of interest.

4 MR. HINNEFELD: Well, the fact of
5 the matter is this never happens.

6 MEMBER ZIEMER: Okay.

7 MR. HINNEFELD: A photon, the
8 photon emissions are never a significant
9 fraction of the internal dose from the
10 nuclides we encounter. Okay. If the deposit
11 in the spleen, for instance, and the liver
12 were adjacent, theoretically, I guess, it
13 could be higher. You know, you would have
14 enough penetration of the photons that you --
15 I don't know how you would do that much of a
16 buildup factor to build up electrons. I don't
17 know how this ever happens. And, in reality,
18 it never does because the particular radiation
19 is always an overwhelming amount of energy
20 delivered, you know, radiation that is
21 delivered. So we're kind of jousting at

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1 windmills with the whole deal.

2 But we revised the OTIB, and now
3 the final two paragraphs of Section 4.1,
4 apparently, based on the re-review by SC&A,
5 which is also recorded in the database, felt
6 like this is now rewritten correctly, and it
7 addresses that. It just says check the organs
8 in the proximity to see -- radiation of the
9 organs in the proximity to see if any were
10 higher.

11 MR. KATZ: So they select the
12 highest one?

13 MR. HINNEFELD: Select the highest
14 one. You know, check the organ along with
15 organs in the proximity to make sure you're
16 getting the highest -- it's non-metabolic, it
17 just really has the highest dose.

18 MEMBER ZIEMER: Because there may
19 be one closer, but it's a lower dose for some
20 reason?

21 MR. HINNEFELD: There may be, well,

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1 there may be a close-by one that from some
2 instance would have a higher dose than --
3 you're calculating the organ, the dose to the
4 cancer organ. And if that is a non-modeled
5 organ, you use highest non-metabolic because
6 it just is the circulating blood that
7 irradiates it.

8 However, in the case -- which never
9 happens -- that the radionuclides, most of --
10 or the predominant or even a significant
11 fraction of its energy came from photons, it
12 would probably have to be more than half at
13 least, then you can't just stop at the highest
14 non-metabolic. You have to see if there is a
15 modeled organ close by that may, in fact, have
16 a higher dose. I don't think I have ever seen
17 it happen.

18 DR. MAURO: Any photon emitter also
19 has a beta, and the beta is going to deliver
20 the organ dose, not the photon.

21 MR. HINNEFELD: Yes.

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1 DR. MAURO: This is an issue that
2 is a non-issue.

3 MR. HINNEFELD: Yes. But it doesn't
4 make it any easier to explain to the public.

5 CHAIR MUNN: No, it doesn't.

6 DR. MAURO: Let's try to find a
7 very general statement we could place here
8 that sort of fits the essence of it because we
9 can't get into this. We can't get into this.

10 MR. HINNEFELD: I'm just wondering
11 if it occurred to anybody that maybe we should
12 edit it at home and send it in to Wanda and
13 then have a final one to look at.

14 CHAIR MUNN: Well, that's why I
15 sent the original out such a long time ago.
16 This one of mine, this marked one of mine,
17 granted, that's a new one, but we had the
18 other one a long time ago. The original went
19 out.

20 MEMBER ZIEMER: Well, I think we
21 only have to fix that second one, and the

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1 resolution has to be dealt with because we've
2 got to get rid of some words there.

3 CHAIR MUNN: Well, I don't know
4 whether this catches the essence of what we
5 have to say or not, but "The procedure does
6 not provide clear instructions regarding what
7 to do when there are large differences in dose
8 calculations between organs included in the
9 table and others that are not."

10 It makes more sense than what we
11 had.

12 DR. MAURO: I like it. At least I
13 understand what you just said.

14 DR. OSTROW: What does it mean,
15 "large differences in dose calculations?"

16 MEMBER ZIEMER: Read it again,
17 Wanda.

18 CHAIR MUNN: "The procedure does
19 not provide clear instructions regarding what
20 to do when there are large differences in dose
21 calculations between organs included in the

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1 table and others that are not."

2 MR. MARSCHKE: If it is not
3 included in the table, how does it have a dose
4 calculation?

5 DR. MAURO: How about "doses," just
6 "doses?"

7 CHAIR MUNN: Then it's a
8 substitute. You're using a substitute or --
9 between organs included in the table and
10 substitutes.

11 DR. MAURO: But it's not dose
12 calculations because you're not calculating --
13 it's the doses. And was there a real dose?

14 CHAIR MUNN: Yes.

15 DR. MAURO: And certainly there are
16 going to be differences in those organs, some
17 of which are going to be ones that we can
18 model and some of which we cannot model. I
19 wouldn't say dose is calculated. I would just
20 say not calculated doses, but the doses. It's
21 unclear that, when you have that circumstance,

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1 how do you go about picking the right
2 substitute?

3 CHAIR MUNN: So the question is,
4 large differences in what?

5 DR. MAURO: In the doses between
6 various organs, both listed, both included and
7 not included.

8 CHAIR MUNN: Okay. So if we did
9 the calculation --

10 MEMBER ZIEMER: Yes, but you can
11 always have large differences in the doses to
12 organs. Maybe the lung has a big dose and the
13 other organs are low. But that's not what
14 we're talking about.

15 DR. MAURO: Well, then, how do you
16 pick a substitute? That's the problem.

17 MEMBER ZIEMER: Yes, that's the
18 issue. It's where there's large differences
19 in doses to organs that are possible
20 substitute organs, is the concept, right?

21 DR. MAURO: No, I think it's the

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1 opposite. I think it's the doses, the real
2 doses to organs that you didn't calculate
3 doses for.

4 MEMBER ZIEMER: Right, the
5 substitute -- or, yes, okay.

6 DR. MAURO: Right. What substitute
7 do you pick when you're in that circumstance?

8 MEMBER ZIEMER: Right.

9 MR. KATZ: Why not just dump this
10 completely and use finding 1 to cover this one
11 as well in a general sense?

12 DR. MAURO: That's the truth.

13 MR. KATZ: Wanda, let's do that
14 because these people aren't going to --

15 MEMBER ZIEMER: Actually, that's
16 exactly, that answers it.

17 DR. MAURO: You've got it.

18 MEMBER ZIEMER: One and two, "The
19 guidance on selection of substitute organs is
20 not clear."

21 DR. MAURO: That's it.

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1 MEMBER ZIEMER: One and two.

2 CHAIR MUNN: Okay. So we're going
3 to say findings 1 and 2 --

4 MEMBER ZIEMER: And two. Both deal
5 with details on --

6 CHAIR MUNN: Well, we will just
7 say, "Guidance for selection of substitutes is
8 not always clear." We can just leave it at
9 that.

10 And then finding 3 because --

11 DR. MAURO: What a great fix.

12 (Laughter.)

13 MEMBER ZIEMER: How about both deal
14 with aspects on --

15 CHAIR MUNN: I think you're going
16 to get wordier.

17 MEMBER ZIEMER: Okay.

18 CHAIR MUNN: So then, finding No.
19 3, "The method described to assign the highest
20 dose to the mouth, nose, and throat does not
21 follow ICRP-66 recommendations." That's

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1 straightforward.

2 DR. OSTROW: Yes.

3 CHAIR MUNN: And the findings, "In
4 response to the findings identified above,
5 NIOSH did three things. One, evaluated the
6 human gastrointestinal tract model ICRP-100 to
7 determine how the mouth should be" -- "how the
8 mouth should be" --

9 MEMBER ZIEMER: "How dose to the
10 mouth should be determined."

11 CHAIR MUNN: Okay.

12 MEMBER ZIEMER: Well, you evaluated
13 that model or did they adopt it or what?

14 MR. HINNEFELD: As I recall, we
15 needed to find out, sort through some sort of
16 backup information behind the ICRP documents
17 because they don't speak to the mouth. We
18 have to figure out, and it's really the
19 respiratory tract. We have to figure out
20 which, E1 or E2, relates to the mouth.

21 MEMBER LEMEN: The bottom line on

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1 this whole thing on the resolution of the
2 findings is No. 3.

3 CHAIR MUNN: Yes, it is.

4 MEMBER LEMEN: Why don't you say
5 that and get on with it?

6 MEMBER ZIEMER: Good point.

7 MEMBER LEMEN: We're making a
8 mountain out of a molehill.

9 MEMBER ZIEMER: Yes, a good point.

10 CHAIR MUNN: And it's not a very
11 pleasant molehill even.

12 MEMBER ZIEMER: "In response, NIOSH
13 issued Revision 1 and satisfactorily addressed
14 all the considerations." How's that?

15 (Laughter.)

16 MR. KATZ: That's getting to the
17 punch.

18 MEMBER ZIEMER: Thank you.

19 MR. KATZ: And let me just say that
20 this discussion took about 55 minutes, and if
21 we do some little, simple arithmetic here

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1 about the number of procedures that will be
2 delivered by SC&A --

3 DR. OSTROW: About 55 all together.

4 MR. KATZ: If we do it, we don't
5 have the time to do it this way.

6 MEMBER ZIEMER: Yes, see, these are
7 learning experiences.

8 MR. KATZ: But these are
9 prototypes, right. I know. No, I'm not
10 criticizing doing this for these initial ones.

11 The thing I wanted to suggest is, going
12 forward, we will need a process that is more
13 efficient than using the Committee in real
14 time to head up these --

15 MEMBER ZIEMER: Right, but this is
16 helpful, so we get a feel for it.

17 MR. KATZ: Yes. Yes. No, it is
18 good for coming up with the prototypes, but --

19 MEMBER LEMEN: I would suggest that
20 maybe on the next two we just relook at those
21 instead of spending another hour on each one

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1 of them.

2 CHAIR MUNN: Yes. I think the mere
3 suggestion of spending another hour on them
4 would probably serve the purposes of all
5 mental health experts in this immediate area.

6 (Laughter.)

7 So may I suggest that I will send
8 to all of you my capture of what I think we
9 have said here in the ones we covered. If you
10 will look at the other two and send back to me
11 any additions, deletions, corrections,
12 suggestions that you might have, then I will
13 try to incorporate them and we will, by email,
14 hopefully, resolve what we are going to
15 produce for the Board. Is that satisfactory
16 with all those aboard?

17 MEMBER LEMEN: Are you going to
18 send all of the first two, now that we've done
19 all the wordsmithing --

20 CHAIR MUNN: Yes. Yes.

21 MEMBER LEMEN: -- back to us to

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1 read?

2 CHAIR MUNN: I will send you what I
3 believe we did here today.

4 MEMBER LEMEN: And then you will
5 send us a clean copy of 3 and 4?

6 CHAIR MUNN: Yes, I will send you a
7 clean copy of 3 and 4 that we have --

8 MEMBER LEMEN: What timeframe do
9 you want us to get back to you?

10 CHAIR MUNN: Well, in view of the
11 fact I'll be back here all next week, let's
12 say by the end of the month.

13 MEMBER LEMEN: Okay.

14 CHAIR MUNN: Actually, certainly,
15 if you could get it to me by -- what? The
16 25th, something like that?

17 MEMBER LEMEN: That's fine.

18 CHAIR MUNN: Is that doable? If
19 you'll get them to me by the 25th, then I will
20 get cleaned-up copies back out to everybody of
21 what I think --

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1 MEMBER LEMEN: But you're going to
2 send us something before, and then we'll get
3 back to you on what you're sending us --

4 CHAIR MUNN: Correct.

5 MEMBER LEMEN: -- after today's
6 meeting?

7 CHAIR MUNN: Correct.

8 MR. KATZ: And what about the one
9 additional one? There's actually three, not
10 two.

11 DR. OSTROW: The fifth one, yes.

12 MEMBER LEMEN: Wanda is going to
13 send all of those to us.

14 MR. KATZ: Right. She said two,
15 but there's actually three that had some
16 review.

17 CHAIR MUNN: I sent four.

18 MEMBER LEMEN: She's going to be
19 sending us five things, as I understand it.

20 CHAIR MUNN: Yes.

21 MEMBER LEMEN: The two that we have

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1 already worked on and the three that we
2 haven't worked on.

3 CHAIR MUNN: Yes, we have worked on
4 four. I've worked on four, and you have my
5 comments on all four of those. And I will now
6 send you what I think is the correct result of
7 our machinations here today. The other two
8 will still be the way they were. And I will
9 send you my comments on the fifth one as well.
10 Okay? Is that satisfactory?

11 MR. KATZ: Yes. I would just say,
12 for SC&A, though, too, you're welcome to,
13 based on this experience --

14 DR. MAURO: No, not a chance.
15 (Laughter.)

16 MEMBER LEMEN: Based upon this
17 experience, you may want to provide nitrous
18 oxide.

19 (Laughter.)

20 CHAIR MUNN: Yes. But what we do
21 need to do before we go is take one last quick

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1 look at calendars to see when we're going to
2 try to address this again. Bear in mind that
3 we have a significant number of carryovers
4 that we did not even touch on today.

5 And one thing that I'm concerned
6 that we didn't spend a lot of time with is we
7 did not get to the PER-12 and 9 issues. We
8 had expected to spend a significant amount of
9 time on that, or at least a half-hour or so.

10 DR. MAURO: Or OTIB-70.

11 CHAIR MUNN: Yes, OTIB-70.

12 DR. MAURO: So Hans has been on the
13 line for eight hours. Thank you, Hans.

14 MR. MARSCHKE: On PER-9, I talked
15 to Hans a little bit about this, and if he's
16 still on, he can chime in. But we don't
17 believe that we owe you anything at this
18 particular point in time. At the last
19 meeting, John presented kind of a summary of
20 the status of where we were on that.

21 I think it was more for Dr. Lemen,

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1 to bring him up to speed as to what had been
2 done on it. And it is our understanding that
3 he was going to, then, go back and read the
4 history on this, and the Subcommittee was
5 going to make a determination as to whether or
6 not to bring this forward to the full Board
7 and potentially to DOL, the Department of
8 Labor.

9 Because this issue, I think we
10 agree that it is not really -- it is the
11 assignment of what is it, the ICD-9, and it's
12 not strictly a NIOSH issue. If it goes
13 anywhere, it is going to go to DOL.

14 So, right now, we think actually
15 Dr. Lemen has the action item, as opposed to
16 SC&A.

17 DR. BEHLING: And, Steve, this is
18 Hans.

19 I did review some of the comments
20 that have been submitted by Brant Ulsh, and I
21 was going to have a few comments, not that

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1 that would take an extensive amount of time.
2 But when we do discuss PER-9, I did want to
3 make some comments that relate to the paper or
4 the response that Brant Ulsh had forwarded to
5 us very recently.

6 MR. MARSCHKE: Sure. Sure.

7 CHAIR MUNN: Richard, are you still
8 on the line?

9 MEMBER LEMEN: Yes, I am, and I
10 actually think this is an issue that needs to
11 be brought up to the Board at some point in
12 time because I think that Dr. Richardson has
13 some comments about this that he expressed,
14 and I think we should talk about it with the
15 other epidemiologists on the Board because I
16 think this paper that was provided certainly
17 puts a position forth that NIOSH clearly has
18 stated, which is in contrast to the discussion
19 we had at the last meeting. I think maybe at
20 this point in time it's ready to go to the
21 Board and just have a discussion on this issue

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1 as a Board item.

2 CHAIR MUNN: Well, it would be
3 helpful for us in the Subcommittee here to get
4 all our ducks in a row, so that we would be
5 very clear about what we were, in fact,
6 bringing to the Board. It's certainly not
7 clear to me what issues are foremost and what
8 needs to be our agenda when we go there.

9 MEMBER LEMEN: Isn't the issue very
10 clearly whether or not the ICD-9 code as deals
11 with Hodgkin's lymphoma the issue that we're
12 talking about?

13 CHAIR MUNN: Yes, I believe so.

14 DR. BEHLING: Well, it's actually
15 more likely to affect the non-Hodgkin's
16 lymphoma as well.

17 MEMBER LEMEN: Right, and that's
18 not clear in the paper that NIOSH put
19 together, but it's very clear that, from what
20 I read on NIOSH's reply here, that probably
21 there's little evidence that Hodgkin's is

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1 related. But there is that difference of
2 opinion that we need to talk about. I'm not
3 sure who the right players are, but I think
4 that there are other players on the Board that
5 need to be brought into this discussion.

6 DR. ULSH: If I could offer perhaps
7 a suggestion?

8 CHAIR MUNN: Please do, Brant.

9 DR. ULSH: If the Subcommittee
10 wants to take that issue up, perhaps you could
11 invite those other Members of the Board to
12 listen in, to participate, and David
13 Richardson or whoever else is on the Board.

14 MEMBER LEMEN: Well, what do you
15 want to accomplish on this?

16 DR. ULSH: Who was that directed
17 to?

18 MEMBER LEMEN: That's directed to
19 NIOSH.

20 MR. HINNEFELD: Well, we're trying
21 to resolve, I guess, findings from the Board

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1 about how we treat, how our PER treated
2 lymphoma. The PER that we wrote, you know,
3 the change that we adopted, and that gave rise
4 to the PER, was to change the target organ for
5 non-Hodgkin's lymphoma from the site of origin
6 to essentially the highest irradiated site of
7 lymphocytes for that, consistent with the
8 diagnosis.

9 So that was the change we made. It
10 prompted us to go back and reconsider a bunch
11 of non-Hodgkin's lymphomas, and so quite a
12 number of those, then, went from originally
13 non-compensable in their first dose
14 reconstruction to compensable when we used the
15 highest lymphoma.

16 Now the findings, when SC&A
17 reviewed that PER, they wrote additional
18 findings. Particularly, I think one, in
19 particular, was, are we really confident that
20 the medical diagnoses were such that Hodgkin's
21 lymphoma and non-Hodgkin's lymphoma were

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1 suitably distinguished? I think that's the
2 nut of at least part of the finding.

3 DR. BEHLING: Yes, it is. And I
4 did want to make some comments. I don't know
5 if today it's really out of the question to go
6 and take this discussion any further, but I
7 did have some comments regarding that.

8 MR. HINNEFELD: I would like to
9 finish this one more thought along that part
10 of the finding, about Hodgkin's and non-
11 Hodgkin's being non-differentiated, and the
12 statute itself differentiates because it puts
13 Hodgkin's lymphoma out of the SEC class and
14 non-Hodgkin's lymphoma in the SEC class.

15 So the precedent for saying that
16 Hodgkin's lymphoma is different from non-
17 Hodgkin's lymphoma, at least for this program,
18 was established by the law. And so we are, by
19 treating non-Hodgkin's as its own disease and
20 Hodgkin's --

21 (Whereupon, the above-entitled

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1 matter went off the record at 4:55 p.m., and
2 went back on the record at 4:56 p.m.)

3 MR. KATZ: Sorry. We had a problem
4 technically here and disconnected ourselves
5 from the line.

6 MR. HINNEFELD: From everything,
7 yes.

8 MEMBER LEMEN: Well, we resolved it
9 all while you were gone.

10 (Laughter.)

11 MR. KATZ: Oh, very good. Very
12 good.

13 MR. HINNEFELD: Okay. I'll be
14 quiet.

15 I was just making a point that that
16 distinction was made, essentially, by the law,
17 by saying Hodgkin's is not in the SEC and non-
18 Hodgkin's is in the SEC.

19 MEMBER LEMEN: Right.

20 MR. HINNEFELD: And so we're
21 comporting, essentially, with that division at

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1 that point. Now if there is a part of the
2 finding that reflects how we are approaching
3 target organs for non-Hodgkin's, then I guess
4 there might be some discussion on that, but I
5 don't remember that. I just remember the
6 finding being about Hodgkin's versus non-
7 Hodgkin's.

8 DR. BEHLING: Yes, that is one of
9 the key issues.

10 MR. HINNEFELD: So I'm just saying,
11 well --

12 MEMBER LEMEN: Where do you want to
13 go with this? Do you want to bring it up
14 later or do you want to --

15 MR. HINNEFELD: I mean, I'll be
16 glad to talk about it later. I don't think
17 anybody is willing to have a conversation
18 today.

19 I just don't know that the agency
20 is going to be interested in going down a path
21 that essentially says, you know, that's

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1 inconsistent with what was established when
2 the law was established.

3 MEMBER LEMEN: Yes. I'm ready to
4 talk about it, but I think that it's going to
5 take some time to iron it out. So maybe we
6 need to either set up a conference call,
7 Wanda, with the appropriate people to just
8 talk about this issue or wait until the next
9 meeting.

10 MR. KATZ: Well, Dick, we can have
11 this as an agenda item for the next meeting.

12 MEMBER LEMEN: Then let's do that.

13 MR. KATZ: Yes.

14 MEMBER LEMEN: If it will wait that
15 long.

16 MR. KATZ: There's nothing keeping
17 us --

18 MR. HINNEFELD: I don't know
19 anything that's driving it.

20 MEMBER LEMEN: If it will wait that
21 long, let's make it up at the beginning next

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1 time, so we don't come to the end.

2 CHAIR MUNN: Well, I will make a
3 note of that.

4 MEMBER LEMEN: And I will be ready
5 to talk, and maybe I could talk to SC&A a
6 little bit more about this before that time.

7 CHAIR MUNN: That's a good idea.

8 MR. KATZ: Absolutely.

9 CHAIR MUNN: Well, looking at
10 calendars, please, if you would. November is
11 out of the question for anything, as far as I
12 can see. It's pretty thoroughly jammed up.

13 What -- we're continuing on
14 Resolution until Hanukkah or what? Do we have
15 any problem with scheduling something
16 Thursday, December the 2nd?

17 MEMBER LEMEN: I'm actually out of
18 the country all of the month of December.

19 CHAIR MUNN: Well, I guess that
20 takes care of that.

21 MEMBER LEMEN: You can go without

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1 me.

2 CHAIR MUNN: No.

3 MR. HINNEFELD: Not with that on
4 the agenda items.

5 CHAIR MUNN: No, I don't think so.

6 MEMBER LEMEN: My wife and I are
7 going to celebrate our 25th wedding
8 anniversary, and I'm going to be in Tahiti.

9 MR. KATZ: We can go to Tahiti.

10 MR. HINNEFELD: Why don't we have a
11 meeting in Tahiti?

12 CHAIR MUNN: Yes, we can do that.
13 I'm for that.

14 MR. KATZ: We'll come to you.

15 CHAIR MUNN: Oh, will you be back
16 after New Year's?

17 MEMBER LEMEN: Yes.

18 CHAIR MUNN: Will you be on board
19 something like the 5th of January?

20 MEMBER LEMEN: I will be around
21 that week, yes.

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1 CHAIR MUNN: What about the other
2 Board Members? Is January 5, which is a
3 Wednesday, a good time for you?

4 MEMBER ZIEMER: If you guarantee no
5 snow in Cincinnati, we might.

6 MR. HINNEFELD: We can make it
7 subject to the weather.

8 CHAIR MUNN: Can we do January 5?
9 Will that give both the contractor and the
10 agency an opportunity to address some of these
11 issues?

12 MR. HINNEFELD: Well, yes, we'll
13 try to make some additional progress.

14 DR. MAURO: Could there be any
15 informational discussion with Brant and Hans
16 and whoever else wants to talk before that
17 meeting? It sounds like maybe a little bit of
18 communication to clarify -- I'm not sure if
19 that is appropriate or not.

20 DR. ULSH: Well, we have already
21 had that.

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1 DR. MAURO: We have had it? Okay.

2 So you feel that -- okay, never mind.

3 CHAIR MUNN: Well, we had the one
4 technical, supposedly, where we had OTIB-49
5 discussion on --

6 DR. ULSH: No. No, what I mean is
7 on this particular issue, the lymphoma PER.

8 CHAIR MUNN: Oh.

9 DR. ULSH: SC&A and NIOSH have had
10 a conference call on this where we put our
11 various opinions on the table.

12 DR. MAURO: But Dr. Lemen was never
13 a party to that.

14 DR. ULSH: That's correct.

15 DR. MAURO: The first time he was
16 introduced to this was when I did an
17 abbreviated summary before the end of the last
18 meeting.

19 MEMBER LEMEN: Right, that's all
20 I've had.

21 DR. MAURO: And I just -- as best I

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1 could because Hans was on vacation at that
2 time --

3 MR. MARSCHKE: But I think he has
4 also read the transcript. I mean, he has had
5 access -- the transcript is out there. I mean
6 that was all done and recorded. So there is a
7 transcript on that. That's like April 2008, I
8 believe it was.

9 DR. MAURO: Okay.

10 MR. MARSCHKE: There is a
11 transcript available, if you want to read up
12 and --

13 DR. MAURO: Okay.

14 CHAIR MUNN: Are you okay with
15 that, Dick?

16 MEMBER LEMEN: Yes, but I might
17 call SC&A between -- for the meeting, if
18 that's all right.

19 MR. KATZ: You're welcome to do
20 that, Dick.

21 CHAIR MUNN: Absolutely.

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1 Hearing no objection, Wednesday,
2 the 5th of January, nine o'clock, Cincinnati,
3 the Procedures Subcommittee.

4 MEMBER LEMEN: And if there's a
5 blizzard, we'll do it by phone?

6 CHAIR MUNN: Or go to Tampa or
7 something.

8 MEMBER LEMEN: All right.

9 CHAIR MUNN: Is there anything else
10 for the good of the order?

11 (No response.)

12 Otherwise, we stand adjourned.

13 Thank you all, ladies and
14 gentlemen. I do appreciate your perseverance.

15 MR. KATZ: Thank you, everybody,
16 for all the hard work. We got a lot done.

17 (Whereupon, at 5:01 p.m., the
18 proceedings in the above-entitled matter were
19 adjourned.)

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