

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

convenes the

NINTH MEETING

ADVISORY BOARD ON  
RADIATION AND WORKER HEALTH

ABRWH SUBCOMMITTEE MEETING

The verbatim transcript of the Subcommittee Meeting of the Advisory Board on Radiation and Worker Health held at the Doubletree Oak Ridge, Oak Ridge, Tennessee, on January 24, 2006.

C O N T E N T S

January 24, 2006

|                                       |     |
|---------------------------------------|-----|
| WELCOME AND OPENING COMMENTS          | 7   |
| DR. PAUL ZIEMER, CHAIR                |     |
| DR. LEWIS WADE, EXECUTIVE SECRETARY   |     |
| <br>                                  |     |
| ROCKY FLATS SITE PROFILE              | 10  |
| PRESENTATION OF MATRIX AND DISCUSSION |     |
| MR. JOE FITZGERALD, SC&A              |     |
| DR. JIM NETON, NIOSH/SC&A             |     |
| <br>                                  |     |
| TASK III REVIEW - STATUS/DISCUSSION   | 71  |
| MR. MARK GRIFFON, ABRWH               |     |
| DR. JOHN MAURO, SC&A                  |     |
| MR. STUART HINNEFELD, NIOSH           |     |
| <br>                                  |     |
| Y-12 SITE PROFILE DISCUSSION          | 141 |
| UPDATE OF MATRIX                      |     |
| MR. MARK GRIFFON, ABRWH               |     |
| MR. JOE FITZGERALD, SC&A              |     |
| DR. JIM NETON, NIOSH                  |     |
| <br>                                  |     |
| COURT REPORTER'S CERTIFICATE          | 177 |

### TRANSCRIPT LEGEND

The following transcript contains quoted material. Such material is reproduced as read or spoken.

In the following transcript: a dash (--) indicates an unintentional or purposeful interruption of a sentence. An ellipsis (. . .) indicates halting speech or an unfinished sentence in dialogue or omission(s) of word(s) when reading written material.

-- (sic) denotes an incorrect usage or pronunciation of a word which is transcribed in its original form as reported.

-- (phonetically) indicates a phonetic spelling of the word if no confirmation of the correct spelling is available.

-- "uh-huh" represents an affirmative response, and "uh-uh" represents a negative response.

-- "\*" denotes a spelling based on phonetics, without reference available.

-- (inaudible)/ (unintelligible) signifies speaker failure, usually failure to use a microphone.

**P A R T I C I P A N T S**

(By Group, in Alphabetical Order)

BOARD MEMBERSCHAIR

ZIEMER, Paul L., Ph.D.  
Professor Emeritus  
School of Health Sciences  
Purdue University  
Lafayette, Indiana

EXECUTIVE SECRETARY

WADE, Lewis, Ph.D.  
Senior Science Advisor  
National Institute for Occupational Safety and Health  
Centers for Disease Control and Prevention  
Washington, DC

MEMBERSHIP

ANDERSON, Henry A., M.D.  
Chief Medical Officer  
Occupational and Environmental Health  
Wisconsin Division of Public Health  
Madison, Wisconsin

DeHART, Roy Lynch, M.D., M.P.H.  
Director  
The Vanderbilt Center for Occupational and Environmental  
Medicine  
Professor of Medicine  
Nashville, Tennessee

GIBSON, Michael H.  
President  
Paper, Allied-Industrial, Chemical, and Energy Union  
Local 5-4200  
Miamisburg, Ohio

GRIFFON, Mark A.  
President  
Creative Pollution Solutions, Inc.  
Salem, New Hampshire

MUNN, Wanda I.  
Senior Nuclear Engineer (Retired)  
Richland, Washington

PRESLEY, Robert W.  
Special Projects Engineer  
BWXT Y12 National Security Complex  
Clinton, Tennessee

ROESSLER, Genevieve S., Ph.D.  
Professor Emeritus  
University of Florida  
Elysian, Minnesota

STAFF/VENDORS

LASHAWN SHIELDS, Committee Management Specialist, NIOSH  
STEVEN RAY GREEN, Certified Merit Court Reporter

OTHER PARTICIPANTS  
(in order of appearance)

MR. JOE FITZGERALD, SC&A

DR. JIM NETON, NIOSH

DR. JOHN MAURO, SC&A

MR. STUART HINNEFELD, NIOSH

MS. KATHY BEHLING, SC&A

DR. HANS BEHLING, SC&A

DR. ARJUN MAKHIJANI, SC&A

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

(9:10 a.m.)

WELCOME AND OPENING COMMENTSDR. PAUL ZIEMER, CHAIRDR. LEWIS WADE, EXECUTIVE SECRETARY

1 DR. ZIEMER: Good morning, everyone. If you'll  
2 please take your seats, we're going to begin  
3 our morning session. Welcome, everyone. The  
4 Advisory Board on Radiation and Worker Health  
5 is pleased to be here in Oak Ridge again. We  
6 met here some time back, I forget the exact  
7 date, but we're pleased to return here again to  
8 Oak Ridge and -- not only a place that carries  
9 some bit of sentiment for some of the Board  
10 members, but also opportunity to meet many  
11 folks who've worked here -- in some cases for  
12 their whole working lives.  
13 This morning's session is actually not a  
14 meeting of the Board. It's a meeting of the  
15 subcommittee -- of a subcommittee of the Board,  
16 although you'll see a good fraction of the  
17 Board members are actually here present with  
18 us. But until 2:00 this afternoon we will be  
19 in session as a subcommittee, and then the full  
20 Board will meet beginning at 2:00 o'clock this  
21 afternoon.

1 We'd like to ask everyone -- Board members,  
2 Federal staff people, and members of the public  
3 -- to register their attendance with us. Now I  
4 noticed when I came in, and probably when most  
5 of you came in, the registration book was not  
6 there. You didn't realize that but it was  
7 supposed to be there. And you didn't miss it  
8 at all but the Board members did. It will be  
9 out there I think by break time and, as you  
10 have a chance, please sign your name in that  
11 book so we have a record of your attendance  
12 with us here today.

13 Also for members of the public there will be a  
14 sign-up booklet for you if you wish to make  
15 public comment later in the day. We have a  
16 public comment session late this afternoon at  
17 5:30, and if you wish to make public comment we  
18 ask that you sign up so we have some idea of  
19 how many will be addressing us and we can allot  
20 the time accordingly.

21 On the table over here in the far side there  
22 are a number of handouts which include today's  
23 agenda, copies of materials that the Board will  
24 be discussing, so that -- please avail yourself  
25 of those materials as you see fit.

1 I'm going to introduce Dr. Lewis Wade, who's the  
2 Designated Federal Official for this Advisory  
3 Board, and Dr. Wade has a few initial comments  
4 as well. Dr. Wade.

5 **DR. WADE:** Thank you, Paul. Only to -- to join  
6 Paul in welcoming you to this meeting. For the  
7 next three days, we'll be heavily involved in a  
8 number of issues. And this Board believes in  
9 transparency in all that it does, so we  
10 encourage you to be here and to listen. We do  
11 have two public comment periods; one today from  
12 5:30 to 6:30 and one tomorrow evening from 7:00  
13 to 8:30. And again, we welcome your comment.  
14 I bring you regards from the Secretary of HHS,  
15 also from the Director of CDC and from the  
16 Director of NIOSH.  
17 We do reserve the right to be a bit flexible  
18 with the agenda. One of our members, Mark  
19 Griffon, is delayed in reaching us. He started  
20 out in a snowstorm in Boston and will join us  
21 mid-morning. As Mark has had the lead on the  
22 discussion of the Y-12 site profile, I've  
23 suggested to the Chair that we delay that until  
24 Mark arrives. We'll have the full discussion,  
25 but I think it would be best had with Mark

1 here, and we'll start then with the Rocky Flats  
2 site profile discussion.  
3 As should be my practice and hopefully will be  
4 my practice, before we start any discussion  
5 I'll identify to you if there are any conflicts  
6 on the part of any members of the Board. In  
7 order to get a Board that's capable of doing  
8 what we ask this Board to do, these people have  
9 experiences throughout the industry that we're  
10 serving and therefore from time to time there  
11 are conflicts. If there are conflicts, we'll  
12 identify them and specify to you how those  
13 conflicts will be dealt with. As it turns out,  
14 there are no conflicts on the Board for Rocky  
15 Flats, so my first report is that there are no  
16 conflicts.

**ROCKY FLATS SITE PROFILE**  
**PRESENTATION OF MATRIX AND DISCUSSION**  
**MR. JOE FITZGERALD, SC&A**  
**DR. JIM NETON, NIOSH/SC&A**

17 DR. ZIEMER: Thank you very much, Lew. We will  
18 then proceed as suggested with the discussion  
19 of the Rocky Flats site profile. We have a  
20 presentation from the Board's contractor, SC&A.  
21 The discussion will be led by Joe Fitzgerald,  
22 and then following that we will hear from NIOSH  
23 and Dr. Neton. So Joe, if you'll kick off this

1 discussion, please.

2 **DR. WADE:** And just to make sure that we all  
3 have the right papers, we have Joe's  
4 presentation in front of you. There's also Jim  
5 Neton's comments, and then we have the latest  
6 copy of the matrix or the matrices we use  
7 filled out for Rocky Flats. That should all be  
8 in front of you now.

9 **DR. ZIEMER:** Right.

10 **DR. WADE:** And copies on the table.

11 **DR. ZIEMER:** And I might just mention,  
12 particularly for members of the public, the  
13 matrix that we're referring to is a document  
14 that flows out of the review by the Board. It  
15 all begins with the site profile which is  
16 developed by NIOSH. This is true of Rocky  
17 Flats; it's also true of Y-12 and other sites.  
18 There's an official site profile. Then the  
19 Board reviews the site profile and the  
20 contractor assists the Board in that review,  
21 and so as an outcome of that review a number of  
22 issues are identified. These issues are  
23 identified in the matrix. They are issues that  
24 are raised on behalf of the Board by the  
25 contractor, and then in turn NIOSH reviews

1           those issues and develops a response. That  
2           response may be yes, we agree with that issue  
3           or with that particular item that has been  
4           raised or we disagree with their finding, or  
5           perhaps some middle ground may be reached, and  
6           ultimately the Board then will take a final  
7           action item by item. So the matrix is a way of  
8           tracking the issues that are raised as the  
9           Board's contractor reviews the site profile.  
10          So with that as background, Joe, if you'll  
11          proceed.

12          **MR. FITZGERALD:** Thank you, Dr. Ziemer. Good  
13          morning, everybody.

14          What I'm going to present is really highlights  
15          of the matrix. The matrix I think is over here  
16          on the table. And I'm not going to repeat that  
17          and go line by line, but I want to just go  
18          ahead and cover that and I think Brant from  
19          NIOSH will also provide some perspectives as  
20          well.

21          A little background, particularly for those who  
22          aren't familiar with the review, this review  
23          was done last summer. It went through  
24          classification review, actually was submitted  
25          to the Board and NIOSH on December 8<sup>th</sup>. And

1           this is really the advent of the issue  
2           resolution process. We haven't had a dialogue  
3           with NIOSH, and I think this is the point where  
4           clearly we're going to begin talking about some  
5           of these issues. Some of these issues may in  
6           fact have answers. We have not had that  
7           exchange yet, so this is almost a snapshot in  
8           time going back to when this was submitted  
9           December 8<sup>th</sup>. The matrix itself went in  
10          mid-December.

11          Okay. In any case, in terms of highlights, the  
12          primary issue that I think we felt very  
13          strongly about and would hope to have some  
14          discussions on is the use of the median MDA  
15          values for plutonium and americium at Rocky.  
16          We feel in particular this is important  
17          because, again, given the low thresholds in  
18          terms of measurement of plutonium and  
19          americium, how one handles the MDA value, how  
20          one applies that and what one does in the  
21          instance where you have in fact zeroes in  
22          background recorded readings -- and Rocky Flats  
23          actually, given the history, looking at the  
24          data, there are a number of instances,  
25          particularly in the early years where you in

1 fact see a lot of zeroes in backgrounds  
2 recorded -- and certainly there's a lot of  
3 documentation to how that was handled, but also  
4 some questions and ambiguities about how that -  
5 - those -- that got (unintelligible)  
6 interpreted and when in fact (unintelligible)  
7 background recorded.

8 In this particular issue, though, there's two  
9 issues. One, how the MDA is defined is very  
10 critical, and in this case we are concerned  
11 about the variables, the factors that go into  
12 defining the MDA according to ANSI standards,  
13 and what we're reading in the TBD. And again,  
14 we haven't had a chance to really get behind  
15 some of these words and talk about the basis  
16 involved, but clearly going back into the '50s  
17 one is trying to figure out how these MDAs were  
18 developed, how they were applied. And what  
19 concerns us is, given the thresholds we're  
20 talking about and the low level of measurement  
21 in the urine, words like "typical" and  
22 "theoretical" -- typical counting times of 150  
23 minutes, for example; a theoretical upper-bound  
24 detector counting efficiency; assumed sample  
25 values in this case equal to 24-hour urine

1 samples, and so on and so forth. The question  
2 we're really getting to is, how precise can one  
3 be given the amount of time involved and given  
4 the records, in terms of coming up with an MDA  
5 that would be applied across the board; and  
6 does one need to cut a little bit of -- not  
7 slack, but some margin, given the fact that  
8 there are some uncertainties involved, clearly.  
9 And I think that the TBD attempts to provide  
10 some bounds to this, but in the process clearly  
11 points to the uncertainties involved in all  
12 these parameters. And again, the record is not  
13 clear and there is certainly uncertainty  
14 perhaps compounded on uncertainty. So here the  
15 concern is, can you in fact come up with median  
16 MDAs that are in fact quantitative and based in  
17 -- in the record.

18 And beyond that question is the question of  
19 whether in fact, given the way background and  
20 zero values were applied at Rocky Flats,  
21 whether in fact the MDA value may be non-  
22 conservative in the final analysis. And the  
23 history is the fact that urinalysis results  
24 less than ten percent of the tolerance level,  
25 and the tolerance level was the maximum value

1           that -- action level that was permissible for  
2           urine counts for Pu and americium. And values  
3           that were less than ten percent of that level  
4           were not recorded. And for plutonium that  
5           comes to .88 dpm per 24 hours, and for enriched  
6           uranium of course, 8.8 (unintelligible) point  
7           per hour, and I guess the implication there is  
8           -- implies that when you get below those  
9           threshold values, those values are what's  
10          inferred as going to be recorded as zero or  
11          background, and this in fact may be in excess  
12          of some of the MDA values that would be  
13          averaged and used and applied. And our concern  
14          is that that's not going to be conservative.  
15          In fact, that's going to skew the data quite a  
16          bit, and what we're interested in finding out a  
17          bit more is how in fact is NIOSH addressing  
18          that particular issue and is there any  
19          additional information that wasn't in the TBD  
20          that could be forthcoming to rationalize this.  
21          So the history is murky. Certainly the  
22          implication is there that in fact, given the  
23          practice of assigning these values of  
24          background zero, using median MDA values may in  
25          fact be inappropriate and not technically

1           founded.

2           Another issue, this low or insoluble Pu, we --

3           we've had this issue and this issue came up

4           with -- certainly in our Y-12 report and other

5           instances. Another terminology, I think high

6           fired's been used. Certainly our concern here

7           is that -- we've converged with NIOSH on this

8           particular issue in the sense that we've -- in

9           the final analysis, with regards to the

10          solubility class, if someone in fact gets a

11          intake -- uptake of plutonium in the lung, it's

12          not going to change the dose reconstruction

13          bottom line significantly. It's going to be in

14          fact something that will be significant

15          addressed as such. However, what we're

16          concerned about is the fact that you have

17          events -- you have instances where an acute

18          intake of insoluble plutonium may in fact give

19          you situations where you're not going to see it

20          as readily and you're going to have situations

21          where, if -- if not lung, you're going to have

22          systemic organs, GI organs that may be

23          critical, and it's going to depend on the type

24          of cancer, so this is almost one where we've

25          come very close to agreeing that overall it's

1 not going to be as significant as we once  
2 thought it might be. However, I think there's  
3 going to be instances where, if the target  
4 organ is not the lung, in fact is the GI  
5 organs, it may in fact play a role, may be  
6 significant, something that can't be  
7 discounted.

8 **DR. ZIEMER:** Joe let me interrupt just a  
9 moment. Could you clarify then -- what you're  
10 saying in general, this doesn't appear to be a  
11 significant issue but there may be individual  
12 cases where it would --

13 **MR. FITZGERALD:** Yeah. I think what we're  
14 saying here is that -- you know, we went into  
15 this concerned that -- you know, again, the  
16 high fired or insoluble plutonium issue was  
17 something that we had seen at other sites.  
18 Certainly it figured in the debates at Rocky  
19 and the deliberations with Rocky. We looked at  
20 that particular issue; we certainly had a  
21 number of discussions with NIOSH and the  
22 technical staffs. I think the bottom line on  
23 that is that it's not going to ultimately make  
24 a significant amount of difference in terms of  
25 the activity in the lung and in terms of dose

1 reconstruction what the outcome would be.  
2 However, we have two situations where we're  
3 concerned. That for events or acute exposures,  
4 it's not clear that you would not have a  
5 situation where this is not being addressed  
6 adequately. For instances where you're dealing  
7 with a target organ that's other than the lung,  
8 you're dealing with the GI tract or whatever --  
9 you know, the systemic organs -- it's again not  
10 clear that that might not be a significant  
11 contributor of dose. So in those instances the  
12 S -- or super S as you might call it --  
13 plutonium might actually be a factor and should  
14 be -- a contributor and something that's  
15 treated in the analysis. So just those two  
16 exceptions -- not as broad as it was at one  
17 time, not as significant as it was at one time,  
18 but certainly something that can't be ignored.  
19 In this particular instance, you know,  
20 certainly the neutron exposure issue,  
21 particularly with NTA film, was a key issue at  
22 Rocky Flats. Certainly there was a neutron  
23 dose reconstruction program that was run over  
24 the past several years, if not longer, that has  
25 come up with a factor that would correct for

1 the misreading of the NTA film at Rocky Flats.  
2 And I think this -- you know, this group, this  
3 Board, is familiar with some of the NTA issues  
4 at Rocky Flats. Clearly it was recognized  
5 early on, they went back and tried to  
6 reconstruct how these NTA films were read, how  
7 they in fact needed to be corrected, and  
8 there's a report that was issued this past year  
9 that wasn't acknowledged or reflected in the  
10 TBD because, again, the site profile came out  
11 before that, but clearly would provide some of  
12 those factors. What we're saying in the  
13 review, though, quite apart from the extent to  
14 which that may correct for the NTA film  
15 readings, for those energies, you have neutron  
16 energies at Rocky Flats that actually fall  
17 below the threshold of NTA. So this  
18 reconstruction program may not give you much in  
19 that regard. I think the tack there would be  
20 similar to what we're taking with Y-12, that  
21 certainly one has to consider what correction  
22 factors, really what energies may exist at the  
23 site that may fall below the NTA threshold.  
24 That wasn't evident in the site profile.  
25 Also it doesn't address -- this is, again, the

1 NDRP program, this reconstruction program does  
2 not address non-plutonium workers. In other  
3 words, sources of neutrons that may exist  
4 outside the Pu process lines, and for energies  
5 that would fall outside of that. Again, this  
6 so-called neutron dose reconstruction program,  
7 the NDRP, focused on trying to correct for the  
8 NTA energies -- or the NTA readings, records  
9 that existed. So anything outside that scope  
10 is still problematic in terms of neutrons. And  
11 so what we're pointing out is, in order to have  
12 the complete picture at Rocky, one has to be  
13 careful about looking at the possibility of  
14 energies that would fall below those energies  
15 in the thermal range, and also look at non-Pu  
16 workers elsewhere in the plant as well.  
17 I think we also pointed out in the site profile  
18 that it's important from a coworker standpoint  
19 to look at job categories. We're, you know,  
20 aware that a lot of this data was developed by  
21 the University of Colorado and that, again,  
22 NIOSH has had some difficulty getting that  
23 information out of the University of Colorado,  
24 so we're I guess affirming that that's  
25 important. We're affirming that they're doing

1           the right thing, but we're also acknowledging  
2           that it's been difficult to get ahold of. So  
3           again, we think that's pretty critical  
4           information and that's going to help certainly  
5           develop some of the answers we're talking  
6           about.

7           We're particularly concerned about the -- I'm  
8           going to use the word data reliability. I  
9           think we finally came to that conclusion, that  
10          was the right word terminology so we'll use  
11          data reliability. But in the report we talk  
12          about data integrity, and I think, again, our  
13          concern here is that, given the lengthy history  
14          at Rocky Flats and a lot of the documentation  
15          investigations, our concern here is the  
16          integrity of the data, the reliability of this  
17          record to be used for dose reconstruction. And  
18          here we're concerned about a number of issues  
19          that, you know, collectively raise questions,  
20          and we don't have answers. I think this is a  
21          point of departure where we think the site  
22          profile would go a long ways to inform the dose  
23          reconstruction process by providing some  
24          perspectives on these issues. But for example,  
25          the potential problems with algorithm and

1 dosimeter calibrations, that was the subject of  
2 a major GAO investigation maybe ten years ago  
3 where there was a lot of concerns about whether  
4 in fact the dosimeters were calibrated  
5 correctly and what the implications for  
6 miscalibration would be. And again, we feel  
7 that that isn't treated sufficiently and the  
8 implications aren't addressed sufficiently in  
9 the site profile. What does it mean, in fact,  
10 to acknowledge and have this addressed in a GAO  
11 investigation, that in fact the dosimeter  
12 calibrations are faulty? And we think that  
13 needs to be addressed clearly.

14 Issues of placement of dosimeters -- this is  
15 not a new issue. We certainly have addressed  
16 this at Pantex and at Iowa. This question  
17 seems to crop up in different sites for the  
18 same reasons. But again, I think this is  
19 something that would be very helpful to have  
20 addressed in the site profile.

21 Dosimeters not worn and improperly worn --  
22 interviews with workers, looking at  
23 documentation, even internal DOE oversight  
24 reviews, you know, there's, again, a history  
25 where certain groups of workers, certain

1 workers clearly did not wear or improperly wore  
2 dosimeters. And the implication there is in  
3 the following bullet, which is in a number of  
4 cases the policy for not getting a returned  
5 dosimeter could be very well to assign a zero  
6 or no data available. The policy shifted over  
7 time, but clearly in terms of the data base  
8 there's instances where decisions were made  
9 when a dosimeter was missing, when a certain  
10 reading fell below a threshold, and what have  
11 you, to in fact make an administrative decision  
12 to assign a zero, a null (unintelligible), a  
13 null dose or a no data available factor, all of  
14 which I think conflates the question of, you  
15 know, is there in fact a real dose there and  
16 how is that missing dose going to be addressed?  
17 And again, I think that needs to be developed  
18 further in order to address the reliability of  
19 this broad and lengthy database that we're  
20 dealing with at Rocky Flats.

21 Another interesting factor is the presence of  
22 blank readings, which I don't think I've seen at  
23 other sites, but blank readings are ones where  
24 you don't really have a zero -- well, you don't  
25 even have a number, but it's recorded as a

1 blank. And prior to '64 those were instances  
2 where somebody was assigned a security badge  
3 with a dosimeter, but they essentially only had  
4 the security badge, they didn't have the  
5 dosimeter. After '64, of course the wearing of  
6 the combined badge and dosimeter was required,  
7 so one would expect not to see blanks after  
8 '64. In a cursory view of the database, we are  
9 seeing blanks -- not many, but seeing blanks  
10 after '64. So that's another issue which, by  
11 itself, may not be the earth-shaking issue, but  
12 collectively I think it gets to -- just wanted  
13 to make sure there's a clear picture of policy  
14 and practice in terms of the actual data itself  
15 over time.

16 And I guess the last item is the question of  
17 unmonitored neutron exposures and there the  
18 concern is that the early years, where the  
19 program was relatively primitive, the issue was  
20 not really having a good handle on what was in  
21 fact recorded in terms of neutron exposures,  
22 whether in fact there was a lot of unmonitored  
23 neutron exposures. And not surprisingly so,  
24 either, in the early 50's.

25 One thing we're trying to do is trying to shape

1           some sense of priority. We did cover a lot of  
2           ground, there's a lot of findings, and  
3           certainly I wanted to highlight those preceding  
4           findings as ones that we think we need to dig  
5           into, along with NIOSH and the Board. There's  
6           other issues -- not to say that these issues  
7           aren't important, in fact they are important,  
8           but they're probably more in the technical  
9           clarification or in the technical basis side of  
10          things. And again, I think these are easily  
11          addressed and I think, given our experience in  
12          issue resolution, we'll get some answers fairly  
13          quickly. I'm not going to go through these. I  
14          think you can read them for yourself. But  
15          certainly these are questions that came up in  
16          our review.

17          You have the matrix that we submitted. Again,  
18          that gets into a pretty big cataloging of  
19          issues. I guess my question is, is there any  
20          questions or anything else that you want to  
21          address?

22          **DR. ZIEMER:** Thank you, Joe. Let me pose a  
23          couple of questions and then other Board  
24          members may have some. Could you clarify the  
25          difficulty in obtaining the records from

1 University of Colorado? Is that just an issue  
2 of finding them, or is there an administrative  
3 difficulty in actually having them release  
4 them, or what's the nature of the issue?

5 **MR. FITZGERALD:** Well, I'll defer to NIOSH,  
6 but my understanding is just a matter of -- you  
7 know, they -- they -- this data, this  
8 information was developed by University in  
9 conjunction with DOE. And the ability of NIOSH  
10 to in fact gain access to and receive it from  
11 the University, not being a government agency,  
12 certainly that has been part of --

13 **DR. ZIEMER:** I wondered if they were having  
14 trouble finding the records--

15 **MR. FITZGERALD:** Oh, no, I don't think that's  
16 the issue, but I'll defer to Jim --

17 **DR. ZIEMER:** Okay.

18 **MR. FITZGERALD:** -- since the office of NIOSH  
19 has been doing this.

20 **DR. ZIEMER:** Ownership issue. Jim Neton.

21 **DR. NETON:** Yeah, this is Jim Neton. This is  
22 the data that were collected as part of a study  
23 that was actually funded by NIOSH. The Health-  
24 related Energy Research Branch funded a study  
25 to have the University of Colorado go out and

1 reconstruct internal/external doses for workers  
2 at Rocky Flats, and we're trying to obtain the  
3 raw database essentially, the individual data  
4 that were collected for that study, and we're  
5 just having a little difficulty getting it out  
6 of the University at this point. It's a matter  
7 of format and shape and is there additional  
8 work required to get that to us, that sort of  
9 thing, but we're working very diligently to try  
10 to get that information.

11 **DR. ZIEMER:** Thank you. And Joe, could you  
12 clarify, or perhaps Jim, when you say --  
13 talking about the blanks, does the record  
14 actually show nothing or does it have some  
15 wording that...s -- what --

16 **MR. FITZGERALD:** Well, it -- it --

17 **DR. ZIEMER:** When you say blank, what does  
18 that actually mean, there's nothing in the  
19 record?

20 **MR. FITZGERALD:** Yeah, it means there's  
21 nothing in the record, and there is some  
22 documentation which suggests the fact that the  
23 so-called blanks were in fact -- I don't want  
24 to say recorded --

25 **DR. ZIEMER:** So it's not a zero, there's no

1           number, it's just nothing?

2           **MR. FITZGERALD:**   Right.  It's a aberration of  
3           sorts because situations where you clearly had  
4           a unmonitored worker, and that was a little bit  
5           more understandable in the '50's when you had a  
6           situation where you had workers that were  
7           unmonitored.  '64 when you had the security  
8           badge with the TLD, that becomes less  
9           understandable and that's the part where in  
10          particular this use of a so-called blank would  
11          be something we'd want to see looked at and  
12          researched to some extent and to understand the  
13          implications.  What does that mean?  Does that  
14          mean an unmonitored worker, does it mean the  
15          data wasn't available?  And then of course that  
16          was another terminology that was used, "data  
17          not available," and in those situations  
18          sometimes the badge just wasn't returned.  You  
19          know, for whatever reason, the badge wasn't  
20          returned to be read and so that was recorded.  
21          And so you have -- I mean to point this out.  
22          Given the lengthy history going back in time,  
23          and the fact that while this stuff was  
24          formative in the '50's and early '60's, you had  
25          different, you know, approaches to how things

1           were recorded. And again, some of these may be  
2           perhaps resolvable in terms of some research,  
3           but taken together, we think it just raises  
4           some questions about the database that we, you  
5           know, certainly would want to see those  
6           answered. We would want to understand, with  
7           each of these categories, how's that play into  
8           somebody's dose? If you had a individual who  
9           had a blank, a null finding and a data not  
10          available, how would you go about  
11          reconstructing that dose? How would you --  
12          what kind of coworker information or model  
13          would apply in those instances? I think that  
14          would be the basis for making that judgment.

15         **DR. ZIEMER:** Robert Presley.

16         **MR. PRESLEY:** Joe, this is Bob Presley. We  
17          talking about one percent or we talking about  
18          50 percent?

19         **MR. FITZGERALD:** Oh, no, we're talking about --  
20          particularly in the 60's, the numbers get  
21          fairly small. And in terms of blanks you see  
22          certainly more of those in the 50's, and that's  
23          actually understandable. I guess I have less  
24          of a problem. My question is, if you see them  
25          after '64 when that was part of the security

1 badge -- and being at Y-12, I think Rocky was  
2 analogous -- that's hard for me to understand,  
3 because you certainly wouldn't be running  
4 around without security badge. And if you had  
5 a security badge without a TLD, is that the  
6 case or does that mean something else? So it  
7 raises a lot of questions. I'm not saying it's  
8 -- it's not a -- there's not an explanation,  
9 but right now it's unclear based on the site  
10 profile, and I think that's probably food for  
11 additional thought and research. And I think,  
12 again, we've picked that out in terms of  
13 talking to workers, looking at documentation,  
14 reviewing the GAO investigation, just seemed  
15 like there's a number of issues that pointed to  
16 questions of data reliability.

17 **DR. ZIEMER:** Board members, other questions?  
18 Michael?

19 **MR. GIBSON:** Joe, you mentioned that the  
20 assumed default particle size is one of your  
21 concerns.

22 **MR. FITZGERALD:** Yeah.

23 **MR. GIBSON:** Are there other assumed default  
24 factors that they use in the bioassay system at  
25 Rocky and other sites, such as the assumed date

1 of intake since the last sample, and the  
2 assumed solubility of that isotope where they  
3 sometimes use a 33 percent --

4 **MR. FITZGERALD:** Yeah, I think, you know, our  
5 concern is that there's certain simplifying  
6 assumptions made, but the problem with  
7 simplifying assumptions is that there's actual  
8 real data that's available on the five  
9 microgram -- micron AMAD. Some of the data we  
10 looked at in terms of the fires at Rocky  
11 suggest a lower, you know, AMAD in terms of the  
12 particles, and I guess our concern is that  
13 since that was a source of exposure, if you had  
14 workers that were perhaps exposed to that  
15 range, is five going to be sufficiently  
16 conservative. This is not a new issue. This  
17 is, you know, obviously one that we've debated  
18 and talked about at other sites. We raise it  
19 again because when you have actual data on  
20 particle size, our question is almost a kind of  
21 a policy question, I guess is what you're  
22 getting at, too, is how do you handle that? Do  
23 you actually apply the average, or do you in  
24 fact go beyond the default size in instances  
25 where workers were obviously exposed to maybe,

1           in this case, these fires where actual data  
2           shows a smaller particle size. And that's  
3           really the question in our mind.  
4           And for these other instances, the same  
5           question. You go to a simplifying default  
6           parameter, and I guess what we talked about  
7           earlier on some of these other issues at Rocky,  
8           including the median value, that comes fraught  
9           with some issues because you're going to have  
10          worker categories and you're going to have  
11          different operations, you're going to have  
12          different periods of time in production, where  
13          that average isn't going to apply. And which  
14          makes it important in the coworker model to  
15          look at subgroups and your operational history  
16          to look at certain operations and figure okay,  
17          the default applies except for these periods of  
18          time for these operations and for these  
19          subcategories of workers. In those instances  
20          we have real data that suggest that the  
21          exposure is higher. And, you know I think  
22          that's reasonable if in fact the data is  
23          available to do that.  
24          But we're seeing instances where the  
25          simplifying assumptions, although well thought

1 out and understood as something that's, given  
2 the amount of records you're looking at,  
3 certainly that's an efficiency. We're concerned  
4 that these sites are very heterogeneous in some  
5 cases and anything that's that overly  
6 simplifying is going to miss these instances  
7 where workers are going to potentially get  
8 exposed above that average.

9 So I agree, I think this is a generic issue. I  
10 think in this particular case we've pointed out  
11 the median value and the particle size as sort  
12 of examples to illustrate that particular  
13 issue.

14 **DR. ZIEMER:** Roy DeHart.

15 **DR. DEHART:** You had mentioned on the internal  
16 dose problem with the TS compounds that  
17 internal organs, GI organs, et cetera, you have  
18 some concern about, and that was identified I  
19 think you said with specific incidences perhaps  
20 that would give you issues of exposure. Do you  
21 have any idea of how you would identify  
22 individuals or groups of individuals who would  
23 be exposed to a higher internal dose like that?

24 **MR. FITZGERALD:** I think our perspective was  
25 if the target organ happened to be the GI tract

1           and if you work backwards, if you're doing --  
2           dealing with dose reconstruction that's maybe  
3           based on colon cancer or something of that  
4           sort, then I think it's clearly something that  
5           ought to be factored in, just because it may  
6           have contributing exposure value for that  
7           particular cancer. And so it's sort of one of  
8           these where -- and overall I think we're  
9           actually pretty close to the NIOSH position.  
10          All we're saying is that there are maybe  
11          exceptional cases, depending on the target  
12          organ and the cancer involved, where the  
13          insoluble plutonium actually may provide  
14          additional dose because of the insolubility and  
15          the fact of how it's handled.

16          **DR. DEHART:** Is it possible to identify those  
17          instances where that would have occurred, or  
18          are you just going to have to use a blanket  
19          assumption to those who have internal cancers?

20          **MR. FITZGERALD:** Well, I think you're going to  
21          have the systemic exposure. I just think that  
22          you're not going to probably apply it in terms  
23          of contributing dose unless you're, again,  
24          reconstructing dose by virtue of cancers that  
25          may have been in those target organs, the

1 systemic organs, the GI tract.

2 **DR. ZIEMER:** Other questions or comments,  
3 Board members?

4 (No responses)

5 Okay, thank you very much, Joe. Then let's  
6 turn to Jim Neton and Jim has some responses on  
7 some of these issues from NIOSH.

8 **DR. WADE:** While Jim is coming to the  
9 microphone maybe this would be a good time for  
10 me to sort of underscore the urgency of our  
11 deliberations on Rocky Flats. I'll repeat my  
12 comments when the full Board is seated, though.  
13 NIOSH received an SEC petition on February  
14 15<sup>th</sup>, 2005. It was to cover all employees at  
15 all locations at Rocky Flats for the years  
16 April '52 through the date of the submission of  
17 the petition, which was February 15<sup>th</sup>, '05.  
18 NIOSH qualified that petition on the 16<sup>th</sup> of  
19 June, 2005. As Joe mentioned, we did not  
20 receive SC&A's evaluation report until December  
21 8<sup>th</sup> of 2005. This is in no way to reflect  
22 negatively upon SC&A. They did that work  
23 timely; there were classification issues that  
24 had to be dealt with, there were reviews that  
25 had to be gone through with their report before

1           it could be received.

2           If you do the arithmetic you realize that NIOSH

3           has 180 days to make a recommendation to the

4           Board after it qualifies a petition. That

5           means we were due to make a recommendation to

6           this Board the middle of December. We were

7           just in receipt of SC&A's comments, and

8           therefore NIOSH sent a recommendation to the

9           Board. That recommendation was that we resolve

10          these issues before NIOSH would produce an

11          addendum. We hold to that. We think that's

12          the appropriate way to go. It is certainly

13          NIOSH's hope to have a definitive

14          recommendation to the Board before the Board

15          next sits, which would be in April of 2006.

16          In order to do that to the satisfaction of the

17          Board, these issues need to be resolved to the

18          degree that they can. So I only make the

19          little recollection of dates to stress the

20          importance of our working intellectually with

21          these opened issues that have been raised by

22          SC&A's review so that we can be in a position,

23          NIOSH can be in a position to make a definitive

24          recommendation to the Board and the Board can

25          be in a position to vote on that recommendation

1 when you meet next in April.

2 **DR. NETON:** Okay, thank you Lew. Lew actually  
3 has sort of summarized a little bit about what  
4 I was going to talk about in this first slide  
5 labeled time line. Some time ago when the  
6 Board initially started to embark on reviewing  
7 site profiles, Rocky Flats was one of the  
8 original I think eight that were recommended to  
9 SC&A to review, and SC&A has been going through  
10 and producing these. I think the Rocky Flats  
11 profile review was somehow being fast-tracked,  
12 as Lew indicated, because of the SEC submission  
13 that we received in the middle of February.  
14 Because of that, we have been working very  
15 closely with SC&A to try to resolve some of  
16 these issues.

17 As Lew indicated that we've just received the  
18 report in the beginning of December, a several  
19 hundred page document that outlines the issues.  
20 But as has been the case with sites that have  
21 SEC active SEC petitions, we've been trying to  
22 focus the issues related to the site profile  
23 review on those issues that are relevant to the  
24 SEC petition. That is, which of these issues  
25 in SC&A's reviews are show-stoppers? What

1 issues would essentially prevent NIOSH from  
2 doing dose reconstructions with sufficient  
3 accuracy, as defined in our regulations?  
4 Because of that, after the initial review came  
5 out, we've been now receiving these comment  
6 resolution matrices that are sort of summaries,  
7 summary findings as Joe went over, of the  
8 issues, the major issues. That allows us to  
9 focus a little better our efforts to bring  
10 these things to resolution.  
11 Now Joe's presentation was a little different  
12 than what I've done. I've actually put together  
13 sort of a little sketch as to our general  
14 feelings and comments on the 21 issues that  
15 you'll find in the comment resolution matrix.  
16 I think there are handouts available at the  
17 side table and I believe the Board actually has  
18 those as well, and you'll see on the right-hand  
19 side, you have what I call NIOSH's response.  
20 I'd like to caveat that to some degree, to  
21 point out that these are initial draft  
22 responses that we put together, just to put  
23 some of these issues on the table for  
24 discussion.  
25 So with that said, I think I'd just like to go

1 through and briefly, where I can, offer some  
2 insight as to what NIOSH believes the relevance  
3 and significance of the comments that exist in  
4 this resolution matrix. The first one I think  
5 Joe spent some time on, which is the bioassay  
6 MDA values for plutonium and americium.  
7 There's been an issue raised that they believe  
8 the MDA's that we've cited in the site profile  
9 are not sufficiently conservative. That is,  
10 they do not incorporate all sources of  
11 uncertainty that would go into that  
12 calculation. And in fact, we do agree that the  
13 variance or the uncertainty of the MDA values  
14 needs to be examined to some degree.  
15 Right now the MDA values propagate the  
16 traditional counting uncertainty in a blank, a  
17 relevant blank, and then they fold in the  
18 median values for other factors that influence  
19 the ability to detect an intake, such as the  
20 recovery -- the chemical recovery of the  
21 process, the volume of the urine that was  
22 obtained from the individual and maybe such  
23 factors such as the self-absorption of the  
24 alpha activity on the planchet. SC&A's  
25 recommendation was that we should take the 95<sup>th</sup>

1 percentile of those other factors, and possibly  
2 two out of the four factors, and use them to  
3 increase the MDA to be sufficiently  
4 conservative or claimant favorable.  
5 We disagree with that approach. We feel that  
6 that's not the best way to handle the  
7 situation. We believe that if you go back and  
8 look at ANSI 1330, there are indeed examples of  
9 how one propagates the overall uncertainty,  
10 let's call it in the 1330 standard a total  
11 propagated uncertainty. One would fold those  
12 distributions, the uncertainty added to the  
13 overall value of those distributions, into the  
14 over all value and then use the 95<sup>th</sup> percentile  
15 of that as your MDA value. We've done some  
16 analyses of this. We've looked at propagating  
17 in chemical recovery, self-absorption, those  
18 sort of parameters, and they do increase the  
19 value of the median that is presented in our  
20 site profile, but nowhere near the extent as if  
21 we were to just take the 95<sup>th</sup> percentile of the  
22 values and use them as the de facto value in  
23 the MDA calculation.  
24 So we're looking at this. We welcome some  
25 dialogue with SC&A on this issue. We believe

1           that we can adjust these to some degree, but  
2           the adjustments are going to be much less  
3           significant than I believe the finding  
4           currently indicates.

5           There's a second part of this issue which is  
6           the reporting limits. We totally agree that  
7           when the Rocky Flats health physics folks  
8           reported a value as less than a certain value,  
9           a reporting value, then we need to use that  
10          value in our calculation because we have then  
11          no a priori knowledge of what the measured  
12          value was. There's essentially sensor data.  
13          For administrative purposes they would report  
14          the value as say less than .88 dpm. That .88  
15          value was really based in administrative  
16          controls as opposed to some statistical  
17          calculation of the detectability of the  
18          process. And when those are used -- and I  
19          think prior to 1960 or even '62 they were  
20          exclusively using these reporting values -- we  
21          agree, we need to use those in our  
22          calculations. We would have no technical  
23          justification for doing otherwise. And I don't  
24          know that we imply that we wouldn't use them in  
25          the profile, the MDA was cited there. But

1           where there is a reporting value, we'll  
2           certainly use it.

3           The second issue, super S plutonium, again Joe  
4           Fitzgerald went over it in some detail, and I'm  
5           glad that we agree that this is not as  
6           significant an issue as previously thought.  
7           There's a couple things going on here. The  
8           first situation is that if there were much more  
9           insoluble plutonium compounds than can be  
10          modeled using the ICRP parameters, then in fact  
11          the dose to the lung would go up substantially.  
12          The reality is, if one looks at the dose  
13          reconstructions we're doing for the Rocky Flats  
14          site, almost any detectable lung value or even  
15          any detectable lung dose based on missed dose,  
16          even for class S, type S material, is over the  
17          50 percent compensability mark. The doses are  
18          just very large based on the current ICRP  
19          models. By us not defaulting to something even  
20          more soluble would merely increase the dose and  
21          increase the value over 50 percent. So it in  
22          practice makes very little difference in those  
23          situations.

24          Now when one looks at systemic organs, that is  
25          organs where the material has left the lung, we

1 would assume that the material, if it were  
2 insoluble -- the material that is in the  
3 systemic compartment would be overestimated  
4 using type S. In fact, we're assuming more is  
5 coming out of the lung than thought. So in  
6 that case, we would tend to overestimate the  
7 systemic organs using the current ICRP models.  
8 The one area that Joe correctly pointed out  
9 would be in the case of the GI tract where, if  
10 you have an underestimate of the lung dose --  
11 in other words you're measuring the urine and  
12 you think there's less in the lungs than there  
13 really is there, then indeed over a large  
14 period of time you would ultimately swallow the  
15 deposition in the lung, it would be cleared  
16 through the GI tract, and the GI tract dose  
17 could be substantially larger in that  
18 situation. We're addressing that to  
19 accommodate the situation. We've actually  
20 issued a contract with the Transuranic  
21 Registry. They're going back and looking at  
22 autopsy cases, whole body donor autopsy cases  
23 that they've analyzed for Rocky Flats intakes.  
24 We also have some data from the folks at Rocky  
25 Flats who have looked at some former workers to

1           try to develop a model for super S, as it's  
2           known, or very insoluble type S material and to  
3           accommodate the extra dose that would be to the  
4           -- would result to the GI tract as a result of  
5           the insoluble material. But it's really in  
6           that narrow instance where the GI tract type  
7           cancer is present that we would have to concern  
8           ourselves.

9           So again, we agree with SC&A that this is an  
10          issue. But by and large it's not a significant  
11          issue for the vast majority of our cases.  
12          Okay, the default particle size. We believe  
13          the profile does recognize that there were  
14          plutonium fires at Rocky Flats, and in fact  
15          they are categorized in the site profile. And  
16          our guidance to dose reconstructors is that  
17          when there is evidence that a worker was  
18          involved in a plutonium that may have been  
19          involved with a fire, a .3 micron particle size  
20          would be the recommended median value of the  
21          distribution. So we believe we're  
22          accommodating it.

23          The second part of the issue, though, is when  
24          we're dealing with bioassay data, the particle  
25          size largely does not -- the particle size

1 distribution that is inhaled does not largely  
2 affect the dose, because what we're doing is  
3 taking what's in the system. When you're  
4 measuring something in the urine, you're taking  
5 systemic -- systemic activity, and then that is  
6 -- the amount that's directly in the system is  
7 related to how much is in the systemic organs.  
8 So in this case it's sort of a self-  
9 compensating factor where the particle size  
10 really makes very little difference in the  
11 overall internal dose for systemic organs.  
12 But again, we certainly would be willing to sit  
13 down and discuss this with SC&A. We've had  
14 some early conference calls that Brant Ulsh of  
15 our staff has been chairing with SC&A on some  
16 of these early issues, but we have not had a  
17 chance, since this report has come out, to  
18 discuss these one on one.

19 The fourth issue here, the uncertainty of the  
20 plutonium lung counting calibration, this is  
21 related to the use of americium 241 as a tracer  
22 for plutonium intakes. It's a fairly  
23 widespread common practice in the industry that  
24 one ratios the amount -- americium 241 is much  
25 more easily detected in the lung, so one uses

1 the americium and then infers how much  
2 plutonium is there. The site profile itself is  
3 fairly conservative in the sense that it  
4 recommends default amounts of americium to  
5 plutonium ratios, certain parts per billion  
6 ratios, when the date of intake is known. But  
7 in fact if nothing is known about the date of  
8 intake and the age of the plutonium, there are  
9 some very conservative defaults that would tend  
10 to overestimate the amount of plutonium in the  
11 lung. So I -- we think that this is covered  
12 fairly well in the site profile.

13 This full equilibrium assumption for depleted  
14 uranium refers to, again, a sort of a -- I  
15 wouldn't say a trick, but a practice in whole  
16 body counting where, you know, one -- one  
17 cannot measure uranium 238 in the lungs  
18 directly. There are insufficient photons. So  
19 one normally result -- has to resort to using  
20 thorium 234 as an indicator of the uranium  
21 activity. Thorium 234 has a half life of about  
22 20-something days, 24 days; it grows in very  
23 quickly from the uranium parent. So anything  
24 over 80, 90 days old is at a substantial degree  
25 of equilibrium.

1           There were some practices at Rocky Flats where  
2           they attempted to separate out the thorium 234,  
3           which would result in disequilibrium. But we  
4           believe in general the assumption of this  
5           equilibrium is valid and reasonable, unless we  
6           know that we're dealing with specific cases  
7           where they have altered the equilibrium. And  
8           even then, if the intake is over 80, 90 days  
9           old, we believe that the assumption of full  
10          equilibrium is reasonably valid.

11          The interpretation of the NTA film, the nuclear  
12          track type A film, there are some issues and  
13          number seven is a similar issue with the  
14          neutron doses. We believe that we've had a  
15          claimant-favorable bias correction factor for  
16          these neutrons, and in fact we believe we've  
17          corrected for low energy under-monitoring.  
18          However, there is this new neutron study that  
19          has been done at the Rocky Flats sites to  
20          reassess the neutron doses to workers in the  
21          early days. That study has been available to  
22          us fairly recently. We've looked at that. We  
23          are now using those new data to do dose  
24          reconstructions for individuals who have data  
25          that were re-evaluated under the conditions of

1           those studies. But we are also going to take  
2           the new nuclear neutron data and incorporate it  
3           into the site profile to re-do the bias  
4           correction factors. So that is something that  
5           we will be doing.

6           Okay. All right, some of these later ones go a  
7           little more quickly. They're not quite as  
8           significant. As Joe pointed out, they're more  
9           in the lines of -- you know, we need to address  
10          these but they're not, in our position or mind,  
11          show stoppers.

12          This exposure geometry, angle of dependence,  
13          this is something that's been raised in other  
14          site profile reviews. In fact, you know, we  
15          have -- in our profile and in the  
16          implementation guide -- had some discussions  
17          about how to deal with correction of badges on  
18          the chest to certain exposure geometries such  
19          as rotational and isotropic and PA and those  
20          sort of things. We have recently adopted the  
21          position that these will all be modeled using  
22          the AP geometry, the anterior/posterior  
23          geometry. It's the most claimant-favorable  
24          thing to do, and unless we can clearly indicate  
25          that the exposure situation was otherwise,

1 we'll do that. We've adopted that by and large  
2 in our dose reconstruction program and I think  
3 -- I think SC&A would agree that if we adopt  
4 this approach, this issue becomes not  
5 significant.

6 There are some other factors that were pointed  
7 out related to maybe some environmental  
8 conditions and those sort of things, and we do  
9 need to address those, the uncertainty  
10 associated with those conditions. And we  
11 recognize we need to explain those a little  
12 better.

13 This missed dose issue, unfortunately the  
14 response that you see in here was I believe cut  
15 and pasted from something wrong. It's  
16 addressing an internal dosimetry issue. Number  
17 nine is really addressing an external dose. So  
18 that, I think, falls into the category that Joe  
19 was speaking about that was related to these  
20 other factors like wearing badges and  
21 environmental levels of exposure that weren't  
22 subtracted properly from the badge, and those  
23 sort of things. So I guess I could say right  
24 now I'm just not prepared to address that  
25 because I've got the wrong response here.

1           Number ten, recycled uranium, we agree that we  
2           need to increase the language in there a little  
3           bit and explain some -- in somewhat more detail  
4           how we're going to deal with the recycled  
5           uranium issue, although we need to be careful  
6           when we're talking about recycled uranium.  
7           There is recycled uranium that is recycled that  
8           had already been through a reactor that has  
9           trace contaminants of transuranic materials.  
10          There's also uranium that is just in general  
11          recycled, meaning you've got scraps and stuff  
12          that has not been through a reactor, is going  
13          to be re-melted and reprocessed. I think one  
14          of the comments that SC&A made related to  
15          recycled uranium was talking about that type of  
16          material. We don't believe there's any  
17          dosimetric issues with that, so we just need to  
18          be careful when we talk about recycle, we mean  
19          transuranically contaminated recycled uranium.  
20          But we will -- we will revisit the site profile  
21          and put some additional language in there to  
22          help explain what we're talking about.  
23          Okay, unmonitored internal dose. This is --  
24          let me just look at my notes here. This is  
25          related to when you have no monitoring data at

1 all. And NIOSH, as we've heard in the past,  
2 has been developing coworker models. We'll  
3 take monitoring data from workers who were  
4 badged, who we could hopefully demonstrate were  
5 more heavily exposed than the unmonitored  
6 workers, and develop some lognormal  
7 distributions and apply those. That's not in  
8 this profile. I mean, just like in the Y-12  
9 site profile you didn't see that. We believe  
10 that that should be covered in another  
11 document, and it will be. The site profile  
12 itself, as we talked in the past, is not an  
13 all-encompassing document that covers every  
14 single issue that could possibly be there.  
15 This is generic guidance to dose  
16 reconstructors. But we will deal with the  
17 unmonitored dose in a separate document.  
18 Okay, elevated ambient external radiation.  
19 This again is a -- one of the issues that -- I  
20 think it was on Joe's last slide, which is the  
21 other issues that we need to visit but are not  
22 show stoppers. There were some issues that we  
23 are aware of at Rocky Flats where badges were  
24 stored in higher elevated areas near where  
25 workers were exposed, so we were -- we might be

1           inappropriately subtracting badge rack  
2           background. In fact, you know, the badges were  
3           stored in the areas where the workers were  
4           being exposed. If one subtracts that, then you  
5           have a low est-- a low -- biased estimate of  
6           the dose on the low side. We looked at that in  
7           some detail when the profile was being put  
8           together. I think we just need to explain a  
9           little better, you know, what we looked at and  
10          what our position is in that area.  
11          These next few issues, partial body exposures,  
12          has to do I believe with glove box workers and  
13          that sort of thing, and we're going to have to  
14          do a little better job explaining what we're  
15          doing in the site profile in that area.  
16          This occupational external -- occupational X-  
17          ray dose, I think this comment "assuming full  
18          equilibrium from lung counts is reasonable", is  
19          not the appropriate comment. I'll -- I'll take  
20          blame for that. But what we really meant to  
21          say here was that we don't believe that  
22          occupational X-ray dose as a result of an  
23          injury is covered in this program. We do  
24          include all X-ray doses related to being a  
25          condition of employment, such as if one wanted

1           to be -- had to be an asbestos worker at Oak  
2           Ridge in some years, you needed to have an  
3           annual chest X-ray to be an asbestos worker, or  
4           early years at Lawrence Liver-- or Los Alamos  
5           one needed to have routine chest X-rays to be a  
6           uranium worker. Those we believe are relevant  
7           and should be covered as part of this program.  
8           But when you break your leg or have a back  
9           injury and go, we view that as sort of a normal  
10          occupational X-ray that is there that has  
11          medical benefit, and therefore we are not  
12          including these in our -- under the regulation  
13          as covered exposure.  
14          Fifteen, ingestion dose, we acknowledge that we  
15          need to do a little better job addressing that.  
16          However, I would point out that when one deals  
17          from bioassay measurements, ingestion dose is  
18          covered and that one just needs to figure out  
19          whether ingestion or inhalation provides the  
20          higher dose to the worker.  
21          Again, I'll just whip through these. Air  
22          monitoring dose, that has to do with  
23          environmental data. Again, we're committed to  
24          explaining that in some more detail in the site  
25          profile.

1           Soil resuspension, similar issue, we do believe  
2           we've included resuspension, but again, we will  
3           increase the level of detail in the profile, as  
4           well as number 18, hands and wrist doses. That  
5           will be addressed in the next issue. And 19 as  
6           well, industrial X-ray and neutron sources.  
7           Although I will say that we're hard pressed to  
8           find really any additional sources of neutron  
9           exposures outside of the plutonium worker  
10          areas. There may have been some neutron  
11          generators, whether they're californium sources  
12          or what not. But unless we have, you know,  
13          significant evidence of very high enriched  
14          uranium with a low Z material or something,  
15          we're having a little trouble coming up with  
16          other sources of neutrons. But we'd -- we  
17          certainly would like to talk to SC&A about that  
18          and see what their -- where -- their thoughts  
19          on where these other other sources could have  
20          come from.

21          And 21 and 22, again, post-production  
22          operations -- there's some concern that we  
23          didn't cover in the site profile, for instance,  
24          external exposure during the D&D phase, the  
25          decontamination and decommissioning phase of

1 the operation. And we are committed to going  
2 back and making that clearer and beefing it up  
3 a little bit. And the same as 20 -- in comment  
4 21, with the phases of operation. That's a  
5 very -- like 10,000 foot level summary of where  
6 we are. We have not had a long time to review  
7 these, and you know, we welcome the opportunity  
8 to sit down with SC&A and to try to work these  
9 out and figure out which ones are extremely  
10 relevant to the SEC petition and bring these to  
11 closure as soon as possible.

12 **DR. ZIEMER:** Thank you, Jim. Let me begin with  
13 this question. Again, to try to understand  
14 this issue on item one, which has to do with  
15 the MDA values and what are selected. If I'm  
16 understanding what the difference in the two  
17 views, one is that you -- I believe SC&A is  
18 suggesting that you -- you'll have a  
19 distribution. You take the 95<sup>th</sup> percentile and  
20 then that becomes part of a new distribution  
21 that eventually there'll be another 95<sup>th</sup>  
22 percentile? Is that what --

23 **DR. NETON:** Well --

24 **DR. ZIEMER:** -- is happening here?

25 **MR. FITZGERALD:** I guess one concern I have is

1           that I'm not sure where the 95<sup>th</sup> percentile  
2           distribution we -- I think that two out of four  
3           parameters was the suggestion -- you know,  
4           we're saying one possible way to go is two out  
5           of four parameters, take the extreme values of  
6           those two --

7           **DR. NETON:**     Right

8           **MR. FITZGERALD:**  -- as a bounding mechanism, no  
9           -- no distribution.

10          **DR. ZIEMER:**    Oh, no distribution.

11          **DR. NETON:**  Well, what -- we would not use --  
12          would not appropriate the distribution of those  
13          values in the overall uncertainty, which is a  
14          traditional MDA calculation.  You take an  
15          uncertainly distribution and pick the 95<sup>th</sup>.  
16          What SC&A is asserting is that our  
17          distribution, the bell curve, is slightly  
18          narrower than it should be because we haven't  
19          incorporated the uncertainty in chemical  
20          recovery, self-absorption.  So indeed, that  
21          bell curve will widen.  But as Joe just pointed  
22          out, they are suggesting we stick with the bell  
23          curve which is the counting error, and then use  
24          the 95<sup>th</sup> percentile of the recovery for every  
25          single sample.  And then that 95<sup>th</sup>--

1           **DR. ZIEMER:**    Discrete values, though.

2           **DR. NETON:**   Yeah, discrete values.  So instead  
3           of incorporating the uncertainty, the total  
4           property of uncertainty, we would just take the  
5           highest 95<sup>th</sup> percentile for each of those  
6           parameters -- and that has a dramatic effect on  
7           the MDA's.  It raises them by a factor of two,  
8           three or more, and we don't believe that that's  
9           reasonable, given that we're already  
10          incorporating these MDA's as missed dose  
11          calculations and assigning workers doses that  
12          they possibly didn't even receive.  So we have  
13          to careful about how far we -- we sort of take  
14          this calculation.  And again, to their -- SC&A  
15          did not -- it was a suggestion.  They didn't --

16          **DR. ZIEMER:**    Yeah.

17          **DR. NETON:**    -- they didn't say this was the  
18          only way one could do...

19          **DR. ZIEMER:**    Gen Roessler.

20          **DR. ROESSLER:**  On your point number two where  
21          you where you talked about the super S  
22          plutonium in the dose to the GI tract and going  
23          to the Transuranic Registry to get information,  
24          I have two questions on that.  Will you get  
25          that in time, and the second one, do they have

1 sufficient data, however you define sufficient,  
2 to get that information?

3 **DR. NETON:** Yeah. Yeah, the cases have already  
4 been analyzed and we're getting data as we  
5 speak. There have been four or five other  
6 cases that Rocky Flats has reviewed, and we've  
7 already looked that. We've -- we're trying to  
8 develop a model that incorporates this, and  
9 there is clear evidence that in some cases the  
10 plutonium just re-sits in the lung. I mean it  
11 just does not leave the lung, and you know, we  
12 need to factor that in. It's a little  
13 difficult, though, as you suggest, to -- you  
14 know how many data points do you need to really  
15 get a handle on a new model? But we believe  
16 that we'll have this resolved before -- before  
17 we -- before the Rocky Flats SEC petition  
18 evaluation.

19 **DR. ZIEMER:** Michael?

20 **MR. GIBSON:** Jim, on number three you mention  
21 that particle size is not significant factor  
22 when you have enough bio-- when you have  
23 bioassay results.

24 **DR. NETON:** Right.

25 **MR. GIBSON:** Are you talking about -- by

1 bioassay results, are you talking about the  
2 amount of activity seen in the bioassay and  
3 then making your own calculation, or are you  
4 talking about the assigned dose from Rocky  
5 Flats from that sample?

6 **DR. NETON:** No, we -- we'd never use any  
7 assigned dose from any DOE sites from a sample.  
8 We always independently calculate our own doses  
9 to the organs, and so this would be our  
10 interpretation of the dose based on the  
11 measured value in the urine or even the MDA.  
12 Even if there's no activity measured in the  
13 urine that's above the detection limit, we will  
14 assume a certain value would have been there.  
15 But, yeah, it's our own calculation.

16 **DR. ZIEMER:** Other comments or questions?

17 **DR. WADE:** I have a question -- a question  
18 just generally. Jim, just how do you see this  
19 unfolding -- and Joe as well -- I mean just  
20 since the Board will -- will deliberate, you  
21 know, tomorrow as to steps to take. But while  
22 you're up here and this is fresh in our mind,  
23 how do you see this unfolding?

24 **DR. NETON:** Well, I don't want to speak for the  
25 Board, but if the past provides any insight, I

1           would suspect that the Board would put together  
2           a working group that would work to help NIOSH  
3           and SC&A come to resolution on these comments.  
4           We would hold several working group discussions  
5           as well as some technical interchanges between  
6           SC&A and us over the telephone with published  
7           minutes and, you know, make this as transparent  
8           as possible, inviting relevant stakeholders to  
9           listen in as we have in the past.

10          **DR. ZIEMER:**     Joe, you want --

11          **MR. FITZGERALD:**   I'd like to add --

12          **DR. ZIEMER:**     -- to add to that?

13          **MR. FITZGERALD:**   -- I think the Y-- again, the  
14           Y-12 process has worked very well in terms of  
15           converging on the most important issues, as  
16           well as narrowing differences. I would say,  
17           you know, the same process would be effective.

18          **DR. ZIEMER:**     A number of these it appears that  
19           you're fairly close. There's others where NIOSH  
20           has agreed to do some clarifications and  
21           updates --

22          **DR. NETON:**     Right.

23          **DR. ZIEMER:**     -- and perhaps items like the  
24           first one --

25          **DR. NETON:**     Yeah.

1           **DR. ZIEMER:**    -- as you get together at the  
2           table, we can come to some sort of closure.

3           **DR. NETON:**   Yeah, I think we can resolve that  
4           number one fairly quickly.

5           **MR. FITZGERALD:**  Yeah, I must say, this -- this  
6           is not the only time that we've started --

7           **DR. ZIEMER:**    Right.

8           **MR. FITZGERALD:**  -- exchanging issues and  
9           clearly converged on a couple of these just in  
10          the process of putting the report together  
11          (unintelligible) --

12          **DR. ZIEMER:**    Yeah.

13          **DR. NETON:**    Yeah.  I will say for clarity,  
14          SC&A did make us aware of this number one issue  
15          well before their report was published --

16          **DR. ZIEMER:**    Sure.

17          **DR. NETON:**    -- so we had some knowledge of this  
18          prior to this meeting.

19          **DR. WADE:**     Sometimes it's appropriate that we  
20          wait for one or the other parties to do some  
21          work to get together.  I'm sensing maybe you're  
22          ready to get together very soon.

23          **DR. NETON:**    I think so.

24          **DR. ZIEMER:**    Okay.

25          **DR. WADE:**     Joe, is that correct?

1           **MR. FITZGERALD:** Yeah, I think that we pointed  
2           out a number of things that -- frankly, even  
3           this was helpful just to bring us up to date on  
4           what NIOSH has done as far as looking at some  
5           of the issues, so I think the step would be  
6           maybe to clear off on some of the easily  
7           cleared-off items and then start focusing on  
8           ones that the Board would need to have better  
9           information on.

10          **DR. ZIEMER:** Okay.

11          **MR. FITZGERALD:** Clearly SEC's significant  
12          issues, perhaps.

13          **DR. ZIEMER:** Okay.

14          **DR. WADE:** Don't read my questions as sort of  
15          meddling. I just have a sense that this is an  
16          issue that we want to work with some dispatch,  
17          so thank you.

18          **DR. ZIEMER:** Other comments, questions, Board  
19          members? We don't necessarily need to take any  
20          actions. We will report to the full Board  
21          tomorrow what was -- what was covered. The  
22          sort of consensus might be that what we just  
23          heard described would indeed need to occur and  
24          that, without objection, I think we would  
25          recommend to the full Board that this process

1           that had been used in other cases be carried  
2           forward in this case to try to reach resolution  
3           on many of these issues. Is that agreeable?  
4           Yes, Henry?

5           **DR. ANDERSON:** Yeah, I just wanted to ask the  
6           two -- which of these issues do you see as  
7           being critical to the petition sort of  
8           activity? 'Cause I think those are ones where  
9           we really need to resolve first if -- I mean  
10          the others -- a lot of these are -- they'll be  
11          taken into account in the next revisions, well,  
12          we really can't determine whether the revisions  
13          are in fact addressing -- how they've addressed  
14          the issue. But certainly that -- a lot of  
15          those seem to be and are useful issues to  
16          address, but not necessarily SEC petition-  
17          related. So which of these are the ones that  
18          we need to focus on the most, I guess is the  
19          question.

20          **DR. ZIEMER:** Joe, can you give us a partial  
21          answer from SC&A's perspective? I think you  
22          somewhat have them ordered by priorities, so --

23          **MR. FITZGERALD:** Yeah, I -- I think  
24          (unintelligible) --

25          **DR. ZIEMER:** -- is it the first seven or

1 something like that?

2 **MR. FITZGERALD:** He's waving his hand to me.  
3 Yeah, we -- I wanted to order that that way  
4 without getting into fingering anything as SEC  
5 or not SEC. I think that's obviously your  
6 province. What we wanted to do, though, is  
7 illustrate the issues or findings which we felt  
8 were important or relevant to that process, and  
9 then issues that were important to the site  
10 profile, as you point out. And I think that's  
11 the distinction we're making -- the same thing  
12 we're doing with Y-12, as you will hear later.

13 **DR. ZIEMER:** And if at the next meeting we  
14 learn -- that is the next full meeting of the  
15 Board -- we learn that there are unresolved  
16 issues, the Board may have to make a specific  
17 decision on and do the resolution. Roy DeHart.

18 **DR. DEHART:** As far as procedure is concerned,  
19 is it possible that the site profile findings -  
20 - where we're standing now, what looks like  
21 perhaps a resolution coming along -- and the  
22 SEC petition can run in parallel? The Board's  
23 taken a very hard position that they want the  
24 site profile completed before we complete an  
25 SEC because --

1           **DR. ZIEMER:**    In essence, the -- NIOSH has  
2           taken an action on the site profile.  The  
3           action was that this -- essentially this  
4           process be carried out prior to a final  
5           determination.  But Lew, do you have a partial  
6           answer to that as well?

7           **DR. WADE:**  Yeah, I think, Dr. DeHart, it's  
8           really a matter of degree.  I mean we lived  
9           through the experience with Mallinckrodt where  
10          we had an SEC petition in front of us and a  
11          moving target relative to agreement on a site  
12          profile, and I don't think we want to  
13          experience that again.  I do think that there  
14          are a number of issues that I see here that can  
15          and should be resolved before we would expect  
16          the Board to be in a position to vote on an SEC  
17          petition.  I think there are others that really  
18          can wait, and I think -- you know, Henry's  
19          question was obviously the correct question.  
20          You know, how do we bin these, and I think  
21          we're starting to understand that.  So yes, I  
22          think they can run in parallel.  But when we  
23          come to the Board and ask for a decision, I  
24          think it's important that the Board would have  
25          in its possession the information it would need

1 to act on that decision reasonably.

2 **DR. NETON:** I think Lew's summarized it well.

3 I would just like to add that as of late we've  
4 been requested by the Board to also provide  
5 example dose reconstructions, so those in  
6 themselves go a long way toward demonstrating  
7 how we would actually do it. Whether there is  
8 a complete, signed-off revision to all issues  
9 in the site profile or not, one could get a  
10 good sense from that dose reconstruction  
11 example.

12 **DR. WADE:** John Mauro has a question. I should  
13 point out as John walks to the microphone, John  
14 has been very helpful in trying to work through  
15 this process and understand the trade-offs  
16 involved. So John, what do you have to tell  
17 us?

18 **DR. MAURO:** I'd like to sort of stick my neck  
19 out a little bit. And I'm John Mauro. I head  
20 up the crew out at SC&A. And listening to this  
21 discussion to move the flags forward a little  
22 bit, I see three areas that perhaps -- and I'm  
23 really throwing this out as a -- almost like a  
24 -- am I looking at correctly, 'cause I'm  
25 looking at it just as everyone else is looking

1 at it. It seems to me that if you're going to  
2 try -- out of the long list of 21 items, three  
3 of them, in my mind, merge as possibly being  
4 the ones that could be -- fall into the  
5 category that you would say SEC. Okay, you  
6 know.

7 And the first one had to do with data  
8 reliability. You know, when all is said and  
9 done, all these approaches that we're using to  
10 reconstruct coworker data, et cetera, we need  
11 to put the data reliability questions to bed so  
12 that we could say we're standing on a sound  
13 rock, first and foremost. In fact, I would say  
14 just about across the board data reliability is  
15 the heart and soul of dose reconstruction.  
16 The other area that I feel puts us in a  
17 position that would challenge our ability to do  
18 dose reconstruction, and it turns out to be a  
19 small segment, but it's -- in other words we're  
20 talking about individuals with GI tract cancer,  
21 can we reconstruct their dose in light of the  
22 fact that you might have these high-fired  
23 plutonium where you have to use Transuranic  
24 Registry data to see if in fact you have a  
25 mechanism to reconstruct the dose to

1 individuals who may have come down with a  
2 cancer of the GI tract. We need to be able to  
3 say yes, we have a way to at least put an upper  
4 bound -- a reasonable, plausible upper bound --  
5 on that dose. Sounds like right now we're not  
6 there. So I put that in the category that that  
7 needs to be resolved. And believe me, I'm  
8 putting this on the table more to advance the  
9 dialogue so at least I'll have -- I could give  
10 you my perspective.

11 And the final one is that -- the business of  
12 the chest count being the way in which you get  
13 a handle on plutonium. That is, when you're  
14 taking your whole body or your chest count,  
15 you're looking for the americium, and from --  
16 based on the americium you could default to say  
17 okay, we see how much americium there is in the  
18 chest, therefore we can predict what is  
19 possibly the lung burden of plutonium. From  
20 speaking to our folks that have been looking at  
21 this issue, the degree to which that could be  
22 done reliably and in a claimant-favorable way  
23 in situations where you have relatively small  
24 amounts of americium -- and as I understand it  
25 there are circumstances where if you have

1           freshly processed separated plutonium, you may  
2           not very well have very much americium present  
3           -- leaves you in a situation where, okay, if we  
4           have a situation where that exists, you're in a  
5           tough spot. How are you going to get a handle  
6           on the plutonium in the lung if you can't  
7           really trust the ratio of plutonium to  
8           americium? If that circumstance could exist,  
9           we have ourselves a situation where how are we  
10          going to do that dose calculation?

11          So in the interest of furthering the dialogue,  
12          at least from my perspective, I see those three  
13          out of the 21 as the areas where I'd sure like  
14          to zero in and say let's see if we can put this  
15          one -- these to bed. I hope that helps.

16          **DR. ZIEMER:** Yeah. Thank you.

17          **DR. WADE:** Just one more little observation  
18          about time. Tentatively, when last we met, we  
19          scheduled a possibility of a call of the Board  
20          on March 14<sup>th</sup>, and then we have scheduled a  
21          full Board meeting the end of April. You know,  
22          we now have the positions clearly identified on  
23          Rocky Flats, the need for the parties to get  
24          together and start to, through working group,  
25          work issues. We could look at that call on

1 March 14<sup>th</sup> as an opportunity for the Board to  
2 review this information one more time.

3 Subsequent to that I would see NIOSH issuing an  
4 evaluation report, and then a full Board  
5 deliberation. So I think we have -- we have  
6 time to do this right, but I think it's  
7 important that we reflect on all of those  
8 questions.

**TASK III REVIEW - STATUS/DISCUSSION**

**MR. MARK GRIFFON, ABRWH**

**DR. JOHN MAURO, SC&A**

**MR. STUART HINNEFELD, NIOSH**

9 **DR. ZIEMER:** Thank you. We're going to proceed  
10 now. Another item on our agenda -- again, we  
11 have altered things a bit to accommodate the  
12 fact that Mark Griffon, who has the lead on the  
13 Y-12 discussion, was snowed out and has not yet  
14 arrived. But we will move to the Task III  
15 review, which is the last item on the agenda  
16 sequentially, as it was distributed, Task III  
17 review status. In this case John Mauro from  
18 SC&A and Stu Hinnefeld from NIOSH can take us  
19 through the discussion there.

20 Now let me identify first the documents that  
21 you should have.

22 **DR. WADE:** Under the tab.

23 **DR. ZIEMER:** There is a tab, Task III procedure

1 findings matrix. Remember, Task III was the  
2 task of reviewing NIOSH's procedures. That is,  
3 the review conducted by our contractor of  
4 NIOSH, and actually of ORAU, procedures. And  
5 we have looked at the findings matrix in the  
6 past. We've looked at the initial findings,  
7 we've looked at the NIOSH response. And the  
8 Board actually took some actions I think before  
9 --

10 **DR. WADE:** Right, I think the Board has acted  
11 fairly completely on the external dose portion  
12 of this.

13 **DR. ZIEMER:** Right.

14 **DR. WADE:** The internal dose is still a work in  
15 progress.

16 **DR. ZIEMER:** And what you have -- in your  
17 folder you have the Board actions that were  
18 taken on the external portion. And then if you  
19 get to the internal dose procedures, you find  
20 there are no Board actions listed because we  
21 took none at that point. So, okay, Stu.

22 **MR. HINNEFELD:** Well, this -- I'm --

23 **DR. ZIEMER:** Stu Hinnefeld from NIOSH.

24 **MR. HINNEFELD:** -- Stu Hinnefeld from NIOSH.

25 **DR. ZIEMER:** Is that on?

1           **MR. HINNEFELD:** I'm okay. Just to refresh  
2           everybody's memory, we did meet -- we've been  
3           following the six-step convergence process on  
4           the procedure review findings just as we have  
5           on site profile reviews. And with the  
6           procedure review findings, we did follow the  
7           converging conversation step -- on the external  
8           dosimetry procedures only -- at a working group  
9           meeting in Cincinnati some months ago, and a  
10          series of recommendations to NIOSH were  
11          established at that. And we're proceeding to  
12          implement those recommendations, and here in a  
13          minute I'll give you a real quick status on  
14          where we are on the implementation of those  
15          actions.

16          With respect to the external -- or the internal  
17          dosimetry procedures and the claimant interview  
18          procedures, that -- there's been no converging  
19          conversation yet about -- of those findings and  
20          our initial response. And so following the  
21          pattern that would have -- that's been  
22          established so far, the next action would have  
23          -- would be a working group meeting to discuss  
24          -- where we would discuss with SC&A and the  
25          working group would help us converge on a

1 common understanding of the depth of the  
2 findings for the internal dosimetry procedures  
3 and claimant interview procedures. So history  
4 indicates that when we schedule workgroup  
5 meetings with site profile reviews on the  
6 table, they pretty much subsume the entire  
7 workgroup meeting, and so procedure issues  
8 don't necessarily get there. It may be  
9 worthwhile to have a meeting for this topic or  
10 for this topic and dose reconstruction report  
11 review type topic, as opposed to adding it to  
12 the site profile reviews, because the site  
13 profiles really do seem to overwhelm the day on  
14 those meetings.

15 So that's where we are today. We have -- NIOSH  
16 now has some -- our initial response to the  
17 findings that are on this matrix that is  
18 distributed today on the internal dosimetry and  
19 the claimant interview procedures. We can  
20 provide that electronically to SC&A and the  
21 working group members for convenience for  
22 working, but I think the next topic -- the next  
23 subject would be to have that converging  
24 meeting to discuss the internal dosimetry and  
25 claimant interview procedures.

1           Now with respect to status on the  
2           recommendations from the external procedures,  
3           the first -- external dosimetry procedures, the  
4           first several items in the matrix -- very many  
5           of these comments refer to sections of our  
6           implementation guide, IG-001, which is the  
7           external dosimetry implementation guide. That  
8           revision to incorporate these changes is  
9           drafted. We want to make sure -- the reason  
10          it's not out yet is we're try -- we want to make  
11          sure we get consensus among ourselves about the  
12          approach that's being taken on the dose  
13          conversion factor changes. There are certain  
14          things we'll have to change with respect to the  
15          dose convers-- organ dose conversion factors  
16          that are published in that document. And so  
17          we're trying to make sure that we have -- you  
18          know we've -- among ourselves agree that we've  
19          done the science correctly to do those, to get  
20          those changes, and then that will proceed  
21          forward.

22          All the rest of the revisions are ready to plug  
23          in and we were just going to do the one  
24          revision. So we were getting the DCF's  
25          finalized. So that's our status on -- that

1 covers all the recommendations through -- of --  
2 that reflect IG-001.

3 The next document on here is then of course  
4 Procedure 6, which is our contractor's  
5 Procedure 6, which are the same findings and  
6 the same changes then will be incorporated into  
7 that that are incorporated into IG-1.

8 Following Procedure 6 I believe is our  
9 Procedure number three which was kind of a  
10 general description of how dose reconstructions  
11 are done. It was written very early on when  
12 there was a general -- when it was like our  
13 first procedure of how to do dose  
14 reconstructions. In the meantime our  
15 contractor, ORAU, has written very many  
16 procedures and technical documents about how to  
17 be -- how to do dose reconstructions and so  
18 this guidance has been essentially made  
19 obsolete by the later instructions, and so  
20 we've canceled Procedure 3. That one has been  
21 canceled. That was the recommended action;  
22 that's been done.

23 The next two documents are Technical  
24 Information Bulletins number eight and number  
25 ten. These findings relate to some confusing

1 language throughout. We agreed with that. Our  
2 contractor is revising those Technical  
3 Information Bulletins to more clearly reflect  
4 what's intended to be done when people are  
5 following them, and we expect to see those  
6 revisions next month from our contractor.  
7 With the OTIB-7 having to do with environmental  
8 occupational exposure, that one is hardly used  
9 at all anymore. I believe that one may  
10 actually have been canceled. I apologize, I'm  
11 not completely up to date on OTIB-7, but I can  
12 probably find out before the end of the meeting  
13 where we are on that. It's barely used at all  
14 since we now have site-specific information  
15 about environmental exposure. This was a  
16 complex-wide estimating approach that was used  
17 before very many site profiles were done.  
18 The next two are OTIB-6, okay. OTIB-6 is again  
19 undergoing revision by our contractor but I  
20 don't have an expected date yet on when we're  
21 going to receive that. Has it been revised  
22 already? Okay, Hans is more up to date than I  
23 am. OTIB-6 has been revised to include these  
24 recommendations. The two OCAS TIBs, number six  
25 and seven, reflect -- they provided specific

1 guidance to how to deal with certain issues  
2 that came up at the Savannah River Site that  
3 the site profile as published originally didn't  
4 address. The recommendation is to get the site  
5 profile modified to address this so you can get  
6 rid of these so you don't have this confusion  
7 of several different documents, and they  
8 weren't terribly -- and they weren't all  
9 consistent, either. And so that again, the --  
10 depends on the revision of the site profile by  
11 our contractor and we're st-- we are awaiting  
12 that. We have not received that yet. I don't  
13 have a scheduled delivery date for that, but I  
14 don't believe it will be too far behind the two  
15 procedures, OTIB-8 and OTIB-10.

16 And, let's see -- I believe that completes it,  
17 right. That completes the set of actions we  
18 were going to do from the external procedures.

19 **DR. ZIEMER:** Thank you, Stu. I think it might  
20 be helpful, and perhaps you could summarize  
21 this in writing for the Board after this  
22 meeting, just to have a list that we can lay  
23 side by side -- for example, you've told us I  
24 think that the revision on 06 is now complete.

25 **MR. HINNEFELD:** Right. OTIB-6, right.

1           **DR. ZIEMER:** Would that be helpful, Board  
2 members, I think just to have --

3           **MR. HINNEFELD:** You want like a status column?  
4 Or --

5           **DR. ZIEMER:** Yeah, something that would  
6 parallel each of the items, just --

7           **MR. HINNEFELD:** Sure.

8           **DR. ZIEMER:** -- if the revision is complete so  
9 we know that. I don't actually recall if the  
10 Board had actually decided it wanted to see  
11 these revisions. I think -- I think we just  
12 needed to know -- I don't think we --

13           **MR. HINNEFELD:** Right.

14           **DR. ZIEMER:** -- need to see them, we needed to  
15 know that they're complete. And in the future  
16 and if the Board wants revised things reviewed  
17 by the contractor, we can do that. But I think  
18 it would be helpful if we had kind of a status  
19 report that's -- and we understand the low  
20 priority ones. We weren't expecting those  
21 revisions --

22           **MR. HINNEFELD:** Right.

23           **DR. ZIEMER:** -- to occur in any --

24           **MR. HINNEFELD:** In many cases when a revision  
25 was underway anyway, for instance --

1           **DR. ZIEMER:** Right.

2           **MR. HINNEFELD:** -- if there was a medium  
3 revision, a moderate revision on the same  
4 document, we could try to incorporate the low  
5 ones if it were fairly easy to do.

6           **DR. ZIEMER:** Right. And I think it would be  
7 helpful if we had a written status report.  
8 That -- I don't know that we need that before  
9 the next meeting but it's -- it would be  
10 helpful to have that in writing, or whenever  
11 you can pull it together.

12          **MR. HINNEFELD:** I'd like to do it next month  
13 when I hope I have a little more to report, in  
14 terms of things being delivered.

15          **DR. ZIEMER:** Okay.

16          **MR. HINNEFELD:** The easy way to do this would  
17 be to add an additional column.

18          **DR. ZIEMER:** Add a column, right. Just tell us  
19 --

20          **MR. HINNEFELD:** That may put us on legal sized  
21 paper if we do that in order to still be able  
22 to read it. Is that okay?

23          **MS. MUNN:** That's okay. That's fine.

24          **MR. HINNEFELD:** I could shr-- I guess it'll  
25 shrink.

1           **DR. ZIEMER:** Well --

2           **MR. HINNEFELD:** Smaller font, sure.

3           **DR. ZIEMER:** -- however you can do it  
4 conveniently so that we can --

5           **MR. HINNEFELD:** Smaller font and magnifying  
6 glasses.

7           **DR. ZIEMER:** And then on the other ones then,  
8 what you're telling us is that the steps for  
9 reaching resolution have not yet been taken.

10          **MR. HINNEFELD:** Right, in fact, these were  
11 fairly -- I don't know that they've been  
12 provided before now actually to SC&A. I  
13 intended to, but I don't believe I did. I  
14 think I sent them the wrong copy of the matrix  
15 that didn't have these on it.

16          **DR. ZIEMER:** So SC&A has not yet seen the NIOSH  
17 response yet --

18          **MR. HINNEFELD:** I -- I don't believe so.

19          **DR. ZIEMER:** -- and had a chance to interact,  
20 so --

21          **MR. HINNEFELD:** Right.

22          **DR. ZIEMER:** -- those interactions remain to be  
23 done.

24          **MR. HINNEFELD:** Right, whenever the working  
25 group is assembled to do that, we'll -- we can

1 be prepared for that.

2 **DR. ZIEMER:** So basically this is a status  
3 report of where we are on --

4 **MR. HINNEFELD:** Yeah.

5 **DR. ZIEMER:** -- on this item. Board members,  
6 any questions or comments? Wanda Munn?

7 **MS. MUNN:** Yes, thank you for the suggestion  
8 with respect to the status line. My memory is  
9 that the working group was concerned about that  
10 as well --

11 **MR. HINNEFELD:** Right.

12 **MS. MUNN:** -- and was looking forward to the -  
13 - seeing complete, done --

14 **MR. HINNEFELD:** Right.

15 **MS. MUNN:** -- finished, yeah. Good.

16 **MR. HINNEFELD:** Right.

17 **MS. MUNN:** Thanks, Stu.

18 **DR. ZIEMER:** Okay, other comments on this item?

19 (No responses)

20 I notice that we had allowed an hour for that.  
21 Am I missing something here? Can you drag this  
22 out a bit, Stu?

23 No, I don't think we need an hour --

24 **MR. HINNEFELD:** We could ask SC&A for their  
25 comments on this, I've been doing all the

1 talking.

2 **DR. ZIEMER:** I don't know -- SC&A has not had a  
3 chance to respond to the new recommen-- or the  
4 NIOSH responses, but -- yes, Hans, if you would  
5 --

6 **DR. BEHLING:** Yeah, we only looked at the  
7 response this morning and of course it's -- be  
8 premature for me to make comment, but I do  
9 understand the issues that were raised. And  
10 quite frankly, I think many of the issues can  
11 be resolved relatively quickly because -- and I  
12 already spoke to Jim and Stu on this issue  
13 prior to the meeting -- many of the issues  
14 involve things that have a technical side to  
15 that, but not really a strong impact on what we  
16 hope to achieve here in terms of deciding  
17 whether or not a claim or a dose reconstruction  
18 may have a claim, will go over the 50 percent  
19 or below 50 percent, which is really the  
20 critical issue.

21 And many of the issues that were identified  
22 early on when we reviewed Implementation Guide  
23 Two and many of the others, TIB-2 and others,  
24 which were clearly intended only to be used in  
25 select instances where the claim up front is

1 known to be non- compensable. In other words,  
2 what can we do to overestimate an exposure to  
3 the point where no one would reasonably argue  
4 whether the dose that we assign is in fact an  
5 overestimate, and in the process show a POC  
6 that's less than 50 percent, and therefore,  
7 say, end of the claim.

8 And I think many of the issues that were  
9 identified and yet to be resolved in behalf of  
10 internal dosimetry involves the high five for  
11 Savannah River, the 12/20 radionuclides under  
12 hypothetical exposures, and while there were  
13 technical issues that were identified with  
14 regard to the blending of ICRP-30 with more  
15 recent ICRP documents, they will only add a  
16 small amount of dose for individuals who, in  
17 most instances as the TIBs actually specify up  
18 front, to be only used in non-compensable  
19 claims, so what you're really doing is refining  
20 something that in the end has a very limited  
21 impact. And so in discussing with Jim and Stu,  
22 I think we can resolve some of these issues and  
23 focus on those things that are important.

24 **DR. ZIEMER:** Okay, thank you very much for that  
25 comment. Lew?

1           **DR. WADE:** Wanda first.

2           **DR. ZIEMER:** Oh, Wanda Munn.

3           **MS. MUNN:** Again, not speaking for the entire  
4 working group, but there was a serious concern  
5 -- a primary concern with respect to a lack of  
6 clearness relative to which procedures applied  
7 in many cases. We had circumstances where one  
8 procedure would appear to be applicable, but  
9 another would not approach it in the same way  
10 or would, even though the end result may be  
11 similar, would not be the same. And there was  
12 a significant concern with respect to not  
13 having procedures in place that might confuse  
14 the dose reconstructor or cause a question to  
15 be raised with respect to which took precedence  
16 on any given site. So for that reason,  
17 certainly I as a member of that group was very  
18 eager to see these procedural issues resolved  
19 since they apply not to individual sites but  
20 generally across the complex.

21           **DR. BEHLING:** Yeah, and again, when we're --

22           **DR. ZIEMER:** Hans?

23           **DR. BEHLING:** -- talking about those particular  
24 procedures that are referred to as complex-  
25 wide, as a rule they always end up being those

1 procedures that are directed towards non-  
2 compensable claims.

3 **UNIDENTIFIED:** Yeah, yeah.

4 **DR. BEHLING:** And there has been a lot of  
5 misunderstandings and misinterpretation and I  
6 think Stu correctly pointed out that they're  
7 currently in the process of revising TIB-8 and  
8 ten which were mostly the ones that were  
9 misinterpreted by dose reconstructors. But  
10 what has also happened in the meantime over the  
11 last six months or so, we have seen, in  
12 reviewing the various audits that we have  
13 performed, a steady, steady almost complete  
14 conversion from the use of procedures to  
15 workbooks. And the use of workbooks now takes  
16 all that guesswork away. In fact, we were  
17 talking about the potential that someday if  
18 there is some time, Kathy could present to the  
19 Board an understanding of the workbook, which  
20 would take a lot of mysteries out of how dose  
21 reconstruction is being done. And when you  
22 look at the workbooks, many of the issues that  
23 we have found that were problematic for the  
24 dose reconstructor in his interpretation of the  
25 various procedures, have been taken away

1           because that option no longer exists. And so  
2           it's a self-rectifying situation where we're now  
3           dealing with dose reconstructions that make use  
4           of workbooks that take the mystery out of dose  
5           reconstruction for the people who are involved.  
6           So I think the problem has essentially been  
7           largely eliminated.

8           **DR. ZIEMER:** Okay, thank you, Hans. And Kathy  
9           Behling, did you have an additional comment on  
10          that?

11          **MS. BEHLING:** Yes, I do. In fact, I believe  
12          the reason that there was a large slot of time  
13          for the Task III, both today and I guess on  
14          Thursday, I think the intent was that we would  
15          try to go through some of these internal items  
16          and findings on the matrix. We did receive  
17          NIOSH's responses a few months ago, and I don't  
18          know if they've changed with this matrix, but  
19          we have looked at those. And so at this point,  
20          although a lot of the issues were handled by  
21          Joyce Lipsztein, both Hans and I are prepared  
22          to go through those items and I think -- I  
23          believe it was Mark's intent that we might be  
24          able to go -- to step through some of those  
25          items and get some of these issues working

1           towards closure. And I think Hans and I are  
2           prepared to do this if there is additional  
3           time.

4           And also Arjun is here and can discuss the  
5           internal -- or the interview procedures. If I  
6           might, since we do have a little bit of extra  
7           time here, also let you know that we will -- in  
8           -- currently we've been authorized, as an  
9           extension of this Task III project to, as Hans  
10          said, look at the workbooks and review the  
11          workbooks, so we have a new list of procedures  
12          that have -- that we've been authorized to look  
13          at. And we're also looking at various  
14          workbooks, both site-specific and complex-wide  
15          workbooks associated with this. In fact, I'm  
16          working right now on a complete table so that  
17          you all can see the list of all the relevant  
18          procedures that are out there regarding dose  
19          reconstructions, which ones we've reviewed,  
20          which ones we've been authorized to review, and  
21          also I'm going to tie with that which ones have  
22          a workbook, and which workbooks we're looking  
23          at so that you have a full understanding of  
24          what -- of the entire picture of the Task III.  
25          **DR. ZIEMER:** Certainly it would be appropriate

1 to proceed through that. Kathy, do you want to  
2 lead that off or is Hans going to take the lead  
3 on that? And also, do we have a handout on  
4 this?

5 (Pause)

6 I think what we'll do -- let me just -- we'll  
7 take a break for ten minutes, comfort break,  
8 and we'll get this part prepared --

9 **DR. WADE:** If I could interject just one thing,  
10 and again, it's been alluded to by several of  
11 the speakers, you know, this Board is drawn  
12 into very time-critical issues with regard to  
13 SEC petitions and therefore site profiles, and  
14 we have a tendency to put this issue off. And  
15 I think -- I know Mark wanted to bring focus,  
16 as Kathy so eloquently did, to this. So I  
17 think it's important that when we walk away  
18 from this task, we walk away with a strategy  
19 that will allow this item to be given  
20 sufficient time. This migration to workbooks  
21 is non-trivial. I think it's a very positive  
22 development, but I think it's important for the  
23 subcommittee and then the full Board to get its  
24 mind around this and then have a plan of action  
25 that's implementable. We go to the workgroup

1 meetings expecting to do everything and this,  
2 and we don't do this, and I think we have to  
3 learn from that lesson.

4 **DR. ZIEMER:** Okay, we'll take a ten-minute  
5 break and then reconvene.

6 (Whereupon, a recess was taken from 10:48 a.m.  
7 to 11:05 a.m.)

8 **DR. ZIEMER:** Return to your seats, we're going  
9 to reconvene here. On Task III, Board members,  
10 if you'd take your -- have your matrix in hand,  
11 we're going to have an opportunity for NIOSH to  
12 indicate on the matrix those items where they  
13 in essence have agreed with the SC&A comments -  
14 - and Stu will go through those and identify  
15 those -- then we'll have an opportunity for  
16 Hans and Kathy Behling to indicate some next  
17 steps on the other items. So Stu, if you can  
18 take us through those items where it appears  
19 that NIOSH has essentially agreed or at least  
20 there's been a resolution of the issue, or at  
21 least identify those issues where we're...

22 (Pause)

23 Or at least take us through those NIOSH  
24 responses.

25 (Pause)

1           **MR. HINNEFELD:**    Okay, is it on now?

2           **DR. ZIEMER:**    Yeah.

3           **MR. HINNEFELD:**   Okay. Well, I mean the ones  
4           that we agree with the comment and agree to  
5           make revision to, we've kind of identified in  
6           our comment as -- you know, as -- and I'm going  
7           to have to be kind of on the fly here if that's  
8           -- if that's the one you want to talk about.  
9           You know, we may also -- you know, since there  
10          -- in those cases where we say okay, we agree  
11          we're going to make this change, maybe we would  
12          be better to talk about ones where we don't  
13          think a change is necessary.

14          **DR. ZIEMER:**    Right.

15          **MR. HINNEFELD:**   Is that okay?

16          **DR. ZIEMER:**    Yeah, maybe you could identify  
17          each.

18          **MR. HINNEFELD:**   Okay. Okay. Well, we'll start  
19          through this and when you get tired of it just  
20          tell me to shut up and I'll sit down. This --  
21          the internal dosimetry procedures -- the  
22          document starts with OCAS-IG-002, that's on  
23          page 12 of this matrix, and I noticed that this  
24          -- the finding numbering actually calls these  
25          IG 001-01, but that's a typo. These are all on

1 IG-002, so the far left column is the correct  
2 column where the document is numbered  
3 correctly.

4 First comment describes lack of clarity in  
5 identifying special circumstances in an  
6 example, and our response is, well, we can't  
7 write an example that includes all the special  
8 circumstances that we're going to have to face.  
9 So we thought that the examples we wrote  
10 illustrated what we intend to illustrate and we  
11 didn't expect we would have to change those.  
12 But we did say that, you know, if part of this  
13 description of the finding -- the total body of  
14 the finding also talked about uncertainty not  
15 being addressed very well, and we do agree that  
16 we need to beef up the uncertainty portion of  
17 IG-2. So we do intend to do that.

18 **DR. BEHLING:** Yeah, I think what has happened is  
19 that when we undertook the review of the  
20 various procedures, we were also as new as  
21 anybody else and we didn't realize what was to  
22 come. Obviously, no one could foresee the  
23 massive expansion of procedures that would  
24 provide more definitive information as time  
25 went by, the introduction of workbooks, so some

1 of our criticism was perhaps somewhat premature  
2 because we weren't really in a position to  
3 assess the future and accurately assess what  
4 additional TIBs would be developed that would  
5 fill in the blanks as we saw them. So again,  
6 some of these comments, we have to take it in  
7 context of time.

8 **DR. ZIEMER:** Okay.

9 **MR. HINNEFELD:** So, moving on down the page, we  
10 agree with the second comment that there are --  
11 I believe that had to do with an incorre-- an  
12 out of date or an old ICRP or this most --  
13 latest ICRP-71 not being referenced and a  
14 couple of radionuclide models on this  
15 particular table, we agreed that we needed to  
16 update that table to do that.

17 **DR. ROESSLER:** Should that be californium or  
18 calcium?

19 **MR. HINNEFELD:** I -- it's -- I believe it's  
20 both. I believe it's -- I believe it is -- I  
21 don't know, I'll have to go back and look. It  
22 may be a typo. It may be Cf, but I don't know.  
23 The next comment is about the -- doesn't  
24 mention treatment of gases and vapors, and we  
25 agree that we didn't say anything about it, but

1 we also feel like any internal dosimetrist who  
2 has a gas or vapor exposure would know he had  
3 to use the gas or vapor model, but we will go  
4 ahead and make that change since we're going to  
5 be revising IG-2 anyway.

6 The fourth comment has to do with clarity in  
7 how exactly to do it. I believe this kind of  
8 speaks to Hans's comment just a minute ago  
9 about when this review was done they didn't  
10 recogn-- you know, SC&A didn't recognize the  
11 proliferation of other technical documents that  
12 would be coming along to give more specific  
13 detail. And because this is sort of a general  
14 rules document as opposed to a specific  
15 guidance document, so we didn't really feel  
16 like there was a revision warranted from that  
17 comment.

18 Comment number five, again, this site -- this  
19 speaks to uncertainty approaches and so we  
20 agreed that we needed to beef up or do -- be  
21 better perform-- provide better explanation in  
22 those sections.

23 **DR. BEHLING:** And -- and as just an add-on, the  
24 uncertainty issue's oftentimes driven by other  
25 procedures where you have a very, very firm

1           understanding of how to deal with uncertainty,  
2           whether it's the use of a triangle distribution  
3           that makes use of DCF's, the three values, et  
4           cetera, and I think it was introduced there,  
5           but perhaps not as adamantly stated as it  
6           should be. But I think the issue is one that  
7           we would walk away from and say it's not an  
8           issue that is appropriate here for the  
9           implementation guide to be addressing.

10          **MR. HINNEFELD:** See, where -- I think we're at  
11          comment number six now, which is the second one  
12          on page 13. This is one where I guess we do  
13          have a disagreement which would probably  
14          require conversation, and it has to do with  
15          whether the mouth as the target organ is  
16          appropriately modeled by the ET-2 portion of  
17          the respiratory tract. And we've got a certain  
18          body of research that we've done that we feel  
19          like we selected appropriately when we said the  
20          mouth was not included appropriately as a  
21          target by -- or not modeled appropriately by  
22          ET-2. So this will require I think some  
23          discussion.

24          **DR. BEHLING:** And I should also state to the  
25          Board that I'm really speaking in behalf of

1           Joyce Lipsztein here because this is the area  
2           that she was involved in, but unfortunately  
3           she's not here today to make comment, and so  
4           there'll be some comments that I will refrain  
5           from making in her behalf without having  
6           conferred with her first. So on this one I  
7           will -- I will remain silent.

8           **DR. ZIEMER:** Yeah, I think basically we just  
9           want to identify where there's essentially  
10          resolution and where further interactions may  
11          be needed, and this is one. Okay.

12          **MR. HINNEFELD:** Yeah.

13          **DR. ZIEMER:** Go ahead.

14          **MR. HINNEFELD:** Finding number seven, we agree  
15          that the statement that was cited is incorrect  
16          and we shouldn't have said that that way, but  
17          the finding -- while it's not captured here in  
18          the finding, the description -- the full  
19          finding goes on to speak about things like  
20          investigation of a hygiene habits and things  
21          when you're dealing about ingestion, and we  
22          don't propose to do that. We don't think that  
23          information will be available in dose  
24          reconstruction and so we don't propose to say  
25          anything about that in IG-2.

1           Comment number eight state-- is an example, it  
2           says an in vivo measurement with no detectable  
3           thorium 232 in the lungs is a comment in our  
4           IG-2, and yes, we agree that thorium 232 isn't  
5           directly measurable in the -- by an in vivo  
6           count in the lungs. You actually look for one  
7           of the photon from the decay products. And so  
8           you have to have some knowledge of the degree  
9           of equilibrium between the decay product and  
10          the parent in order to correctly interpret the  
11          bioassay result, and we understand that. But  
12          this particular portion of the implementation  
13          guide was talking about how to resolve  
14          situations where you have multiple indications  
15          of the intake. You know, how do you resolve --  
16          in these cases when you have a positive lung  
17          count and bioassay data, and so we felt like  
18          this was an acceptable example to use for that  
19          particular instance because if you're doing in  
20          vivo counting for thorium 232, in order to do  
21          that at all you have to have some knowledge of  
22          that equilibrium. So we figured, yeah, we  
23          understand that, but what we were trying to  
24          explain is how you deal with it when you have  
25          more than one in vivo type that's telling you

1           that you got an intake. That was the intent of  
2           this section, and so we don't think the section  
3           needs to be revised.

4           Okay, finding number nine. We don't dispute  
5           what the reviewer said, but we felt like, given  
6           the structure of the document, that it was  
7           appropriate to list things the way we listed  
8           them. For instance, the IG describes -- let me  
9           think and make sure I've got the right one  
10          here. Okay, I was thinking of something else.

11         **DR. ZIEMER:** Are you on the radon?

12         **MR. HINNEFELD:** I'm on -- I'm on -- I'm trying  
13         -- I'm trying to get my mind around number nine  
14         and what we -- what number nine was.

15         **DR. BEHLING:** Stu, if I can interrupt, I think,  
16         again, it's an academic issue because the  
17         assumption generally speaking is that if you're  
18         talking about the lungs, the lymph nodes, and  
19         certain other tissues that are metabolically or  
20         mechanically concentrating a radionuclide, the  
21         assumption is to always go to the highest dose  
22         that involves the solubility of S, or slow. In  
23         metabolic tissues you go to -- default to type  
24         M, so that the assumption is always to be  
25         claimant favorable.

1           Now I do have a comment on that issue which I  
2           had probably wanted to make this morning, and  
3           that is -- and it goes back to some of the  
4           audits that I'm doing. Generally speaking, the  
5           assumption is -- today is to deal with type M  
6           as a claimant favorable default value for  
7           solubility for non-metabolic organs, but that's  
8           only partially correct and conditionally  
9           correct.

10          And what do I mean by that? If we start out  
11          with, for instance, an air intake, if we have a  
12          person breathing in air and it has so many  
13          becquerels per cubic meter and you're talking  
14          about plutonium or uranium, then it's clearly a  
15          claimant favorable assumption to assume type M,  
16          because you will be breathing in the same  
17          amount whether you assume type M or type S. On  
18          the other hand, and this is what I've found now  
19          in doing audits, when you start out with a  
20          urine sample -- and let's assume you have a  
21          urine sample that has one dpm per 24-hour urine  
22          excretion volume -- and if you start on the  
23          assumption that because the cancer is a non-  
24          metabolic cancer and you say that it's type M  
25          because it's claimant favorable, you would be

1 wrong. Because for the simple reason that if  
2 you work backwards and say how much do I have  
3 to breathe in in order to get one dpm in a 24-  
4 hour urine volume, if the material is assumed  
5 type M, you will get a certain value -- let's  
6 say it's X. If you start out with the same one  
7 dpm per 24-hour urine volume but assume it's  
8 type S, slow, you will end up -- the required  
9 intake, inhalation intake, is maybe ten times  
10 higher. And then if you use that value and put  
11 it into IMBA and work forwards again for that  
12 organ dose, you end up actually with a higher  
13 dose if you assume type S as opposed to M. And  
14 that is unique only when you start out with a  
15 urine data that's defined in terms of alpha  
16 particle disintegrations or something else.  
17 Because the difference being is that when you  
18 work backwards, you start out with a much  
19 higher intake when you say how much do I have  
20 to inhale in order to see one dpm and assume  
21 that I'm dealing with a slow solubility class.

22 **DR. ZIEMER:** Okay --

23 **DR. BEHLING:** And I just wanted to quickly  
24 point that out.

25 **DR. ZIEMER:** -- it's clear to the Chairman that

1 we need to have the face-to-face  
2 (unintelligible) this. We have 75 more items  
3 to go here on this list and we cannot resolve  
4 them here at the table, I think.

5 **MR. HINNEFELD:** We won't belabor that any more  
6 then.

7 **DR. ZIEMER:** Yeah.

8 **MR. GRIFFON:** Actually, I think Hans was going  
9 into a different issue, really it's sort of a  
10 separate issue. But on this issue I think  
11 really -- I think what you're saying is that  
12 the IG wouldn't address that kind of  
13 specificity.

14 **MR. HINNEFELD:** Right.

15 **MR. GRIFFON:** Is that kind of what --

16 **MR. HINNEFELD:** Yeah, that's pretty much what  
17 we're saying on this comment.

18 **DR. ZIEMER:** But nonetheless, I want to stop  
19 here for a moment and -- because we have -- we  
20 have the Y-12 site profile that needs  
21 discussion here this morning. We also have the  
22 dose reconstruction matrix that needs some  
23 discussion, and I want the Board to decide on  
24 how it -- or the subcommittee to decide on how  
25 it would like to proceed on this. Clearly

1           there are a number of items where NIOSH has  
2           already indicated that they in essence agree  
3           with the finding. There are a number of items  
4           apparently where there's still some  
5           disagreement and some face-to-face needs to  
6           occur.

7           So -- and Mark, your working group dealt with  
8           this. Mark Griffon now has joined us. We're  
9           glad you made it out of the snows or whatever  
10          else was occurring in Boston.

11          But Mark, is this something, just to expedite  
12          things, that we need to have the matrix sort of  
13          filled in next -- the next step by the  
14          workgroup before we bring it to this level? Or  
15          what needs to occur?

16          **DR. WADE:** Just to look at assets -- consider  
17          our assets, we have an hour on the agenda for  
18          the full Board for Task III. That hour is  
19          available to us to do what might be  
20          appropriate, so --

21          **DR. ZIEMER:** On the full Board meeting.

22          **DR. WADE:** On the full Board meeting. So there  
23          is time. I think how we spend that time, it's  
24          -- it's worthwhile talking about now.

25          **MR. GRIFFON:** Yeah, I don't know if -- time-

1 wise if there's any time between now and then  
2 for the workgroup to sit down with Stu and Hans  
3 and just go through this matrix and try to fill  
4 in some of the blanks and then, you know, at  
5 the full Board meeting maybe we could highlight  
6 which ones still need resolution, as opposed to  
7 doing it here where it's going to take longer.  
8 Because I think a lot of the IG ones -- I mean  
9 we can skip by a lot of those first ones and  
10 get to the heart of the matter. But doing it  
11 in real time here might be difficult. So it  
12 might be possible to meet as a workgroup after  
13 the meeting tonight. I don't know how much  
14 time we have.

15 **MS. MUNN:** Twenty-five minutes.

16 **MR. GRIFFON:** But I mean I'm -- you know, I'm  
17 certainly willing to do that. I would like to  
18 see this procedures review move along. I hate  
19 to wait 'till -- to push it off another  
20 meeting.

21 **DR. ZIEMER:** What Lew has suggested is that the  
22 -- the discussion on the dose reconstructions  
23 might be fully done -- simply not done here in  
24 subcommittee, but done in the full Board  
25 meeting -- and devote maybe one half-hour more

1 to this and try to finish it up. And one way  
2 to do that expeditiously would be just to  
3 identify quickly which items, if -- if NIOSH  
4 has basically agreed to the finding, just  
5 identify which those are. And where there's  
6 disagreement, identify and then -- because  
7 there clearly may need to be some additional  
8 follow-up.

9 **MR. GRIFFON:** Does that leave us time for Y-12?  
10 That's the only question I had.

11 **DR. ZIEMER:** We, we still have an hour for Y-  
12 12. The agenda calls for 45 minutes; I'd like  
13 to allow an hour if we could. We have set  
14 aside 1:00 to 2:00 also for subcommittee, so we  
15 could do Y-12 then.

16 **DR. WADE:** Right, again, looking at the assets,  
17 we've got an hour on the agenda -- the full  
18 Board agenda for dose reconstruction. We've  
19 got an hour on the full Board agenda for Task  
20 III. You know, how you would best want to use  
21 that time, you know, we have between now and  
22 lunch here, and then I think I agree with the  
23 Chairman that after lunch I think we should  
24 come back and devote ourselves to Y-12. So we  
25 have those time slots, and how best to use them

1 I think is something we could talk briefly  
2 about.

3 **DR. ZIEMER:** Well, I'm suggesting we have about  
4 a half-hour here we can go through and identify  
5 where we are on the matrix. There's about 80  
6 or so items on the matrix, so we --

7 **MR. GRIFFON:** Yeah, that sounds good to me,  
8 maybe we can -- the only reluctance I have is  
9 we might miss something, but if we can go  
10 through and find areas of disagreement -- maybe  
11 with Kathy and Hans looking and we'll try to  
12 catch areas of disagreement and discuss those  
13 issues, and then --

14 **DR. ZIEMER:** Yeah.

15 **MR. GRIFFON:** -- move us along quicker, yeah.

16 **DR. ZIEMER:** And in -- in cases where basically  
17 there's an agreement, there's no point in taking  
18 a lot of time on it so...

19 **MR. GRIFFON:** Although some of those areas of  
20 agreement I still -- but we can discuss this  
21 maybe at the full Board meeting 'cause there's  
22 -- in some cases there's agreement, but the  
23 agreement was that it was captured in a change  
24 in another procedure, and I'm just wondering,  
25 you know, how we track that through.

1           **DR. ZIEMER:** Right, right. Okay. But -- Stu  
2 if you want --

3           **MR. HINNEFELD:** Okay.

4           **DR. ZIEMER:** -- another comment. Wanda.

5           **MS. MUNN:** I had just wanted to comment that  
6 prior to Mark's arrival I had previously made  
7 the comment that the working group was  
8 concerned about having put these procedures off  
9 again and again, so that if running through  
10 them right now will distill what we need to  
11 address at the full Board tomorrow, I would  
12 certainly support that.

13           **DR. ZIEMER:** That'll certainly help, but I don't  
14 want to spend 30 minutes trying to decide how  
15 to proceed, so let's -- let's --

16           **MR. GRIFFON:** I mean I think I can -- I can  
17 move to OCAS TIB-8, and then I think that one's  
18 a Joyce Lipsztein issue -- as you just  
19 mentioned, Hans, right?

20           **DR. BEHLING:** Yes.

21           **MR. GRIFFON:** So -- is there anything prior to  
22 that, though? There's pretty much agreement as  
23 far as I could see on most of the items prior  
24 to that in the matrix.

25           **DR. BEHLING:** And again here Mark, there have

1           been so many changes here with regard to the  
2           surrogate use of organs over time -- for  
3           instance, in the case of prostate for  
4           externals, testes for internals, bladder --  
5           didn't used to be that way. So there have been  
6           changes in response to that issue.

7           **MR. GRIFFON:** Right, right, yeah, and they're  
8           noted, I think, right?

9           **DR. ZIEMER:** Yes.

10          **MR. GRIFFON:** Yeah.

11          **DR. ZIEMER:** Well, very quickly, where do we  
12          stand on 09?

13          **MR. GRIFFON:** Wait, which -- which one are you  
14          looking --

15          **DR. ZIEMER:** That's the one Stu was discussing  
16          when --

17          **UNIDENTIFIED:** (Off microphone)  
18          (Unintelligible) on page 13.

19          **DR. ZIEMER:** On page 13. It's actually --

20          **MR. HINNEFELD:** I guess, I -- I really --

21          **DR. ZIEMER:** It's IG-002-09.

22          **MR. HINNEFELD:** Right. Our view is it's an  
23          editorial comment with, you know, really no  
24          consequence.

25          **DR. ZIEMER:** Okay, keep going, Stu.

1           **MR. HINNEFELD:** Okay, I guess we'd put number  
2           ten in that same category, really, is that,  
3           okay, the -- that has to do with dose from  
4           radon gas as opposed to radon daughters because  
5           the radon section only address radon daughters  
6           and -- again, kind of -- it is editorial but  
7           not terribly consequential. Okay, and then  
8           that completed -- it's IG-10 and was the last  
9           one of IG-2.

10           The next one goes into our Procedure number  
11           three, the first one appears to be an editorial  
12           comment about some references being missing  
13           from the references section.

14           Comment Procedure 3-2 says that the procedure's  
15           not sufficiently descriptive in how you --  
16           what's sufficiently good data to make  
17           adjustments from the default assumptions about  
18           particle size, solubility, intake data, et  
19           cetera, et cetera, et cetera. Our view was it  
20           wasn't intended to be -- to describe how to do  
21           that, that we -- an experienced dose  
22           reconstructor would have to do this and we  
23           didn't try to -- can't make somebody an  
24           experienced dose reconstructor by reading this  
25           procedure, essentially.

1           **MR. GRIFFON:** Was that Proc. 3, number 2?

2           **MR. HINNEFELD:** Was Proc. 3, number 2, right.

3           **MR. GRIFFON:** How 'bout the phrase in the  
4 finding, it talks about results are considered  
5 sufficient data and of good quality.

6           **MR. HINNEFELD:** Uh huh.

7           **MR. GRIFFON:** That seemed different than the  
8 selection of parameters.

9           **MR. HINNEFELD:** The text of the procedure at  
10 this point in the procedure -- the procedure  
11 has several steps where it describes how to  
12 select values for these various parameters of  
13 intake data, et cetera, et cetera, et cetera,  
14 and we didn't attempt in this procedure to say  
15 what kind of data or how much data do you need  
16 to depart from that. But there was no other  
17 place -- you know, since we're listing how to  
18 select, we wanted to put in a warning that,  
19 given the data in front of you, you may have a  
20 way to fit the data -- well, you can fit it  
21 with IMBA -- fit the data -- that other than  
22 what we're describing here. So in order to say  
23 -- you know, we chose the language we chose in  
24 order to allow an experienced dose  
25 reconstructor to make decisions based on the

1 data in front of him or her rather than  
2 following lock-step down these procedure steps.  
3 That was the intent of putting the statement in  
4 there. It was not intended to provide  
5 sufficient experience or knowledge to someone -  
6 - you know, that really only comes with, you  
7 know, knowing what you're doing, that -- really  
8 doing dose reconstructions for a while or being  
9 an internal dosimetrist, you know, and doing  
10 some of that for a while. So that's -- we just  
11 felt like the comment wasn't really  
12 particularly relevant to what we're trying to  
13 portray in the procedure.

14 **DR. BEHLING:** Yeah, I agree in the sense where  
15 we all are fully aware that internal dosimetry  
16 is a very, very complex subject, and to give  
17 definitive, step-by-step procedures for  
18 assessing it is essentially impossible. And  
19 you need to rely on a person's academic  
20 background, experience and just good intuition  
21 in wading through the information saying what  
22 is reasonable and what is not. And in some  
23 cases -- for instance, there is some guidance  
24 that, for instance, says that if given a choice  
25 between urine data and chest count when you're

1 looking at plutonium and you have to through  
2 the early periods during which chest counting  
3 was done simultaneously with urinalysis, rely  
4 on urinalysis because it's likely to be a more  
5 definitive assessment of internal body burden.

6 **DR. ZIEMER:** So SC&A is agreeing then.

7 **DR. BEHLING:** Yes.

8 **DR. ZIEMER:** Okay, thank you.

9 **MR. GRIFFON:** But I guess that jumped out at me  
10 because of the discussions we've had of late  
11 about, you know, whether we have a  
12 statistically robust sample and things like  
13 that, and this gets back to the question of are  
14 there any -- within your guidance document  
15 should there be anything that sort of says to  
16 dose reconstructors, you know, what -- what  
17 sort of things you should look for in terms of  
18 checking sufficient data and of good quality.  
19 There are sort of two things there, I guess,  
20 but if --

21 **MR. HINNEFELD:** Okay, the --

22 **MR. GRIFFON:** -- I understand your --

23 **MR. HINNEFELD:** -- the procedure wasn't written  
24 with that in mind, clearly.

25 **DR. BEHLING:** And Mark, I believe the area

1           where dose reconstructor needs to focus on in  
2           arriving at certain conclusions about the  
3           robustness of data would really not be in the  
4           implementation guide but more so in the TBD.  
5           That's where the heart of the data is that  
6           would say how much do we have -- or how much  
7           faith can we have in a data based on the  
8           information presented herein, and the  
9           implementation guide is really not the place  
10          for that information to exist.

11         **DR. ZIEMER:** Okay, let's proceed.

12         **MR. GRIFFON:** Next.

13         **MR. HINNEFELD:** Okay, let's see, Procedure 3  
14         comments, number three through number six are  
15         editorial comments about particular tables that  
16         we agree with and we will include.

17         That takes us to TIB-8, this is the long  
18         version of the one I described earlier that  
19         will undoubtedly have to be discussed in -- in  
20         a convergence meeting. It has to do with the  
21         mouth and is it appropriately modeled by ET-2.  
22         Let's see -- okay, the next one is --

23         **DR. ZIEMER:** I'm sorry, is there a disagreement  
24         on this one, or --

25         **DR. BEHLING:** I'm going to skip down one

1           because this is an area that -- I'm familiar  
2           with the ICRP long model but these fine points  
3           or minutiae points are things that I'm going to  
4           defer to Joyce to--

5           **MR. HINNEFELD:** Yeah, 8-1.

6           **DR. ZIEMER:** These may be subject to further  
7           discussion.

8           **MR. HINNEFELD:** 8-1 absolutely will be the  
9           subject of discussion, there's no doubt in my  
10          mind. And probably will be somebody other than  
11          me representing the OCAS side from internal  
12          dosimetry.

13          Okay, OTIB 8-2, we agreed there are sort of  
14          conflicting statements here about use of  
15          highest non-metabolic in this particular  
16          circumstance, and so we think we can revise  
17          that and clarify that.

18          8-00 -- or 008-3 is really the same comment as  
19          one.

20          **DR. ZIEMER:** Same comment as what?

21          **MR. HINNEFELD:** 8-1.

22          **DR. ZIEMER:** Oh, Okay.

23          **UNIDENTIFIED:** (Off microphone)  
24          (Unintelligible) needs to be discussed.

25          **MR. HINNEFELD:** Right.

1           **MS. MUNN:** Which means there's more of it.

2           **MR. HINNEFELD:** Knowing us, we'll probably  
3 discuss it twice, too, since it's listed in two  
4 procedures.

5           Okay, Procedure number two is in the use -- how  
6 to use IMBA, which is a computer program for  
7 internal -- internal -- Integrated Module for  
8 Bioassay Analysis, that's what IMBA stands for.  
9 For the first procedure we felt like it's not  
10 really needed to point out the start  
11 calculation button after you -- you know, a  
12 novice can find it eventually, and after you  
13 use it a couple of times there's no point in  
14 having it in the procedure, so... start  
15 calculation is a button you click with your  
16 mouse to start the arithmetic.

17          **MS. BEHLING:** We agree. It's just not as user-  
18 friendly as it could be.

19          **MR. HINNEFELD:** Procedure number 2, finding  
20 two, Proc. 2-2 -- again, this -- we feel like  
21 this comment is -- more hits to the science  
22 than art of internal dosimetry and internal  
23 dosimetry interpretation, as opposed to  
24 operating the model. And we didn't feel like  
25 it was really relevant to the procedure on how

1 to run the model.

2 **MS. BEHLING:** Okay, I agree. Yeah, there's --  
3 and I now know that there's specific training  
4 that they give for the IMBA so I'm in  
5 agreement.

6 **DR. ZIEMER:** You're okay?

7 **MS. BEHLING:** Yes.

8 **MR. HINNEFELD:** Yeah, I believe for 2-3 we'd  
9 put in that same category.

10 **DR. ZIEMER:** Uh huh.

11 **MS. BEHLING:** Okay, yes, we're in agreement.

12 **MR. HINNEFELD:** Okay, next we go to Technical  
13 Information Bulletin number two, TIB-2. The  
14 first is editorial about la-- or some documents  
15 not being references, and we agree that those  
16 were inadvertently omitted.

17 The second comment is that the instructions for  
18 handling intakes of various tritium forms are  
19 kind of cumbersome, and we agree that they're  
20 cumbersome but they do get the right answer.  
21 So we didn't necessarily propose to change that  
22 speci-- you know, that.

23 Okay, the next is OTIB-2 which would be  
24 prepared by our contractor, ORAU. Again -- now  
25 these are probably ones we're going to have to

1 discuss, I would guess. This is going to hit  
2 to the nature of the hypothetical intake.  
3 OTIB-2 is a hypothetical intake and so I'm  
4 guessing that since Joyce isn't here these will  
5 be subject for discussion at a convergence  
6 meeting.

7 **DR. BEHLING:** I just want to make a comment  
8 here. While this is a technical issue that  
9 should be perhaps remedied, the issue's also  
10 one that needs to be looked at in context of  
11 how this particular procedure's used. It is  
12 really only confined to non-compensable claims  
13 in an attempt to overestimate and basically  
14 say, even with this kind of assigned dose --  
15 which we all essentially agree with is an  
16 overestimate -- you still do not come up to the  
17 50 percent probability of causation. And of  
18 course these changes that Joyce had made would  
19 in effect perhaps raise the bar a little bit in  
20 terms of the assigned dose, based on her  
21 comments. But the truth is, the minute you  
22 approach or exceed 50 percent, that procedure  
23 gets canned and you go back to the nuts and  
24 bolts of dose reconstruction through more  
25 rigorous methods which usually means this 15,

1           16 rem that might have been jacked up to 18 or  
2           20 rem gets reduced down to near zero when you  
3           realize in most instances the person who was  
4           assigned this dose wasn't even monitored.

5           **MR. HINNEFELD:** Okay, finding TIB 2-- OTIB-2-2,  
6           this is the first numbered one there on page  
7           19. This one I had trouble interpreting  
8           exactly what documents it -- that wasn't --  
9           weren't properly referred to, and so I  
10          concluded that this was sort of a summary  
11          statement -- restatement of a couple of later  
12          findings, number four and five, where it talks  
13          about a lack of clarity on some matters. And  
14          so we agreed we would clarify it, but I think  
15          these are kind of all going to wrap up into the  
16          OTIB-2 discussion to a certain extent.  
17          And then the comment OTIB-2-3 speaks to -- it's  
18          not consistent with OTIB-1, which is the  
19          Savannah River high five, which is another  
20          hypothetical intake. So our position was they  
21          are both hypothetical ways for doing certain  
22          populations of claims -- one's for Savannah  
23          River, one's for other sites -- and so we didn't  
24          necessarily feel like there was any particular  
25          problem with having those two methods. But I

1           suppose that'll all be discussed on that dis--  
2           in that meeting.

3           I suspect that since we're going to be talking  
4           about OTIB-2 in meeting, we might as well just  
5           deal with all of those in that meeting rather  
6           than go through the rest of the OTIB-2 comments  
7           here? So that takes us to --

8           **DR. ZIEMER:** So that takes us through page 20  
9           then, right?

10          **MR. HINNEFELD:** Right, and on to page 21,  
11          actually.

12          **DR. ZIEMER:** 21.

13          **MR. HINNEFELD:** Okay, takes us to OTIB number  
14          five, first comment on OTIB number five is the  
15          same one we talked about earlier with the mouth  
16          being properl-- is the mouth appropriately  
17          modeled by ET-2, so that will be discussed  
18          later.

19          Okay, OTIB-- this -- this next one we didn't  
20          agree with the comment. Says OTIB-5 guidance  
21          is not sufficiently prescriptive, requires  
22          levels of detail that are not reasonable.

23          OTIB-5 provides for ICD-9 codes -- by ICD-9  
24          code what the external target organ is, what  
25          the internal target organ should be, and what

1           IMBA model you should run. So -- and all you  
2           need to know is the ICD-9 code in order to pick  
3           out which one you're answering, and we get the  
4           ICD-9 codes as part of the cancer diagnosis.  
5           So we didn't believe there was insufficient  
6           guidance. We believe that the guidance -- or  
7           that it's pretty clear, it's a table. We  
8           believe it's pretty clear and that the  
9           information is available to the dose  
10          reconstructor.

11          **DR. BEHLING:** I agree in the sense where the  
12          dose reconstructor is basically told what the  
13          organ of interest is and that's not his  
14          decision to make to begin with.

15          **DR. ZIEMER:** Thank you.

16          **MR. HINNEFELD:** Okay, OTIB-1 is the Savannah  
17          River high five, and I believe that will  
18          probably be discussion of -- probably have to  
19          be discussed at our later meeting. I'm kind of  
20          looking at Mark and Hans here. I believe that  
21          -- I believe Joyce was probably the author of  
22          most of the comments on TIB --

23          **DR. BEHLING:** Yes.

24          **MR. HINNEFELD:** Then so I believe they will  
25          probably have to be addressed at that time.

1 For expedience now, we can, you know, just put  
2 all those off and -- because they will have to  
3 be talked about later. I -- I -- rather than  
4 try to parse them out as to which ones we're  
5 going to discuss and which ones we're not.

6 **DR. ZIEMER:** All of the OTIB--

7 **MR. HINNEFELD:** OTIB-1.

8 **MS. BEHLING:** OTIB-1.

9 **DR. ZIEMER:** -- Is on through the top of --  
10 there's 14 comments, right?

11 **MR. HINNEFELD:** Yeah.

12 **DR. ZIEMER:** Is that correct?

13 **MR. HINNEFELD:** Right.

14 **DR. ZIEMER:** So all of the OTIB-1 comments  
15 would be discussed.

16 **MR. HINNEFELD:** Well, I think there are certain  
17 places where you could say, you're right, we  
18 should explain things more clearly, and we  
19 agree that we will explain things more clearly.  
20 But since we're going to be discussion OTIB-1  
21 anyway, I suspect --

22 **UNIDENTIFIED:** (Off microphone)

23 (Unintelligible) cover it all.

24 **MR. HINNEFELD:** -- why don't we just cover it  
25 all at that point.

1           **MS. MUNN:** That would be better.

2           **MR. GRIFFON:** Has that -- has any of this been  
3 discussed in the Savannah River profile review?

4           **MR. HINNEFELD:** Has that been discussed?

5           **MR. GRIFFON:** Or it sort of overlaps, right?

6           **MR. HINNEFELD:** Certainly there --

7           **MR. GRIFFON:** Yeah.

8           **MR. HINNEFELD:** -- this issue was brought up in  
9 dose reconstruction review, and the resolution  
10 was we'll address this in Savannah River site  
11 profile. Okay, we can address it through this,  
12 we can address it through that --

13           **UNIDENTIFIED:** (Off microphone) So we're  
14 overlap (unintelligible).

15           **MR. HINNEFELD:** -- we just need to address it  
16 once and -- yeah.

17           **DR. ZIEMER:** We're up to OTIB-3.

18           **MR. HINNEFELD:** Up to OTIB-3.

19           **DR. ZIEMER:** Well, all of these start with  
20 OTIB-3 has been canceled, so...

21           **MR. HINNEFELD:** Right

22           **DR. ZIEMER:** And then there's some other things  
23 referred to, so...

24           Is that a moot point? That's what I'm really  
25 asking -- or is there an issue on the -- where

1 the pertinent information is now. Hans, do you  
2 have a --

3 **DR. BEHLING:** Yeah, I was really asking Stu. I  
4 believe OTIB-3 has been replaced by 11, is that  
5 correct?

6 **MR. HINNEFELD:** Right.

7 **DR. BEHLING:** The tritium calculation?

8 **MR. HINNEFELD:** Right.

9 **DR. BEHLING:** Which means that this -- all  
10 these comments are at this point moot.

11 **MR. GRIFFON:** Except that here -- here's one of  
12 the examples I was talking about 'cause it's --  
13 we have agreement, I guess -- sort of  
14 agreement, but it's just saying, you know, see  
15 TIB-11, which we haven't reviewed, so --

16 **DR. BEHLING:** Yeah, yeah.

17 **MR. GRIFFON:** -- I guess from a tracking  
18 standpoint, we want to make sure that the  
19 issues brought up in the three findings are  
20 appropriately addressed in TIB-11. So I think  
21 --

22 **DR. BEHLING:** Correct.

23 **MR. GRIFFON:** -- from a follow-through  
24 standpoint, I think we need to do something  
25 with that. I --

1           **MR. HINNEFELD:** We can come to the discussion  
2 meeting later on with more explanation of how  
3 either TIB-11 doesn't conclude that issue  
4 anymore or -- or maybe it still does.

5           **MR. GRIFFON:** Yeah.

6           **MR. HINNEFELD:** And -- okay. One of these  
7 comments is about organically-bound tritium,  
8 OTIB-3-3, which has come up in several places  
9 at Savannah River.

10          **DR. ZIEMER:** Let me ask this question, though.  
11 At this point how many new procedures, aside  
12 from the workbooks, are there? What I'm really  
13 getting at is do we need a -- do we need to  
14 think about reviewing another set of procedures  
15 or do we look at these items -- it's now in  
16 011, we automatically look at it because that's  
17 where it is now, to see whether the issue has  
18 been resolved.

19          **MR. GRIFFON:** Right.

20          **MS. BEHLING:** Excuse me. We have been  
21 authorized, under the extension on Task III, to  
22 review some of the newer procedures that are  
23 out.

24          **DR. ZIEMER:** Right.

25          **MS. BEHLING:** And OTIB-11 is on that list.

1           **DR. ZIEMER:** So -- okay, so then we -- we  
2 simply carry it across --

3           **MS. BEHLING:** Yes.

4           **DR. ZIEMER:** -- and make sure we track it,  
5 then, yeah.

6           **MS. BEHLING:** Yes.

7           **DR. ZIEMER:** Okay, thank you.

8           **MR. HINNEFELD:** The comment about organically-  
9 bound tritium at Savannah River is -- as near  
10 as we can tell, organically-bound tritium is a  
11 really minor contributor in general. I mean if  
12 -- if -- to the extent it contributes at all.  
13 Yes, there are some organic compounds in the  
14 tritiated areas. Yes, they can become  
15 tritiated. But the intake seems to be  
16 overwhelmingly tritiated gas and tritiated  
17 water. So that would be our (unintelligible) -  
18 -

19           **UNIDENTIFIED:** (Off microphone) Right  
20 (unintelligible) --

21           **UNIDENTIFIED:** (Off microphone) Tritiated  
22 (unintelligible) --

23           **UNIDENTIFIED:** (Off microphone) Sure  
24 (unintelligible) --

25           **DR. BEHLING:** We looked at it. We looked at it

1 and the small percentage of organified -- okay,  
2 increases the effective half-life from ten to  
3 40 days, but it's an insignificant component of  
4 the overall dose.

5 **DR. ZIEMER:** Thank you. Okay, OTIB-4.

6 **MR. HINNEFELD:** Right. Well, we've revised  
7 OTIB-4 and, at least for the first two  
8 comments, we believe we have addressed at least  
9 these two. The third comment, OTIB-4-3, has to  
10 do with it not being consistent. And again, we  
11 felt like these are overestimating approaches  
12 that have identical bases for particular  
13 populations of claims and that don't  
14 necessarily need to be the same approach for  
15 all populations of claims. So that's our -- so  
16 we have -- this is not -- OTIB-4 is another  
17 hypothetical intake for atomic weapons  
18 employers. And so we feel like, based upon the  
19 information you have available for a particular  
20 population of claims, you may choose one  
21 hypothetical approach which is -- you have a  
22 sound basis in one population. You have a  
23 different basis for another population. So you  
24 can have more than one, that's our position on  
25 these. You can have more than one approach.

1           **DR. BEHLING:** I guess the comment on the issue  
2 of ingestion is something that relates back to  
3 the Bethlehem Steel. I think people who've  
4 reviewed TIB-4 have looked at it and said well,  
5 it's a fairly conservative number for both the  
6 inhalation and ingestion. But when we look at  
7 the Bethlehem Steel in comparison to what we  
8 agreed upon in terms of what might be the  
9 ingestion dose for Bethlehem Steel, the  
10 claimant-favorable assumption that this was a  
11 bounding value as defined in TIB-4 is somewhat  
12 less than optimal upper bound value.

13           **MR. HINNEFELD:** Yeah, we'll bring -- the  
14 outcome of Bethlehem Steel will be brought into  
15 TIB-4 as well.

16           **DR. ZIEMER:** Where does that leave us on this?

17           **MR. HINNEFELD:** Okay, well that would be --  
18 I'll need to change our response then on 4-2.

19           **DR. BEHLING:** The driver for TIB-4 is really  
20 the inhalation dose.

21           **MR. HINNEFELD:** Right.

22           **DR. BEHLING:** And when you look at that number  
23 it is a very, very large dose, and then the  
24 assumptions that are made are very, very  
25 conservative, all agreed. But in comparison to

1 the Bethlehem Steel, the ingestion component is  
2 perhaps somewhat less than bounding and that  
3 was the comment that we've submitted for  
4 review.

5 **DR. ZIEMER:** So NIOSH is going to revise this?

6 **MR. HINNEFELD:** We're going to revise our  
7 response on OTIB-4-2 on the -- is that the  
8 ingestion one?

9 **MR. GRIFFON:** No, I don't think so.

10 **DR. ZIEMER:** No.

11 **MR. HINNEFELD:** No. One of these had to do  
12 with ingestion.

13 **MR. GRIFFON:** First one says procedure's not  
14 explicit on how to add ingestion and inhalation  
15 doses, I don't know if that's the one.

16 **MR. HINNEFELD:** Okay.

17 **DR. ZIEMER:** Well, in any event, you'll make  
18 the appropriate revision here. You need to  
19 identify where that is.

20 **MR. HINNEFELD:** Right.

21 **MR. GRIFFON:** This'll be Table 3-5 potentially  
22 could be revised, is that what you're saying?  
23 Again, based on Bethlehem Steel, or based on --  
24 is that -- I'm confused on that.

25 **MR. HINNEFELD:** Which would -- okay, Table 3-5

1 is -- okay.

2 **MR. GRIFFON:** Your response says that ingestion  
3 and inhalation values are explicitly listed in  
4 Table 3-5 of the revision of TIB--

5 **MR. HINNEFELD:** Right, right. And so that  
6 Table 3-5 would be adjusted to incorporate  
7 whatever's determined out of the Bethlehem  
8 Steel discussion. Okay. And...

9 **MR. GRIFFON:** So -- so this gets back -- just  
10 to tie this back, this gets back to the Board  
11 actions under Bethlehem Steel where we ask for  
12 a broader policy on the ingestion rates so this  
13 will --

14 **MR. HINNEFELD:** Right.

15 **MR. GRIFFON:** -- encompass that.

16 **MR. HINNEFELD:** Right. Right.

17 **DR. ZIEMER:** So there's no more discussion  
18 needed between SC&A and NIOSH, it's just a  
19 matter of updating this, then?

20 **MR. GRIFFON:** Right.

21 **MR. HINNEFELD:** Right, I believe.

22 **DR. BEHLING:** I have reviewed TIB-4 and there  
23 may a couple of items here that are not even  
24 included that I discovered that there's some  
25 minor errors, but we'll talk about that later

1 on in private when we have reasons to at least  
2 acknowledge what findings I have when I  
3 reviewed some of the audits that made use of  
4 TIB-4 that are not acknowledged here in this  
5 matrix.

6 **MS. BEHLING:** In addition, I believe that  
7 there's been a revision to TIB-4 that we have  
8 not been asked to look at yet, although in  
9 light of the various Technical Basis Documents  
10 we have looked at it, but not officially put on  
11 our list of procedures to review -- the  
12 revision to TIB-4.

13 **DR. MAURO:** I'd like to just add, TIB-4 is  
14 becoming an extremely important guideline  
15 because it's being used as a default for all  
16 AWE facilities with uranium when you don't --  
17 when -- it becomes one of the more fundamental  
18 procedures. It has been revised twice.

19 **DR. ZIEMER:** We're up to Rev. 3 in TIB-4?

20 **DR. MAURO:** Rev. 3 PC-1, so it actually has --  
21 it's been revised even more recently. Now the  
22 important point is --

23 **DR. ZIEMER:** And you've reviewed --

24 **DR. MAURO:** No.

25 **DR. ZIEMER:** -- officially only the initial --

1 DR. MAURO: No, we --

2 DR. ZIEMER: None of the revisions.

3 DR. MAURO: The only reviews that it's received  
4 was because we had so many AWE's where it was  
5 used, we were forced to review it because that  
6 becomes a document.

7 DR. ZIEMER: Part of that.

8 MR. GRIFFON: Under -- under Task III, John,  
9 you reviewed what Rev., Rev. 1 or --

10 DR. MAURO: I don't believe -- I don't --

11 MR. GRIFFON: (Off microphone) (Unintelligible)

12 DR. MAURO: -- I have to say, I don't think we  
13 reviewed TIB-4. I could be corrected on that.

14 MR. GRIFFON: Oh, it's in the matrix.

15 DR. MAURO: It's on a list? Then we did. I  
16 apologize.

17 DR. ZIEMER: But that was the original version.

18 MR. GRIFFON: That was the original version, I  
19 believe, yeah.

20 DR. ZIEMER: And they have sort of tangentially  
21 reviewed the revisions as part of the ongoing  
22 work.

23 UNIDENTIFIED: Right.

24 DR. ZIEMER: But not officially.

25 UNIDENTIFIED: Right.

1           **DR. ZIEMER:** Okay.

2           **DR. WADE:** I can add TIB-4 then to the contract  
3 to see that its latest revision is reviewed.

4           **UNIDENTIFIED:** Yes.

5           **UNIDENTIFIED:** Yes.

6           **MR. GRIFFON:** I think we probably need to, to  
7 track these issues through. And it is an  
8 important procedure, obviously, yeah.

9           **MR. HINNEFELD:** Shall we just go past the TIB-4  
10 ones here, then?

11          **DR. ZIEMER:** Yeah, so that would carry down all  
12 through the TIB-4s here on -- there's how many,  
13 13 of those. So what will be needed then will  
14 be a review of Rev. 3 and any appropriate  
15 discussion on these items.

16          **MR. GRIFFON:** Yeah, the latest Rev., I think  
17 it's 3-PC-1, like John indicated, yeah.

18          **DR. ZIEMER:** Okay.

19          **MR. HINNEFELD:** Okay, and then the final  
20 procedures are interview procedures. And based  
21 on where we are, I believe this will have to be  
22 subject of additional discussion because we  
23 were -- had not been able to really provide a  
24 thorough response. We provided a sort of  
25 initial response. I'd like to provide a better

1 response by people who actually do the  
2 interviews, and I don't have that yet. So I  
3 think the final ones, the interview procedures,  
4 would have to be subject to -- discussed at the  
5 later meeting.

6 **DR. ZIEMER:** You're talking about Procedure 4 -  
7 -

8 **MR. HINNEFELD:** Talking about Procedure 4 --

9 **DR. ZIEMER:** -- and 5 --

10 **MR. HINNEFELD:** -- 4, 5 and -- it's not 6, I  
11 don't think.

12 **DR. ZIEMER:** Is 17 part of that?

13 **MR. HINNEFELD:** Seventeen, right -- 4, 5 and  
14 17. And they've actually all been combined  
15 into one procedure now, but the items -- I did  
16 go so far as to see that the issues here -- the  
17 findings here are not necessarily rectified by  
18 the new procedure that combined all those  
19 procedures into one. I mean, the issue  
20 probably carries forward, so it'll be subject  
21 for discussion although we may be talking about  
22 Procedure 90 at that point as opposed to --

23 **MR. GRIFFON:** Is Proc. 90 on the new list? I  
24 doubt it, kind of.

25 **MR. HINNEFELD:** I don't know that it's much

1 different than these. It's a sort of a  
2 consolidation of three procedures into one.  
3 One was like scheduling the interview, one was  
4 like conducting the interview and I don't know  
5 if it was documenting the -- it was something  
6 like that, and it was combined into one  
7 procedure describing how to do all those  
8 things. But I don't -- the findings certainly  
9 weren't alleviated by putting it in. I've  
10 looked at that.

11 **MR. GRIFFON:** I guess my concern with this one  
12 is that, you know, we've -- we've done a heck  
13 of a lot of interviews through this program,  
14 you've done a heck of a lot of interviews  
15 through this program. And you know, there's --  
16 half of these are answered by saying that the  
17 findings reflect a difference of opinion.

18 **MR. HINNEFELD:** Right.

19 **MR. GRIFFON:** And I think there's some pretty  
20 substantial differences of opinion maybe here,  
21 I don't --

22 **MR. HINNEFELD:** Well, I threw that in there  
23 because clearly -- I mean there are -- the  
24 claimant interview is conducted in accordance  
25 with a script that approved by Office of

1 Management and Budget. Okay? Collect -- if  
2 you're going to collect the information from  
3 more than a handful of people, you have to get  
4 a -- your formats approved by OMB and ours is  
5 approved by OMB and so we have to follow the  
6 script. Okay. Within the context of the  
7 script you can ask additional -- solic-- you  
8 can elicit -- you can elicit more information  
9 as you go through there as you need to. The --  
10 our view is that we have interviewers who are  
11 not necessarily health physicists. We have  
12 interviewers who have maybe experience working  
13 at a DOE site or some other -- you know, in  
14 some other way have learned some sort of  
15 knowledge about working for DOE, but they're  
16 not health physicists. And my recollection --  
17 it's been a while. My recollection on a lot of  
18 these comments were that at a particular point  
19 in the interview the interviewer should do this  
20 or that or other things that it really would  
21 require probably more knowledge and experience  
22 to know to ask than our interviewers have. You  
23 know, that to me is a lot of it. And so that's  
24 why I wrote down there that comment. That  
25 comment is mine, it reflects a difference of

1 opinion on what the interview is intended for.  
2 That's my word. I put that in there kind of as  
3 this doesn't -- there's a lot of things being  
4 asked for are things that I would not expect  
5 our interviewers to do. So that's why I listed  
6 that comment.

7 **DR. MAKHIJANI:** This is Arjun Makhijani. There  
8 are actually several different categories of  
9 comments.

10 **MR. HINNEFELD:** Uh-huh.

11 **DR. MAKHIJANI:** In regard to what the  
12 interviewer should know, we actually didn't say  
13 that the interviewer should be a health  
14 physicist. The only place where that came in  
15 was in the closeout interview where NIOSH does  
16 make a provision for a health physicist to be  
17 consulted later. We felt that the health  
18 physicist should be on line or on tap, at  
19 least, during that process because right now  
20 there seem to be at least some claimants who  
21 were uncomfortable and can't get their  
22 questions answered during closeout. But the  
23 comment on the interview itself is that the  
24 interviewer should have some knowledge of the  
25 case and the site, and so there's a sequencing

1           problem that arises as to when the interview is  
2           done. And so many interviewers know the sites,  
3           you know, because they've done interviews at  
4           many sites and so some reorganization of who's  
5           doing the interviews and how much they know  
6           about the site might be important.

7           And then there was a whole other set of  
8           comments that related to survivor claimants and  
9           the disadvantage -- our procedures, SC&A  
10          procedures, approved by the Board, required us  
11          to go through and evaluate whether it was  
12          equitable to all claimants. And we did that  
13          and we felt that survivor claimants were, in  
14          some categories, at a disadvantage and  
15          obviously --

16          **MR. HINNEFELD:** I don't think --

17          **DR. MAKHIJANI:** -- this is an item for  
18          discussion between NIOSH and us.

19          **MR. HINNEFELD:** I -- sure, we can discuss it.  
20          I mean it's on for discussion.

21          **DR. ZIEMER:** Well, on all of these dealing with  
22          the interview process which -- does that begin  
23          with Procedure 4?

24          **MR. HINNEFELD:** Yes. Yes.

25          **DR. ZIEMER:** And on through 17 -- 4, 5 and 17.

1 Do all of these require some further  
2 discussion?

3 **MR. HINNEFELD:** Yes.

4 **DR. MAKHIJANI:** Yes, we agree that they do.

5 **MR. GRIFFON:** And I think that -- I mean from  
6 my standpoint I think we need to look for some  
7 creative maybe fixes on this. You know, when  
8 we have these further discussions maybe you'll  
9 disagree with it, but you know, I understand  
10 the restrictions from the OMB standpoint that  
11 the -- 'cause we've -- this is sort of deja vu.  
12 We've been through this before. But you know,  
13 can the -- can the process be changed so that  
14 the interviewer has other tools available  
15 during the interview that help in the site-  
16 specific sort of nature of the follow-up  
17 questions and things like that. I guess that's  
18 a -- that's come up again and again at some of  
19 the public comment sessions that we've had, so  
20 I think it's important to consider and I'm --  
21 I'm --

22 **DR. ZIEMER:** What's considered outside the  
23 script? In other words, if you suggest the  
24 kinds of questions that an interviewer might  
25 use to elicit additional information, does that

1           become part of the script and need approval?

2           **MR. GRIFFON:** (Off microphone) (Unintelligible)  
3           asking, yeah.

4           **DR. ZIEMER:** Yeah, that's basically what -- I  
5           don't know if either the NIOSH people or --

6           **MR. HINNEFELD:** I don't know that I'm  
7           particularly expert in that and I don't know  
8           that I can really comment on that.

9           **DR. ZIEMER:** I think this needs further  
10          discussion with some Board input on that  
11          because we need to know what the limits are in  
12          terms of what can be changed without going back  
13          through OMB. And if -- I think if it's  
14          something the Board feels is important, then we  
15          need to suggest that -- even if it requires  
16          that, that that be done.

17          **MR. GRIFFON:** I think -- 'cause I think -- for  
18          example, some of the criticisms we've heard is  
19          this -- this list of radionuclides that -- I  
20          don't necessarily disagree with it being in  
21          there, but I think if -- if the interviewer  
22          prompts with code names, oftentimes the former  
23          workers will remember or know the code names.  
24          They may not know the radionuclide. You know  
25          Y-12 is a great example of that, there's so

1           many code names at the site -- although there's  
2           other classification issues surrounding some of  
3           that.  But you know, there might -- it might  
4           prompt -- you might get better responses if you  
5           have sort of an index of site terminology to  
6           help the interviewer in these interviews.  So I  
7           don't know if that's part -- you know,  
8           considered part of the script or not, or what  
9           the rules would be.  But I think some of this -  
10          -

11       **DR. ZIEMER:**  Well, let's put all --

12       **MR. GRIFFON:**  -- needs to be discussed.

13       **DR. ZIEMER:**  -- of these in that category  
14       requiring some additional discussion so we can  
15       determine how to proceed on these.

16       **DR. MAKHIJANI:**  Yeah, Dr. Ziemer, Stu and I  
17       caucused a little bit during the break and I  
18       was told that essentially we'd get somewhat  
19       more illuminating comments as to what the  
20       disagreements are or what the reviews are,  
21       because right now it's very difficult --  
22       because SC&A doesn't know exactly what the nub  
23       of the disagreement is that it -- carry forward  
24       the dialogue, so that I guess would be the next  
25       step.

1           **MR. HINNEFELD:** Right, I think the next step is  
2           for us to provide a better response based on  
3           the interview organization, to have these  
4           comments now. They need to provide the  
5           response.

6           **DR. ZIEMER:** Okay, thank you very much. I'm  
7           going to terminate this discussion at this  
8           point. It's noon. We want to allow enough  
9           time for the discussion on Y-12 right after  
10          lunch. Lew, do you have any comments for us as  
11          we take a break?

12          **DR. WADE:** Only to say that we will revisit the  
13          issue of the Task III reviews on Thursday and  
14          then the full Board can put its mind to, you  
15          know, giving instruction as to how we'll  
16          continue on with this issue. So I think this  
17          discussion has helped sort of bound the issue,  
18          and then the Board can decide and deliberate on  
19          Thursday.

20          **DR. ZIEMER:** Right. Okay, thank you very much.  
21          Then we will recess until 1:00 o'clock. Please  
22          try to be back promptly so that we have a full  
23          hour if possible to discuss the Y-12 site  
24          profile.

25          (Whereupon, a recess was taken from 12:00 p.m.

1 to 1:10 p.m.)

Y-12 SITE PROFILE DISCUSSION

UPDATE OF MATRIX

MR. MARK GRIFFON, ABRWH

MR. JOE FITZGERALD, SC&A

DR. JIM NETON, NIOSH

2 DR. ZIEMER: I'd like to call the subcommittee  
3 back into session. The item that we'll address  
4 now on our agenda is the Y-12 site profile and  
5 an update of the issue matrix that's been  
6 developed -- actually by the working group, and  
7 Mark Griffon was chairing that work group and  
8 Mark -- we have in our notebooks the matrix and  
9 also -- I think that matrix is still in the  
10 same version as what you distributed to the  
11 Board by e-mail at the time of our January 9<sup>th</sup>  
12 telephone conference call. Is that correct?

13 MR. GRIFFON: Yeah, as far as I know, no one's  
14 edited this. Correct.

15 DR. ZIEMER: Okay. So if you'll take us  
16 through the matrix and give us the status of  
17 each of the items. And after the break when  
18 the full Board convenes, we have again on the  
19 agenda the Y-12 site profile, at which time  
20 we'll have a full report on issue resolution  
21 from Joe Fitzgerald of SC&A. But if you'll  
22 lead us through the matrix right now as part of  
23 the work-- or Subcommittee group.

1           **MR. GRIFFON:** Okay, yeah, and for those in the  
2 audience, I think the matrix should be  
3 available on the side table. Correct?

4           **DR. WADE:** Yes.

5           **MR. GRIFFON:** Yeah. So we're talking from this  
6 matrix that says Y-12 site profile review,  
7 matrix of priority issues potentially relevant  
8 to SEC petition review. And really we -- the  
9 last public -- the last Board conference call  
10 about two weeks ago I think we discussed this  
11 matrix in depth and what I was going to do was  
12 try to provide a status of what's happened  
13 between the last Board meeting and what's --  
14 and where we're at today in terms of the  
15 outstanding action items.

16           **DR. ZIEMER:** Yeah, and Mark --

17           **MR. GRIFFON:** And if I could ask, you know,  
18 Jim Neton and Joe Fitzgerald -- if I miss  
19 anything certainly, you know, they'll fill in  
20 the gaps for us.

21           **DR. ZIEMER:** And by way of background, let me  
22 point out -- particularly for those members of  
23 the public who are here -- the site profile was  
24 reviewed extensively by the Board's contractor,  
25 and the original findings matrix had I think

1           135 issues on it. We're not focusing on all of  
2           those issues, but on those issues which pertain  
3           specifically to the petition for SEC status.  
4           And so out of those 135 there are a number that  
5           were identified as being pertinent to the SEC  
6           and those are the ones that are focused on  
7           here.

8           **MR. GRIFFON:** Right, and several -- some of  
9           those were rolled together into --

10          **DR. ZIEMER:** Yes, into--

11          **MR. GRIFFON:** -- you know, into one item so  
12          it's not like we reduced from 135 down to, you  
13          know, 20 or whatever, but some of them got  
14          rolled togeth--

15          **DR. ZIEMER:** Right but not everything in the  
16          original review is covered here.

17          **MR. GRIFFON:** That's correct.

18          **DR. ZIEMER:** -- we just want to make that  
19          clear.

20          **MR. GRIFFON:** Yeah. I guess just to step  
21          through the matrix, the first issue, internal  
22          dose issues and issue 1-A discusses the  
23          validity of the bioassay data. And the action  
24          items -- there's several action items listed,  
25          one through six in the matrix. I think -- as

1 an update on this, I think that NIOSH has now  
2 provided on the O Drive for access to the Board  
3 -- the O Drive is the -- a secure server, a  
4 link to a server that the Board has, and SC&A,  
5 our consultant have, so we're able to get this  
6 additional Y-12 external dosimetry data which  
7 takes us up through -- expanded the years right  
8 up to '57 I think --

9 **UNIDENTIFIED:** (Off microphone)

10 (Unintelligible)

11 **MR. GRIFFON:** '55? '65, I'm sorry, '65 -- and  
12 also added job title information into the  
13 database. So that -- that's certainly progress  
14 and that's something that SC&A have requested  
15 to do a --to assist in their review. So we  
16 have that.

17 Looking down the list, I'm not sure other parts  
18 of this have been -- I might ask -- item three  
19 specifically talks about the comparison between  
20 hard copy records -- for example, log books,  
21 data cards, and electronic records, if  
22 possible, and this was sort of as a way to  
23 check the reliability of the electronic data  
24 that NIOSH is using for these coworker models.  
25 And I don't think there's any status here but I

1           was just -- myself, I'm curious whether there's  
2           been any investigation into whether -- I know  
3           initially it was sort of thought that these --  
4           most of this raw data would be inaccessible or  
5           couldn't be located, and I don't know if you  
6           have any update on that item, Jim.

7           **DR. NETON:**    This is Jim Neton.  I don't have a  
8           lot to report other than we did have a  
9           conference call with ORAU on the 13<sup>th</sup> of  
10          January after we had this meeting on the 8<sup>th</sup>,  
11          and at that time ORAU did indicate that they  
12          may be able to access some of these laboratory  
13          analyses results and such.  Bill Tankersley was  
14          going to take that action item.  He was here  
15          this morning, I don't see him here right now,  
16          but -- but right now we're still hopeful we  
17          might be able to do something.  I don't know  
18          how extensive it might be, but we may be able  
19          to get a little -- shed a little information  
20          from that database.

21          **MR. GRIFFON:**   Okay.

22          **DR. ZIEMER:**   Mark, let me interrupt you just  
23          one moment here.  One thing I neglected to do  
24          when we moved to the Y-12 site profile was to  
25          ask Dr. Wade to clarify for us any conflicts of

1 interest on this particular site.

2 **DR. WADE:** Right, thank you, Mr. Chairman.

3 Yes, we are discussing the Y-12 site profile.

4 We have several Board members who are

5 conflicted with regard to Y-12. They are Roy

6 DeHart, Robert Presley, Paul Ziemer and Mark

7 Griffon -- Mark only where issues related to

8 the Atomic Trades and Labor Council are

9 discussed. Let me remind you that with regard

10 to site profiles, when discussing a site

11 profile, a Board member who has a conflict may

12 participate in the discussion at the table.

13 They cannot make motions or vote on motions. I

14 anticipate no motion will be made during this

15 discussion, so all those that are conflicted

16 can remain at the table and participate fully

17 in the discussion at the table.

18 **DR. ZIEMER:** Thank you very much. Okay, Mark,  
19 proceed.

20 **MR. GRIFFON:** And just -- maybe I'm -- maybe

21 I'm jumping around a little bit here. Number

22 two, Jim, the -- also we talked about reviewing

23 health physics reports. I think the same goes

24 there, that you haven't yet done anything on

25 this but you plan on...

1           **DR. NETON:** Yeah, there are actually --

2           **MR. GRIFFON:** Or it's underway.

3           **DR. NETON:** There is work in progress. You  
4 know, we're trying to get this done as quickly  
5 as possible. I will say that on the laboratory  
6 notebooks there was some belief that they may  
7 exist, but we have to be careful, you know, how  
8 much time that might be required to go to some  
9 vault or some area and decipher what's in  
10 there, so we've -- I've asked ORAU to be  
11 judicious in giving us, you know, some idea of  
12 how much time it's going to take. If this  
13 would take months and years, then maybe we  
14 don't want to go there. We believe our  
15 secondary back-up is this looking at the health  
16 physics reports and such to do what we would  
17 sort of call a sanity check on the data and the  
18 database versus the results that appear in the  
19 fairly extensive collection of health physics  
20 reports that we have.

21           **MR. GRIFFON:** Okay. And item number four --  
22 this item is basically that NIOSH will -- and  
23 I'm sure this is work in progress, as well.  
24 NIOSH and ORAU are going to try to provide --  
25 the database as it exists now has values of dpm

1           and it's not always intuitively obvious how the  
2           values in the database were taken from the raw  
3           data, the counts in the original laboratory  
4           records. We did have -- we have at least one  
5           laboratory report, but it was from 1965, that  
6           gave an equation. But there were also still  
7           some variables that were sort of undefined, so  
8           that's a work in progress as well. We want to  
9           know how they took raw data and calculated  
10          disintegrations per minute in the actual  
11          database that they're using. So we want to  
12          track that back.

13          Number five is, again, looking for quality  
14          control procedures that would have been in  
15          place for the bioassay program in that  
16          historical period of interest. And again,  
17          they're working on this action item.

18          And then number six is that apparently there  
19          was a letter or they're looking for some sort  
20          of communication between the site and DOE that  
21          DOE would accept the electronic record as the  
22          record of -- the legal record of the urinalysis  
23          data. And that's just another quality control  
24          sort of measure that they're going to look at  
25          in terms of assessing the overall reliability

1 of the -- so these are all -- all these action  
2 items are related to looking at the validity of  
3 the bioassay data. So that's sort of the  
4 actions that are in progress and the one has  
5 been accomplished.

6 Moving on to the second page -- I think it's  
7 the second -- yeah, and this -- I don't know if  
8 there's any progress on this one, Jim, 1-A-4.  
9 NIOSH had agreed that they would review these  
10 documents cited by SC&A.

11 **DR. NETON:** We're still looking at that. We  
12 have gone and obtained some additional  
13 documentation, I believe that was written by  
14 Keith Eckerman, related to this item and we're  
15 reviewing that as well. But we don't have a  
16 final position on this at this point.

17 **MR. GRIFFON:** So under review, again.

18 **DR. NETON:** Under review.

19 **MR. GRIFFON:** Sorry I keep calling you to the  
20 mike.

21 **DR. NETON:** That's all right.

22 **MR. GRIFFON:** All right.

23 **DR. ZIEMER:** Excuse me -- interrupt here. Are  
24 the documents referred to here -- have those  
25 been obtained, the Max Scott papers?

1           **DR. NETON:** Yes, we have those.

2           **MR. GRIFFON:** The next two items, no actions  
3           were necessary, primarily I think because it  
4           wasn't an issue of particular concern for the  
5           petitioning question, the SEC petition time  
6           period in question. It doesn't mean that it's  
7           not still a finding in the site profile, as  
8           Paul stated earlier, but no actions for this  
9           particular review.

10          Going down to 1-B, the header on that section  
11          is other radionuclides, and we have several  
12          action items here. Thorium air sampling  
13          database, I don't think we have that on the --  
14          do we?

15          **DR. NETON:** Well, it's not on the O Drive. It  
16          is on the drive, but it's not in the directory  
17          that you're normally used to seeing it. I just  
18          need to move it.

19          **MR. GRIFFON:** Okay.

20          **DR. NETON:** We put it out there a while ago,  
21          but it for some reason is not in the right  
22          location, so I just need to physically move  
23          that myself over there.

24          **MR. GRIFFON:** Okay.

25          **DR. NETON:** I will point out, though, that is

1 post-1960 data, so it's not likely to be  
2 relevant for the SEC petition that we're  
3 evaluating. But the data are there and  
4 available once I get them in the right  
5 location.

6 **MR. GRIFFON:** Okay.

7 **DR. NETON:** As long as I'm up here on number  
8 two --

9 **MR. GRIFFON:** Yeah, go ahead.

10 **DR. NETON:** -- I can --

11 **MR. GRIFFON:** You can give a positive  
12 (unintelligible) --

13 **DR. NETON:** I'm happy to report that the 6,000-  
14 record CD that was being reviewed for  
15 classification purposes is now -- has now been  
16 released as of I believe yesterday. ORAU has  
17 it in their possession and is looking through  
18 it to see what, if anything, we'll be able do  
19 with this to help reconstruct doses for the  
20 other radionuclides that we don't have data for  
21 currently.

22 **MR. GRIFFON:** Okay. Then number three, I think  
23 -- let me ask -- this is that NIOSH  
24 characterizes all the operations involving  
25 other radionuclides -- Calutron, Cyclotron, and

1 recycled uranium processes. I guess that sort  
2 of overlaps with number five, which is SC&A to  
3 review the ratios used for the recycled uranium  
4 as presented in the site profile internal dose  
5 section. And -- and -- go ahead. SC&A has  
6 provided at least a draft response to this I  
7 think, so...

8 **DR. NETON:** Right. I'd like to just back up.  
9 Items two, three and four are all somewhat  
10 related --

11 **MR. GRIFFON:** Yes.

12 **DR. NETON:** -- in that they have to do with  
13 these other radionuclides. We have a very  
14 large amount of data available for uranium  
15 exposure, at least bioassay records and air  
16 sample data. But it was correctly identified  
17 in the SC&A review that there were other  
18 exposures to other radionuclides such as  
19 plutonium and uranium-233 and gallium-67 I  
20 believe that we may not have data for. Those  
21 items -- two, three and four -- are related to  
22 that. The 6,000-record set had bioassay data  
23 for those other radio nuclides, I think more  
24 specifically plutonium and possibly polonium.  
25 And then the 4,000 -- Department 4000 data are

1 related to work that was done at Y-12 on behalf  
2 of the X-10 facility. And ORAU is looking  
3 through that to see if we can glean any  
4 information relevant to bioassay for the  
5 Calutron/Cyclotron operations, and hopefully  
6 between the Department 4000 dataset and the  
7 6,000-record set that's just been released  
8 they're going to attempt some type of a  
9 coworker matrix to help us flesh out what the  
10 exposures were for these other radionuclides.  
11 With that, I'll turn it over to Joe.

12 **MR. FITZGERALD:** Thank you, Jim. Just to  
13 clarify, I think there's almost three bins for  
14 this other radionuclides issue. And of course  
15 one is this question of the X-10 --

16 **MR. GRIFFON:** Right.

17 **MR. FITZGERALD:** -- sources. Then there's the  
18 recycled uranium, both of which I think we're  
19 now beginning to make some ground as far as  
20 actual data and analysis.

21 The third one, which is maybe a little more  
22 problematic, is something that we included in  
23 the site profile which deals with these other  
24 sources outside of X-10 and Y-12, and some of  
25 this is documented but perhaps a little more

1           speculative, which is the origins of U-233  
2           handling, perhaps processing that might have  
3           taken place. And the issue there is whether  
4           it, you know, would have been confined to X-10  
5           or would have been broader. The other issue is  
6           this notion of preferential melting and  
7           vaporization of radon in this case from the  
8           furnace operations. And that's something that,  
9           again, we identified as potentially a  
10          significant source term for workers that would  
11          have been in the vicinity of those operations.  
12          And again, it's not a plant-wide issue, but  
13          something we picked up enough in terms of the  
14          documentation and I think there was a number of  
15          HP analyses because this would have been a --  
16          this was a special situation and was sort of  
17          flagged by the HPs at the time. So that would  
18          be something that, you know, certainly the  
19          third bin would be sort of these other possible  
20          sources.

21          **MR. GRIFFON:** And the time frames on these are  
22          -- overlap the SEC petition time frames?

23          **MR. FITZGERALD:** Yes, uh-huh.

24          **MR. GRIFFON:** Yeah, I think that kind of would  
25          be captured under number three, which is that

1 all operations are characterized.

2 **MR. FITZGERALD:** Right.

3 **MR. GRIFFON:** That's sort of why I had --

4 **MR. FITZGERALD:** Yeah.

5 **MR. GRIFFON:** -- included it, but good -- good  
6 to clarify that 'cause we -- we -- I think we  
7 could easily forget that one. Okay. And I  
8 just wanted to point out on number five, the  
9 recycled uranium, there is a section in the  
10 site profile -- NIOSH's site profile that  
11 discusses this, and SC&A did do a preliminary  
12 review -- Joe, is that correct?

13 **MR. FITZGERALD:** That's right.

14 **MR. GRIFFON:** And maybe we'll hear more about  
15 that in the full Board meeting, but they've  
16 provided a preliminary review. NIOSH has not  
17 had an opportunity at this point to respond to  
18 that, but at least we've got progress on that.  
19 All right, 1-C -- and this talks about the  
20 choice of the 50<sup>th</sup> percentile intake rates.  
21 This is basically talking about a coworker  
22 model and what's the appropriate way to model,  
23 given different types of jobs or different -- I  
24 guess primarily based on job that you're  
25 looking at. Some of the actions -- the first

1           one, is there any update on the departments and  
2           their associated names and dates of when they  
3           were in effect?

4           **DR. NETON:**    No, I don't have any update on  
5           that issue, but number two, we did forward the  
6           list of the -- that spreadsheet that everyone  
7           was looking for that had the 40 functional  
8           groups that were collapsed.  But I'll still  
9           need to work with ORAU on getting the  
10          department listing put together, to the extent  
11          we can.

12          **MR. GRIFFON:**   Okay.  The third item is  
13          something that -- that there's -- it's the  
14          question of whether the most exposed  
15          individuals or most exposed departments were  
16          sampled or monitored.  And I think there's been  
17          a number of analys-- analysis on this issue,  
18          but I don't think we -- well, I guess we were  
19          going to look into that issue further,  
20          especially after the last workgroup meeting.  
21          We had some discussions about --

22          **DR. NETON:**    Right.

23          **MR. GRIFFON:**    -- it may not have been all the  
24          most exposed workers but rather it may have  
25          been based on the high priority departments

1           that the sampling was done.

2           **DR. NETON:** Right, if you remember at the last  
3           Advisory Board workgroup meeting on the 8<sup>th</sup>,  
4           Bob Presley raised an issue that -- it seemed  
5           to cast this source of data in a slightly  
6           different light. ORAU has since gone back and  
7           interviewed Mr. Presley and I think we've --  
8           they've clarified what at least the -- you  
9           know, the intent of his comments were, and also  
10          ORAU is going -- trying to refine their  
11          analysis to a larger degree for the internal  
12          dose area where we weren't as clear that the  
13          highest exposed workers were monitored. That  
14          was the subject of the debate, I believe.  
15          External dosimetry-wise, I think we've provided  
16          a fair amount of documentation to support that  
17          conclusion, but we're still working to refine  
18          the internal dose issue.

19          **MR. GRIFFON:** And you said you clarified --

20          **DR. NETON:** Well, I don't -- I'm not -- I don't  
21          have the report, but I know -- I think this is  
22          true, Mr. Presley -- that ORAU did have a  
23          follow-up interview with Bob after the Board  
24          meeting to try to figure out exactly what --  
25          you know, what he was saying because it was a

1           little confusing to us at the meeting as to  
2           what he was really relating.

3           **MR. GRIFFON:** And the outcome of that? Or --  
4           or--

5           **DR. NETON:** You know I -- I've not seen the  
6           report.

7           **MR. GRIFFON:** Okay.

8           **DR. NETON:** I wouldn't comment at this point.

9           **MR. GRIFFON:** All right. I don't know if --  
10          Bob, if you want to speak to that now? Okay.

11          **MR. PRESLEY:** I'd like to see the report.

12          **MR. GRIFFON:** Okay.

13          **DR. NETON:** I would say that I think it's not  
14          inconsistent with what our thinking was prior  
15          to Mr. Presley's remarks, but I can't go any  
16          further than that. I'm not aware of all the  
17          details, but that's my general impression.

18          **MR. GRIFFON:** All right. Item 1-D and E --  
19          these sort of got blended together -- type F  
20          uranium exposures and 48-hour delay in  
21          sampling.

22          **DR. NETON:** They're blended together because  
23          it's our opinion that if the 48-hour sampling  
24          issue goes away, the type F no longer becomes a  
25          limiting --

1           **MR. GRIFFON:** Right.

2           **DR. NETON:** -- nuclide solubility class. Dave  
3 Allen is working closely with Joyce Lipsztein  
4 from Brazil on this issue. They had some  
5 difficulty in connecting over the holidays.  
6 The analysis is still going on. We think we're  
7 pretty clear now on what Joyce's thoughts are  
8 on this and Dave is working on a refinement to  
9 that analysis which will I think -- right now  
10 he's trying to demonstrate that it's our belief  
11 that it was not always 48-hour sampling. There  
12 was a significant percentage of the routine  
13 samples that didn't wait for 48 hours. And if  
14 we can pull those out, it will demonstrate that  
15 the effect is minimal on the waiting period,  
16 and we need to finish that analysis. We're  
17 (unintelligible) in process.

18           **MR. GRIFFON:** Okay. 1-F overlaps with  
19 previous action items so I won't look at that,  
20 this is the job description question.  
21 Going on to external radiation issues, external  
22 exposure issues -- again, the first section, 1-  
23 A, looks at the validity of the data and  
24 explanation of coworker models. I think I  
25 mentioned this already, maybe ahead of time,

1 but the -- this item 1 -- this CER database has  
2 been expanded to include up to 1965, as Jim  
3 indicated. And it has -- they have added job  
4 titles for those data. I think SC&A has  
5 received that and took -- had a preliminary  
6 look at it. I'm not sure how extensive their  
7 comments will be but they have some comments I  
8 think to offer this afternoon so...

9 Let's see, adding job titles is number two,  
10 actually. Item three, I'm not sure that we  
11 have any action on this particularly.

12 **DR. NETON:** Yeah, I expected that -- to have  
13 that information by now. Unfortunately, I  
14 don't, but I think it will be forthcoming.

15 **MR. GRIFFON:** And then item four is the hard  
16 copy which I think is pending Bill's  
17 investigation.

18 **DR. NETON:** Right, that -- that's very similar  
19 to the external dosimetry issue raised in  
20 comment -- or item number one.

21 **MR. GRIFFON:** Internal item 1-A.

22 **DR. NETON:** Internal dose item 1-A. So yeah,  
23 that -- that's just the validity of the  
24 database or reliability of the database issue.

25 **MR. GRIFFON:** Right. And the same thing for

1 the fifth item I think. It's the quality  
2 control question again, looking for past  
3 procedures.

4 **DR. NETON:** Right. Yeah. We're moving on  
5 both paths, both reliability of the internal  
6 data and the external data.

7 **MR. GRIFFON:** Okay. All right, 1-A-4 -- I  
8 skipped 1-A-3, 1-A-4 --

9 **DR. NETON:** Yeah, that's a very interesting  
10 observation. I've gone back and reread ORAU  
11 Report 22. And if you look at it in detail,  
12 what it really did was evaluate both the  
13 internal and external dosimetry data available  
14 in NIOSH's HERB data holdings. And so it was  
15 not -- although one would think that the HERB  
16 data holdings would be, at a minimum, a subset  
17 of the CER data, I don't know. And so that  
18 data comparison really, in my opinion, is not  
19 valid for this exercise because it really was  
20 not an evaluation of the CER dataset  
21 themselves. I'm not exactly sure why it was  
22 done. I'm trying to get to the bottom of that.

23 **MR. GRIFFON:** I guess the question that I  
24 raised on this was if it could be done on that,  
25 why not on the CER database. But maybe it was

1 HERB being compared to the CER, I don't know.

2 **DR. NETON:** What -- what they actually did was  
3 pull a hundred cases -- I think it was a  
4 hundred -- a hundred cases that we had in our  
5 possession for claims and matched them against  
6 the data that were in the HERB database and  
7 found a 90 percent comparison. Now you have to  
8 be careful what you mean 90 percent, were 90  
9 percent of the cases there or were there  
10 disconnects. It's not clear from that report.  
11 But again, that's very different than looking  
12 at the CER data holdings and comparing that to  
13 the -- sort of the raw records. Because we do  
14 believe that the CER data we have is identical  
15 to the data that the DOE is providing us  
16 because they are actually the same database.

17 **MR. GRIFFON:** Right.

18 **DR. NETON:** See, I think the HERB dataset was  
19 -- the genesis of that was for an epidemiologic  
20 study, so the issues that the working group  
21 raised a while ago about, you know, the  
22 reliability of an epi dataset to do dose  
23 reconstructions is valid. But you know, we put  
24 that issue to bed since we've demonstrated the  
25 CER data holdings are actually the Y-12 data

1           holdings.

2           **MR. GRIFFON:** Right, right.

3           **DR. NETON:** So that report is not really  
4           applicable to this analysis.

5           **MR. GRIFFON:** 'Cause really it is comparing  
6           HERB with CER sort of through the claims,  
7           'cause it --

8           **DR. NETON:** Yes, exactly. Yeah, it is.

9           **MR. GRIFFON:** -- (unintelligible) rely on the  
10          CER (unintelligible).

11          **DR. NETON:** Right, but I can't -- I can't vouch  
12          for what was in the HERB holdings other than  
13          they were collected for an epi study. And so,  
14          you know, it would seem to us the best  
15          comparison would be what we currently are  
16          using, which is the CER dataset.

17          **MR. GRIFFON:** Okay. I'm not sure what further  
18          action --

19          **DR. ZIEMER:** It's (unintelligible) o'clock.  
20          Does that put that one to rest now or --

21          **DR. NETON:** Well, in my opinion it does.  
22          Although I can't take items off the action list  
23          unilaterally, but --

24          **DR. ZIEMER:** No.

25          **MR. FITZGERALD:** Yeah, you know, I guess we had

1 the same reaction perhaps that you did, and  
2 going through the site profile was just  
3 confusing, unclear why that statement was made  
4 and the reference to the report was made. This  
5 actually makes a lot of sense, but I'm just  
6 saying that when we went through it, that just  
7 stood out as an aberration of sorts and we just  
8 wanted to clarify what this 90 percent  
9 comparison had --

10 **MR. GRIFFON:** Now I'm confused why it was ever  
11 done, but that's another issue.

12 **DR. NETON:** Well, there's that. It also takes  
13 the 90 percent comparison off the table because  
14 I don't have to justify why it was --

15 **MR. GRIFFON:** So I think the issue, the way it  
16 was framed, is off the table -- in my opinion,  
17 anyway.

18 **DR. NETON:** Yeah, I believe so.

19 **DR. ZIEMER:** It appears to be a closed issue.

20 **MR. GRIFFON:** Although I'm just a member of  
21 the Subcommittee, you know.

22 **DR. NETON:** Yeah, I'm still trying to get to  
23 the bottom, and I will provide an answer when I  
24 find it, why that was done in the first place.  
25 I suspect that they were attempting to use the

1           HERB data before the CER data were, you know,  
2           looked at or -- I'm not sure, but...

3           **MR. GRIFFON:** Okay, so going on to 1-A-5 -- I  
4           think we're up to 1-A-5 -- and I think we had a  
5           response to this that was...

6           **DR. NETON:** Right, this --

7           **MR. GRIFFON:** Approximately 12 percent or some  
8           -- was that the number?

9           **DR. NETON:** No this had I think more to do  
10          with the --

11          **MR. GRIFFON:** Oh, no -- yeah, this is --

12          **DR. NETON:** -- 1-A-6 is where we're at, is that  
13          right?

14          **MR. GRIFFON:** Yeah.

15          **DR. NETON:** Yeah, that had to do with these  
16          spreadsheets, and it was clear in my mind  
17          during the working group meeting, but I have  
18          since lost focus on this. I'm not exactly sure  
19          exactly which spreadsheets this ref-- is  
20          referring to.

21          **MR. GRIFFON:** This is my -- I was looking for -  
22          - I wondered where this one went. Yeah, this  
23          is the thing I've been asking for for a while.  
24          And I think the same situation exists here,  
25          Jim, is that it's somewhere on the O Drive but

1           you haven't -- you haven't put it in one spot  
2           for us, so --

3           **DR. NETON:**    I guess the question that we have  
4           is are these the spreadsheets that were used to  
5           create the coworker model for the external dose  
6           results, or are these the worksheets that are  
7           used to do dose reconstructions?

8           **MR. GRIFFON:**   No, no, the -- the prior.  The  
9           first one you said.

10          **DR. NETON:**    So they were spreadsheets --

11          **MR. GRIFFON:**   For the external and internal, so  
12          you have the two.

13          **DR. NETON:**    Yeah, the external spreadsheets --

14          **MR. GRIFFON:**   Where the crystal balls models A  
15          through H I think or A through --

16          **DR. NETON:**    Well, it wouldn't be crystal ball  
17          models, it would be --

18          **MR. GRIFFON:**   Well, there's --

19          **DR. NETON:**    You're looking for the data,  
20          actually.

21          **MR. GRIFFON:**   Yeah.

22          **DR. NETON:**    Maybe this would -- for the  
23          external comparison, this may tie into the 147  
24          data --

25          **MR. GRIFFON:**   It may, yes.

1           **DR. NETON:** -- points so -- okay, so that makes  
2 more sense to me.

3           **MR. GRIFFON:** For the internal, you know, I've  
4 got this -- these spread sheets that are annual  
5 spreadsheets which basically pull the CER data  
6 in and --

7           **DR. NETON:** Right, and that's really what was  
8 used. I mean those are --

9           **MR. GRIFFON:** Right.

10          **DR. NETON:** -- those were used to generate  
11 lognormal distributions for every year from --

12          **MR. GRIFFON:** Right. But I don't think SC&A  
13 has even seen those. That's my understanding.

14          **DR. NETON:** Okay --

15          **MR. GRIFFON:** I just wanted to get everybody on  
16 the same page with all these different  
17 spreadsheets.

18          **DR. NETON:** Okay. Well, those are there. I  
19 need to find out where they are. I thought  
20 they were on the --

21          **MR. GRIFFON:** Again, I --

22          **DR. NETON:** Okay.

23          **MR. GRIFFON:** -- again, I think they're on the  
24 O Drive. They're probably not in one  
25 consolidated position.

1           **DR. NETON:**    Okay.

2           **MR. GRIFFON:**   And what I -- I think -- from my  
3           standpoint, I wanted to make sure I was looking  
4           at the final revision of whatever was being  
5           used.

6           **DR. ZIEMER:**   Well, it's not clear to me now  
7           what the answer to the original question is.  
8           The original question on the percentage -- are  
9           we on 1-A-5 or A-6?

10          **MR. GRIFFON:**   A-6.

11          **MS. MUNN:**     A-6

12          **DR. ZIEMER:**    Oh, on A-6.

13          **MR. GRIFFON:**   Yeah, we skipped over A-5.

14          **DR. NETON:**     I don't have an A-5 on my list,  
15          for some reason.

16          **MS. MUNN:**     A-5 is done.

17          **DR. ZIEMER:**    A-5 is done.   Okay.   But then A-6,  
18          whether the coworker models presented are  
19          sufficient for use in estimating pre-'61  
20          exposures.   The answer is?

21          **MR. GRIFFON:**   The answer is that we hadn't had  
22          a -- SC&A hadn't seen these tools that were  
23          used.   They've seen the procedures or the TIBs  
24          but they haven't seen the tools behind the  
25          TIBs, I guess.

1           **DR. NETON:** They're not -- they're not  
2 necessarily tools. They'd be analysis files, I  
3 think is what you're referring to.

4           **MR. GRIFFON:** Analysis files, I'm sorry.  
5 Analysis files.

6           **DR. NETON:** A tool is sort of like a workbook  
7 where you would --

8           **MR. GRIFFON:** Okay.

9           **DR. NETON:** I don't want to get hung up on  
10 vernacular, but yeah.

11          **MR. GRIFFON:** Yeah, yeah, yeah.

12          **DR. NETON:** Okay, well, that's clear in my  
13 mind then. I was not sure what -- I thought  
14 you were referring to a dose reconstruction  
15 tool, which is different than the analysis  
16 files.

17          **MR. GRIFFON:** We're still -- after all these  
18 years, we're still (unintelligible).

19          **DR. ZIEMER:** So these are the analysis files  
20 used for coworker...

21          **DR. NETON:** Used to develop the coworker TIB,  
22 that's my understanding, and those were some  
23 pretty sophisticated statistical analyses using  
24 various statistical -- you know, maximum  
25 likelihood estimators and that sort of thing.

1           There's another --

2           **MR. GRIFFON:** I think where this came up was at  
3           the last workgroup SC&A raised a question about  
4           were the zeroes considered in back-calculating  
5           the internal dose for the coworker models.

6           **DR. NETON:** Right.

7           **MR. GRIFFON:** And it was clear to me then that  
8           they hadn't seen the spreadsheets because if  
9           they had they would have how they were used.

10          **DR. ZIEMER:** Sure.

11          **MR. GRIFFON:** Or -- so I just wanted that to be  
12          out there so everybody was on the same page.

13          **DR. ZIEMER:** Okay, but there's still two parts  
14          to this then. One is making those available  
15          and the other part is still --

16          **MR. GRIFFON:** Is how -- right.

17          **DR. ZIEMER:** -- the sufficiency question will  
18          remain and --

19          **DR. NETON:** Well, yeah, I think the second  
20          part here is we had talked about arranging a  
21          technical meeting with the authors of the TIB  
22          that generated the coworker distributions and  
23          such, and we're prepared to facilitate that and  
24          -- possibly after these spreadsheets become  
25          available -- we would like to hook up our ORAU

1 folks with whoever on the SC&A side and our  
2 Board side want to participate. Because I  
3 think there -- you know this is a very  
4 sophisticated technical issue that really would  
5 be best handled in that setting.

6 **MR. GRIFFON:** I agree, yeah. Yeah. Okay,  
7 going on to 2-A, badging of maximally exposed  
8 individuals. Previously we discussed the  
9 monitoring, which would have been the --  
10 primarily the urinalysis monitoring. So this  
11 gets into the question of whether the maximally  
12 exposed individuals were badged, and --

13 **DR. NETON:** Right. Yeah, and that, as far as  
14 -- is this an external issue?

15 **MS. MUNN:** Yes.

16 **DR. NETON:** This is similar to the other  
17 issues, but external-wise we provided a number  
18 of pieces of data that tend to support our  
19 position that -- the item two I think is one  
20 that is still out there, which is related to  
21 the criticality accident where workers -- some  
22 workers, at least -- did not have badges on. It  
23 raised the question in ORAU's minds if  
24 everybody was badged, as should have been, why  
25 weren't workers who were in an -- who were

1 exposed to a criticality not wearing badges.  
2 And we do have a draft report -- or a report I  
3 think that I'm going to receive from ORAU that  
4 goes over this incident and discusses it in  
5 some detail. I think you'll find that the  
6 thinking at the time that if workers were in  
7 the area was there were -- there was no  
8 radioactive material there. The tanks had been  
9 cleaned. And what happened was a valve had  
10 been left open that leaked radioactive  
11 materials into the area. So it doesn't  
12 necessarily cast doubt on the -- at least the  
13 concept that was in place at the time. Now an  
14 incident occurred, for sure, but it doesn't --  
15 it doesn't discredit the fact that the program  
16 at the time was badging people that they  
17 thought were the most likely exposed. I mean,  
18 they weren't expecting a criticality,  
19 obviously.

20 **MR. GRIFFON:** I think the other thing that has  
21 occurred on this item in between meetings is  
22 that SC&A has done some follow-up on --  
23 previously ORAU -- I think it was at the last  
24 workgroup meeting ORAU and NIOSH provided a  
25 report on this -- on demonstrating or looking

1 at the fact that statistically -- statistical  
2 analysis of the fact that they felt that the  
3 highest exposed workers were in fact the ones  
4 that were monitored, and I think SC&A has had  
5 an opportunity now to review that further and  
6 may -- may report back on that.

7 **MR. FITZGERALD:** Yeah, I mean this is going on  
8 in real time and the expanded external database  
9 of '65 was very helpful and we were able to do  
10 some initial sorts this past week that allows  
11 us to kind of look in more granularity on these  
12 various years -- pre-criticality, post-  
13 criticality and '61 to '65 -- just to see what  
14 the numbers look like and the averages. And I  
15 think we still have some questions. I think  
16 the data is still, in my view, equivocal about  
17 this notion of the maximally-exposed individual  
18 being badged throughout that whole time frame.  
19 I think what we're seeing is that as you get  
20 further back in history, maybe the early '50s,  
21 I'm not sure that holds necessarily. But you  
22 know, again, we're sort of in this mid-way,  
23 haven't seen the 147 records yet. There's other  
24 things I think will help us get there and I  
25 think this has been a very fruitful thing. but

1 I think the data kind of -- kind of points you  
2 in the right direction. I think data in this  
3 case is going to be very helpful to -- to put a  
4 punctuation point under this issue.

5 **MR. GRIFFON:** So this is certainly still a  
6 pending action here or pending item, yeah. 2-B  
7 is the assignment of the coworker dose. I  
8 think there has been some update on TIB-51.  
9 Can someone -- Joe, did you guys review TIB-51  
10 and...

11 **MR. FITZGERALD:** Yeah, we did. Again, this is  
12 all in the last couple of weeks, but we have  
13 provided -- as of last Thursday, so this is  
14 fairly recent -- a set of comments. And we can  
15 talk about this again in the next session, but  
16 in general we thought it was a strong step  
17 forward, a pretty sound analysis. There are  
18 some issues and, again, we identified some of  
19 those issues, clarifications and questions  
20 about bases. But certainly it's responsive to  
21 a number of the issues that we were concerned  
22 about.

23 **MR. GRIFFON:** Should probably TIB-51 is --

24 **MR. FITZGERALD:** Oh, I'm sorry --

25 **MR. GRIFFON:** For the audience I should

1 (unintelligible) --

2 **MR. FITZGERALD:** Yeah, the TIB-51 deals with  
3 the angular dependence of neutron dosimetry, as  
4 well as the energy threshold of a film that was  
5 used for neutron measurements back in the early  
6 days, '50s and '60s. It's called NTA film and,  
7 again, it wasn't very responsive to lower  
8 energy neutrons, the -- more responsive to the  
9 higher energy neutrons. So there was a  
10 discrepancy in terms of the exposure for those  
11 lower energies. And this certainly provides I  
12 guess some conversion factors which can be  
13 applied that would correct for that. And I  
14 think that was a good analysis.

15 **MR. GRIFFON:** And the second action on there,  
16 Jim, is there any update on skin, skin  
17 (unintelligible) --

18 **DR. NETON:** I'm still waiting on an update from  
19 ORAU on that.

20 **MR. GRIFFON:** All right. I think that takes us  
21 through sort of these major pending issues for  
22 the --

23 **DR. ZIEMER:** Okay. And Mark, on your  
24 workgroup, you had Bob Presley, Wanda Munn, and  
25 was Mike Gibson -- and let me ask any of the

1 other members of that work group, do you have  
2 any comments to add on the matrix or related  
3 items?

4 **MS. MUNN:** Mark's done a good job of rolling  
5 it up.

6 **DR. ZIEMER:** Now, when we have the full Board  
7 session which is going to start in just a few  
8 more minutes, we're going to return to this.  
9 We will have a more formal presentation on the  
10 status of the Y-12 site profile as it pertains  
11 to the SEC. Let me just allow -- any other  
12 Board members that have comments or questions  
13 for Mark? This doesn't require any action. It  
14 basically is a status report to update us on  
15 where they are on -- in terms of the progress  
16 on the matrix. If that's -- if there are no  
17 comments, we're going to take a brief recess of  
18 ten minutes and then the full Board will  
19 convene at 2:00 o'clock for the regular Board  
20 session. So the subcommittee stands adjourned.  
21 (Whereupon, the meeting adjourned at 1:50 p.m.)

22

1

**CERTIFICATE OF COURT REPORTER****STATE OF GEORGIA****COUNTY OF FULTON**

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of January 24, 2006; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 7th day of March, 2006.

---

**STEVEN RAY GREEN, CCR**  
**CERTIFIED MERIT COURT REPORTER**  
**CERTIFICATE NUMBER: A-2102**