

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

WORKING GROUP MEETING

ADVISORY BOARD ON  
RADIATION AND WORKER HEALTH

NEVADA TEST SITE

The verbatim transcript of the Working  
Group Meeting of the Advisory Board on Radiation and  
Worker Health held telephonically on April 18, 2007.

C O N T E N T S

April 18, 2007

WELCOME AND OPENING COMMENTS DR. LEWIS WADE, DFO	6
INTRODUCTION BY CHAIR	9
COMMENT 20 RESPONSE	10
COMMENT 21: EXTREMITY DOSIMETRY	19
COMMENT 22: NO NEUTRON DOSE DATA UNTIL 1966	21
COMMENT 23: RESUSPENSION DOSES	31
COMMENT 24: HIGH-FIRED OXIDES	56
COMMENT 25: SITE EXPERT INTERVIEWS	61
RECAP OF RESPONSES 1 THROUGH 25	69
COURT REPORTER'S CERTIFICATE	74

### 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 MEMBERS

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

1  
2  
3

CLAWSON, Bradley

Senior Operator, Nuclear Fuel Handling

Idaho National Engineering & Environmental Laboratory

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

IDENTIFIED PARTICIPANTS

BROEHM, JASON, CDC  
ELLIOTT, LARRY, NIOSH  
HOMOKI-TITUS, LIZ, HHS  
HOWELL, EMILY, HHS  
MAKHIJANI, ARJUN, SC&A  
MAURO, JOHN, SC&A  
MCDONOUGH, ALEX, SEN. HARRY REID  
NETON, JIM, NIOSH  
OSTROW, STEVE, SC&A  
ROLFES, MARK, NIOSH  
ROLLINS, GENE, ORAU  
SMITH, CHERYL, DADE MOELLER AND ASSCS.

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

(11:00 a.m.)

1  
2WELCOME AND OPENING COMMENTSDR. LEWIS WADE, DFO3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21

Let me introduce myself. I'm Lew Wade, and I serve as the Designated Federal Official for the Advisory Board. And this is a meeting of the work group for the Advisory Board that's looking at the Nevada Test Site site profile. It's ably chaired by Robert Presley, members Munn, Clawson and Roessler. All of them have identified themselves as being on the phone.

Are there any other Board members that are on the call other than Presley, Munn, Clawson and Roessler?

(no response)

**DR. WADE:** Any other Board members on the call?

(no response)

**DR. WADE:** Okay, let's do our introductions starting with NIOSH/ORAU Team members, and please as is normally our custom, identify if you're conflicted relative to the Nevada Test

1 Site.

2 **MR. ROLFES:** This is Mark Rolfes. I'm a  
3 health physicist with NIOSH, and I have no  
4 conflict.

5 **DR. NETON:** This is Jim Neton. I'm with  
6 NIOSH, no conflict.

7 **MR. ELLIOTT:** Larry Elliott with NIOSH, no  
8 conflict.

9 **MR. ROLLINS:** This is Gene Rollins with O-R-  
10 A-U, and I have no conflict.

11 **MS. SMITH:** This is Cheryl Smith. I'm with  
12 the ORAU Team, and I have no conflict.

13 **DR. WADE:** Other NIOSH/ORAU Team members?  
14 (no response)

15 **DR. WADE:** How about SC&A team members?

16 **DR. MAURO:** John Mauro here, no conflict.

17 **DR. OSTROW:** Steve Ostrow on the phone, no  
18 conflict.

19 **DR. MAKHIJANI:** Arjun Makhijani, no  
20 conflict.

21 **DR. WADE:** Any other SC&A team members?  
22 (no response)

23 **DR. WADE:** What about other federal  
24 employees who are on the call by virtue of  
25 their federal employment?

1                   **MS. HOMOKI-TITUS:** This is Liz Homoki-Titus  
2 with HHS.

3                   **DR. WADE:** Welcome, Liz.

4                   **MS. HOWELL:** Emily Howell with HHS.

5                   **DR. WADE:** Welcome, Emily.

6                   **MR. BROEHM:** Jason Broehm with CDC.

7                   **DR. WADE:** Hello, Jason.

8                                 Other federal employees here by virtue  
9 of their employment?

10                                (no response)

11                   **DR. WADE:** Are there workers, worker  
12 representatives, members of Congress or their  
13 staff on the call?

14                   **MR. McDONOUGH:** Alex McDonough with the  
15 Office of Senator Harry Reid.

16                   **DR. WADE:** Welcome.

17                                 Workers, worker reps, members of  
18 Congress or their staffs?

19                                (no response)

20                   **DR. WADE:** Is there anyone else who would  
21 like to be identified as being on the call for  
22 the record?

23                                (no response)

24                   **DR. WADE:** Anyone else like to be  
25 identified?

1 (no response)

2 **DR. WADE:** Briefly as to phone etiquette,  
3 again, if you're speaking, speak into a  
4 handset and don't use a speaker phone to  
5 speak. It picks up all kinds of background  
6 noises. If you can, when you're not speaking,  
7 please mute your telephone. And be mindful of  
8 background noises, you know, cats meowing or  
9 children crying or background music if you  
10 were to put the phone on hold. All of those  
11 things can be very distracting among others.

12 So, Robert, it's all yours.

13 **INTRODUCTION BY CHAIR**

14 **MR. PRESLEY:** All right, thank you, Lew.

15 This is Robert Presley. When we met  
16 the last time on 3/21/07, or let's see. No,  
17 it wasn't. It was 27 I believe. We got down  
18 through Response 20 is what I show, and what I  
19 was going to ask, 20 is on the non-use of  
20 badges. Is there anything that we need to go  
21 through on 20 before we go to item 21?

22 (no response)

23 **MR. PRESLEY:** Everybody satisfied with what  
24 their -- well, one thing I need to ask, has  
25 everybody got a new copy of the matrix that

1 Mark sent out day before yesterday?

2 **MR. CLAWSON:** This is Brad. I've got a new  
3 copy of it.

4 **COURT REPORTER:** Bob, this is Ray. I don't,  
5 and I sure would like one if somebody could e-  
6 mail it to me.

7 **MR. PRESLEY:** Okay, I'll ask somebody from  
8 NIOSH if they'll go ahead and send that to  
9 Ray.

10 **MS. HOMOKI-TITUS:** Can you send it to me as  
11 well? This is Liz. I'll give you my e-mail  
12 address. It's [vhomokititus@cdc.gov](mailto:vhomokititus@cdc.gov).

13 **DR. ROESSLER:** It's probably on this list  
14 here, so I'll double check it. I'll send it  
15 to both of you.

16 **MS. HOMOKI-TITUS:** Okay, thanks.

17 **DR. ROESSLER:** The one that's on this list  
18 is vah9.

19 **MS. HOMOKI-TITUS:** That's fine. You can use  
20 that one as well.

21 **MR. PRESLEY:** Okay, if everybody's -

22 **COMMENT 20 RESPONSE**

23 **MS. MUNN:** Bob, I have a question about our  
24 Comment 20 and one of the common threads that  
25 we see running through here. We have repeated

1 that the work group's to review that work for  
2 completeness, and a number of the items that  
3 we went through on our last work group meeting  
4 I had scrawled done across mine, done, done,  
5 done.

6 I guess is it going to be possible for  
7 us today to be that descriptive about comments  
8 like, working group to review for  
9 completeness? From my perspective most of  
10 these that we have looked at have reached that  
11 point. We have reviewed it, and in my mind  
12 they are complete, but we don't say so  
13 anywhere on the matrix that we have. So I  
14 guess I'd raise that question with respect to  
15 Comment 20.

16 **MR. PRESLEY:** I was going to bring that up  
17 at the end, but that's good because you may  
18 not be here. We were going to bring that up  
19 to where we've got like where it says TBD work  
20 completed. Working group will review for  
21 completeness. And one of the things that I  
22 will ask Mark, are we going to get a copy of  
23 the new Technical Basis Document to where that  
24 we can go through and make a review and say,  
25 okay, this is what we would like to see in

1 here?

2 **MR. ROLFES:** Bob, we can definitely provide  
3 copies if that would be helpful to you.  
4 They're also going to be posted on our website  
5 as well for public access. So we can  
6 definitely, if you need a hard copy, we can  
7 definitely do that.

8 **MR. PRESLEY:** What about it, Board members?  
9 Is that -- or working group members, I'm  
10 sorry. Is that something that we can say  
11 right now that when we're through with this,  
12 and where we've got there's things that say  
13 that the working group concurs, but they will,  
14 but they need to look at it from the Technical  
15 Basis Document, do we want to get a copy of  
16 that and then go through it before we meet in  
17 Denver?

18 **MR. CLAWSON:** Bob, this is Brad. I think  
19 that we've got to. You know, we've got lots  
20 of these that they're changing guidance to  
21 Chapter Five and Chapter Six, and the work  
22 group will review these.

23 **MR. PRESLEY:** That's right.

24 **MR. CLAWSON:** So we've got to.

25 **MR. PRESLEY:** I think so, too.

1           **MS. MUNN:** I agree.

2           **MR. PRESLEY:** Wanda or Gen?

3           **DR. ROESSLER:** Yes, this is Gen. I agree.

4           **MR. PRESLEY:** Okay, then, Mark, if you  
5 would, I would like to have it in hard copy,  
6 and you can go ahead and put it on the web,  
7 too. If you don't mind sending me a hard  
8 copy?

9           **MR. ROLFES:** Sure, is there anyone else that  
10 needs a hard copy?

11          **MR. CLAWSON:** This is Brad. If you'd send  
12 me a hard copy, I'd appreciate it.

13          **DR. ROESSLER:** I'd like mine by e-mail.  
14 This is Gen.

15          **DR. MAKHIJANI:** This is Arjun. Could I ask  
16 a clarifying question about schedule? Is that  
17 revision of the TBD ready? Because it says  
18 will be added. I'm not clear on when this is  
19 going to happen in relation to the next Board  
20 meeting which is very soon.

21          **MR. ROLFES:** Arjun, this is Mark, and many  
22 of the issues have been updated, and the TBD  
23 has been revised since we've been meeting.  
24 There are a couple of issues that are drafted,  
25 and we're basically awaiting the final review

1 and approval of those new issues. So the  
2 revised TBDs that we have currently approved  
3 and on our website may not address every issue  
4 that we're discussing today.

5 **DR. MAKHIJANI:** Oh, okay. Like this  
6 particular one, is it in the TBD?

7 **MR. ROLFES:** Which?

8 **DR. MAKHIJANI:** Response 20, coworker dose  
9 will be added to TBD to assist in identifying  
10 --

11 **MR. ROLFES:** The draft language has been  
12 added to an unapproved version so this is not  
13 yet available in the currently available site  
14 profile.

15 **MS. MUNN:** Mark, in the grand scheme of  
16 things, how many of these working group to  
17 review for completeness items do you  
18 anticipate will actually be in a form for us  
19 to look at in the TBD between now and May 2<sup>nd</sup>?

20 **MR. ROLFES:** I'd like to have Gene address  
21 that if Gene could speak to how many of the  
22 issues from the matrix we have completed a  
23 response and then approach to address the  
24 issues that were raised.

25 **MR. ROLLINS:** I think if you'll look -- this

1 is Gene Rollins. I think if you'll look at  
2 the matrix, we've identified those areas where  
3 the work has been completed for the TBD, and  
4 the draft changes have been put into a draft  
5 revision. I don't know what the protocol is  
6 for providing that outside, for any outside  
7 review, but I don't know that we typically do  
8 that. Maybe somebody from NIOSH could address  
9 that.

10 **MR. PRESLEY:** Larry or Jim?

11 **DR. NETON:** Yeah, I guess I was thinking  
12 about something else when Gene was talking,  
13 but the idea is that these things have been  
14 drafted but not incorporated into the site  
15 profile.

16 **MS. MUNN:** Right.

17 **DR. NETON:** I think we would prefer to have  
18 these in the site profile before they're  
19 issued rather than send these out piecemeal.

20 **MR. ELLIOTT:** This is Larry Elliott. I'm  
21 sorry. I was -- the disadvantage of these  
22 teleconferences is that it allows us here in  
23 the government to do multitasking and I was  
24 elsewhere at that point in time. However, I  
25 picked up where Jim left off there, and I

1 would say that these are pre-decisional  
2 documents and until we have placed our review,  
3 technical and peer, on top of them and stamped  
4 them with our approval, we're not going to  
5 share them outside.

6 **MR. PRESLEY:** That's great.

7 **MS. MUNN:** Yeah, this is Wanda, and I agree  
8 with that position. I'm just concerned over  
9 how close we are to the May meeting and what  
10 we intend to, what we as a working group have  
11 committed to with respect to that meeting,  
12 what we're actually going to be able to  
13 produce. That's why I asked.

14 The question I originally asked was  
15 how much of this is going to be in form for us  
16 to truly review it and come to some decision  
17 on whether or not it has been completed and  
18 adequately addressed. It sounds to me as  
19 though we're not going to have the documents  
20 in that condition. We'll have the rough  
21 draft, but we won't be able to have reviewed  
22 what we have asked to be completed for the new  
23 NTS site documents. Am I getting that  
24 correct?

25 **MR. PRESLEY:** Larry, from what I gathered

1 from what you just said, we will not be  
2 getting a rough draft.

3 **MR. ELLIOTT:** That's correct. What you will  
4 see will be our final version when we say it's  
5 final.

6 **MR. PRESLEY:** Now, and then what we can do  
7 at the meeting is say that we have gone  
8 through our 20-something items, and that we  
9 have resolved these, and so many items are  
10 tied back to the Technical Basis Document and  
11 so many have been completed. And if we don't  
12 have the Technical Basis Document then we will  
13 at that point say we're awaiting the Technical  
14 Basis Document and that will be it.

15 **MR. ELLIOTT:** I assure you that we are  
16 seriously trying our best to produce all of  
17 this information in a timely way, but we don't  
18 want something half-baked, half-cooked going  
19 forward as we think is our best effort.

20 **MS. MUNN:** No, we don't want to mess with  
21 this until it's done, when you finish baking  
22 it.

23 **MR. PRESLEY:** I don't want to go through and  
24 then somebody jump up here and say, well,  
25 that's, or let's change this and let's change

1 that. I don't want to do that. I'd rather  
2 have a completed document that's been gone  
3 through and the I's are dotted and the T's are  
4 crossed.

5 **MS. MUNN:** Okay, so essentially bottom line  
6 here is I can actually look on the web and get  
7 what is finalized now. And anything else is  
8 going to have to wait until the release of the  
9 full document which will not occur until after  
10 the Denver meeting, correct? At which time we  
11 may or may not need the working group meeting  
12 to eval that.

13 **MR. ROLFES:** That's correct, Wanda. I just  
14 wanted to remind everybody that there have  
15 been some page changes to particular TBDs for  
16 the Nevada Test Site. For example on January  
17 11<sup>th</sup>, there were some related to comment ten  
18 about the external environmental dose, and we  
19 have resolved that --

20 **MS. MUNN:** Yeah.

21 **MR. ROLFES:** -- as well as a couple of  
22 others.

23 **MS. MUNN:** Okay, very good, thank you.

24 **MR. PRESLEY:** All right, let's --

25 **DR. MAKHIJANI:** Mr. Presley, may I ask a

1 clarifying process question just for us?

2 **MR. PRESLEY:** Go ahead, Arjun.

3 **DR. MAKHIJANI:** So I am presuming from this  
4 discussion that when you have looked at the  
5 revisions, then at that point we'll decide  
6 whether the issue is closed or whether you  
7 want to review it yourself or assign pieces of  
8 it to us. So in the interim, there's nothing  
9 for us to do other than the comment on the  
10 mass loading model that we started.

11 **MR. PRESLEY:** That's the way I see it.

12 **DR. MAKHIJANI:** Okay, great.

13 **MR. PRESLEY:** If any of the working group  
14 members see it any different than that, but  
15 right now that's where I see it.

16 Anybody else have any more comments?

17 (no response)

18 **COMMENT 21: EXTREMITY DOSIMETRY**

19 **MR. PRESLEY:** Let's start with item 21 which  
20 has to do with extremity dosimetry. It has to  
21 do with the assembly workers at Nevada at the  
22 Test Site.

23 And, Mark, do you want to take the  
24 lead on that?

25 **MR. ROLFES:** Sure. Our response I'll just

1 read into the record that we have developed  
2 NIOSH has developed guidance for extremity  
3 dosimetry and has incorporated the information  
4 into the TBD. We note that few, if any,  
5 Nevada Test Site contractor personnel fall  
6 into the category of bomb assembly worker  
7 since these operations were conducted  
8 primarily by the national laboratory  
9 employees. If we do find that Nevada Test  
10 Site contractor personnel were involved,  
11 guidance will be developed for the laboratory  
12 employees -- I'm sorry, guidance developed for  
13 the laboratory employees will be applied as  
14 appropriate to those NTS contractors as well.

15 **MR. PRESLEY:** Okay, I think that's great.  
16 Does anybody have any comment on this  
17 response?

18 **MS. MUNN:** May I mark it done?

19 **MR. PRESLEY:** I would love to.

20 **MS. MUNN:** Do we have agreement from SC&A  
21 that this is adequate?

22 **MR. PRESLEY:** John or Arjun?

23 **DR. MAURO:** I'll take one shot and then  
24 Arjun can take a shot. One of the, certainly,  
25 the fact that guidance is being developed for

1 extremity dosimetry and can be applied to  
2 these workers is, the answer's, of course,  
3 that's the intent. The degree to which the  
4 Board would want us, the Advisory Board, would  
5 want us to review that guidance is not the  
6 question. So I guess the answer to the  
7 question is, yes, this item is closed to the  
8 extent that the Board may or may not want us  
9 to take a look at what that guidance is when  
10 it's finalized and published and whether it's  
11 in this site profile or is a part of some  
12 other OTIB.

13 **MR. PRESLEY:** Okay, I'm going to go ahead  
14 and mark this closed then right now until we  
15 look at it. All righty? Anybody else have  
16 anything on item 21, response 21?

17 (no response)

18 **COMMENT 22: NO NEUTRON DOSE DATA UNTIL 1966**

19 **MR. PRESLEY:** Okay, Response 22 has to deal  
20 with neutron dose data until, there were no  
21 neutron dose data until 1966 and partial data  
22 available 'til 1979. We have a response from  
23 NIOSH.

24 Mark, do you want to go ahead and go  
25 through this?

1           **MR. ROLFES:** Yes, we did look into the  
2 neutron dose concern from atmospheric nuclear  
3 testing, and we found that for civilian  
4 employees associated with the Nevada Test Site  
5 the closest workers were at a control point  
6 during atmospheric testing in Area Six. We  
7 found that the workers would not have been  
8 within range of a nuclear test that would have  
9 exposed them to a substantial amount of  
10 neutrons. And I believe we did a scoping  
11 calculation to determine that for anybody that  
12 was farther, for anyone that was out of Area  
13 Six during a test, they would have received  
14 less than one millirem of neutron dose.

15           **MS. MUNN:** Does SC&A accept that?

16           **DR. MAKHIJANI:** We haven't been asked to  
17 review that so, at least I haven't reviewed  
18 it.

19                           John?

20           **DR. MAURO:** No, the only thing I could say  
21 is that it does ring true based on some of the  
22 other knowledge I have regarding neutron  
23 exposures, so I guess my reaction is the  
24 answer that you gave does ring true; however,  
25 we have not confirmed that. I guess that's

1 about the best I can do right now.

2 **MS. MUNN:** Well, this raises another  
3 procedural problem in my mind. I was of the  
4 understanding that no additional authority was  
5 necessary, that the purpose in our work group  
6 meetings here was to look at the questions  
7 that had been raised by SC&A, to get a  
8 response from NIOSH with regard to those  
9 questions, and to attempt to resolve them in  
10 the working group. So I guess am I hearing a  
11 hint that SC&A is of the impression that once  
12 that response from NIOSH is there, the SC&A  
13 responsibility has been fulfilled unless  
14 another specific request is forthcoming as to  
15 whether or not that responds adequately to  
16 their question?

17 **DR. MAURO:** That's my understanding. And on  
18 this particular set it's my understanding that  
19 from the previous conference call we were  
20 given the action item to work with Gene  
21 Rollins in looking into the resuspension  
22 issues. So that was the only, in other words,  
23 at that last meeting that was the approach  
24 that NIOSH proposed to deal with resuspension.  
25 It was presented, material was provided to

1 everyone including SC&A, and SC&A was  
2 requested at that time to look at that  
3 material. And it's my understanding though  
4 that on these other matters, such as the one  
5 we just discussed, we don't take any action  
6 unless we are asked to proceed.

7 **MS. MUNN:** But then that begs the question  
8 as to how our working group is to resolve the  
9 issue.

10 **DR. WADE:** I think -- Wanda, this is Lew, I  
11 think the model we're following is if you look  
12 at the materials in front of you, and you  
13 decide that you need your contractor to do  
14 something to bring it to closure, then they're  
15 available to do that and can be tasked just by  
16 this work group. If you feel you've reached  
17 closure, then it's finished.

18 **MR. PRESLEY:** Yeah, because -- this is Bob  
19 Presley. SC&A had a chance to comment this  
20 from the get-go when we first brought up these  
21 responses, and we did have some comments from  
22 them. And then this is NIOSH's response back.

23 **MS. MUNN:** And so when I asked the question  
24 so is this sufficient, and I hear, well, we  
25 don't know because we haven't been tasked with

1 looking to see if it's sufficient, that raises  
2 a big red flag in my mind. Am I missing  
3 something here?

4 **DR. WADE:** This is Lew. I think, if, when  
5 you look at the material in front of you, you  
6 have doubt that you don't think you can  
7 resolve the issue within the work group, then  
8 you simply need to task your contractor in  
9 whatever way you would like.

10 **MR. PRESLEY:** If we don't think that this  
11 is, as a working group, that this response is  
12 good, then we have the right to go back and  
13 tell SC&A to look at it and see if they, what  
14 they believe. Or if we believe, then we  
15 should mark it closed.

16 **DR. WADE:** I don't think this is different  
17 than any of the other work groups. I think  
18 we're just talking about it a bit more  
19 formally. I mean, NIOSH spoke. SC&A spoke.  
20 Here's the materials. The work group can  
21 check it off or say, no, we think that the  
22 site profile modification needs to be reviewed  
23 by our contractor. Then SC&A will do that and  
24 bring that result back to you.

25 **MS. MUNN:** But I think you're absolutely

1 correct, Lew, that's why I'm suddenly very  
2 concerned when I hear Arjun say, well, we  
3 haven't reviewed that and so we're not  
4 prepared to say whether that's adequate or  
5 not. Then are we at some later time going to  
6 hear that our contractor did not agree to the  
7 comments that the work group felt closed the  
8 issue? That's a concern to me.

9 **DR. WADE:** John Mauro can speak to that. I  
10 think SC&A would then be silent on the issue  
11 if they've not been tasked to look at it.

12 **DR. MAURO:** Yeah, it's been our approach to  
13 only move forward on and we're given direction  
14 as opposed to presuming that in this  
15 particular case we did not say, okay, I did  
16 not turn on the team to say, okay, let's look  
17 at each of these responses and be prepared to,  
18 the only one we did that for is this  
19 resuspension question with Gene Rollins.

20 The others we don't normally go ahead  
21 because it could turn out to be a substantial  
22 endeavor spending considerable resources. And  
23 we felt that before we do something like that,  
24 we want to make sure the Board wants us to  
25 move forward.

1           **DR. WADE:** And again I'll speak clearly on  
2 this. I mean, with great respect SC&A is a  
3 very important part of this process, but  
4 they're not an active player in this. They,  
5 if they're tasked, they do the work and bring  
6 it back to the Board. If they're not tasked,  
7 then they're not authorized to do that work,  
8 and I would expect them not to do it and not  
9 speak to it, and certainly not to bill hours  
10 for it.

11                   I think, John, you completely  
12 understand that.

13           **MS. MUNN:** Well, that, yes, you're simply  
14 verifying what my original concept had been  
15 here. But since we've had what sounds to me  
16 to be some questions with respect to the work  
17 group's view of whether this issue is closed  
18 or not, I was concerned that I was hearing  
19 something that was going to affect the  
20 (unintelligible).

21           **DR. WADE:** Arjun's points were exactly  
22 correct as he made them. I mean, we had a  
23 work group call last time. SC&A wasn't tasked  
24 with looking into that issue; and therefore,  
25 they come here not able to speak because they

1 weren't asked to do that work. And I think it  
2 is progressing according to plan, at least as  
3 I see it. Again, if anyone has any questions  
4 they need to raise them now or they can raise  
5 them with me offline.

6 **MS. MUNN:** I was just concerned about the  
7 tenor of the response there, Arjun. I know  
8 Arjun didn't intend it that way, but it just  
9 was a concern for me. So when we're saying  
10 this item is closed now, we accept the  
11 response from NIOSH as being adequate.

12 **DR. WADE:** If the work group says that,  
13 that's fine.

14 **MS. MUNN:** It's done.

15 **DR. WADE:** If the work group said the item  
16 is not closed and doesn't task SC&A, then the  
17 active work needs to be done by the work  
18 group.

19 **MS. MUNN:** Very good.

20 **DR. MAKHIJANI:** Ms. Munn, just to clarify my  
21 own response. I was not responding to the  
22 work group's opinion of whether it's closed or  
23 not. If I remember correctly, you asked  
24 whether SC&A had an opinion of that, and I  
25 just said that we hadn't reviewed it.

1                   **MS. MUNN:** No, no, I just said if --

2                   **DR. MAKHIJANI:** I shouldn't be speaking to  
3 the issue according to the protocol that Dr.  
4 Wade has just described. We haven't reviewed  
5 it so we're not, we don't have an opinion  
6 about that.

7                   **MS. MUNN:** That's clear to me now. Thank  
8 you, Arjun.

9                   **DR. MAURO:** This is John Mauro. One other  
10 point I think that might be helpful is that  
11 we're in the process where there will be  
12 eventually a TBD issued which will address all  
13 these items. At that time, of course, the  
14 Board would look at, or the working group  
15 could look at to revise TBD and make judgments  
16 as to which ones they, you folks feel have  
17 been adequately dealt with and are convincing.  
18 Or you may judge at that time that, well, we'd  
19 like our contractor to look at it.

20                                 That's one way to do it. That would  
21 be putting the process of closure at the back  
22 end after the TBD is issued. The alternative  
23 is to, any items like the ones we're talking  
24 about right that you feel it would be some  
25 advantage for SC&A to look at in a focused way

1 and then get back to the working group so that  
2 the TBD when it is finally issued does reflect  
3 the contributions that SC&A may have to this  
4 which is the way the resuspension factor is  
5 being dealt with.

6 So, I mean, this is a process issue.  
7 It's completely up to the working group on how  
8 you'd like to move forward.

9 **MS. MUNN:** Right, and I think traditionally  
10 we have done a little of both of that. In  
11 this particular case it is my understanding  
12 based on the discussion that we had just a few  
13 minutes earlier before this one that we would  
14 want to see the final TBD before we made these  
15 absolute decisions with respect to the  
16 completeness of the response. The end result  
17 is what we're going to be looking at. I  
18 thought that's what we agreed to earlier.

19 **DR. WADE:** And just to anticipate -- this is  
20 Lew Wade again -- when the work group sees the  
21 modified TBD, it can task its contractor in a  
22 number of ways. It could say, it could ask it  
23 to do nothing. It could ask it to look at  
24 items six, seven and 12 in the matrix to see  
25 if they have been adequately covered. Or it



1                   resuspension model and that floating model.  
2                   And Gene Rollins had prepared a white paper.  
3                   And at the last meeting we had agreed to have  
4                   John Mauro take a look at some of the  
5                   conservatisms. We had five conservatisms in  
6                   the model, and I believe we were also awaiting  
7                   some response.

8                   I believe John Mauro was going to pass  
9                   that document on to Dr. Anspaugh as well for  
10                  his opinion, and I don't know if that has been  
11                  done to date. But our response for this is  
12                  basically the white paper that was prepared.  
13                  And I believe everything has been done on our  
14                  side, but we were just waiting for  
15                  confirmation from SC&A.

16                 **MR. PRESLEY:** John?

17                 **DR. MAURO:** Yes, I'd be happy to speak to  
18                 that. We have been working on the problem.  
19                 We have accomplished quite a bit. We do plan  
20                 to submit a report to the working group on the  
21                 items, but I could give you a status report,  
22                 and I'll try to keep it brief, what the  
23                 elements are and where we think we have  
24                 achieved closure and where there's still a  
25                 little bit more homework that we're doing, not

1 a lot, but things we're looking into.

2 With regard to, the model itself has  
3 certain elements to it, and that's probably  
4 the best way to talk about is by each element  
5 and where we are on each one.

6 The first is the dust loading that is  
7 being, well, the first is it's my  
8 understanding that this particular model that  
9 was provided to us is to be used to  
10 (unintelligible) only as an upper bound  
11 method. And a more realistic treatment of the  
12 problem is going to be dealt with on a case-  
13 by-case basis. And I'd like to ask NIOSH is  
14 that a correct understanding of the  
15 perspective of how we are to look at it,  
16 mainly, for denial purposes solely?

17 **MR. ROLFES:** Gene, are you there?

18 **MR. ROLLINS:** Yes. This is Gene Rollins.  
19 The way it was currently constructed, John, we  
20 recognize that it represents potentially very  
21 much of an overestimation of potential  
22 intakes. But that's okay for most of the  
23 internal organ response that it could be  
24 problematic for some of the respiratory organs  
25 where the doses could be quite high.

1                   So the idea was to put forth a model  
2                   that could be used in a majority of the cases  
3                   to keep the cases moving. And in the event  
4                   that we came across a respiratory cancer that  
5                   these intakes did affect compensability, then  
6                   we would sharpen the pencil and come up with a  
7                   more reasonable estimate of what potential  
8                   intakes could have been. And I wrote in that  
9                   paper, I attached a proposed wording that  
10                  would provide guidance to the dose  
11                  reconstructors as to what actions they could  
12                  take to reduce those bounding intakes or what  
13                  we refer to as the maximum intakes.

14                 **DR. MAURO:** Okay, that's good because that's  
15                 how we are reviewing the write up right now,  
16                 the fundamental model that you've proposed.  
17                 And within that context I can go through the  
18                 elements that make up this model as a  
19                 bounding.

20                 First and foremost, probably the most  
21                 important assumption is that you're assuming  
22                 that the worker is located at Area 8 which is  
23                 one of the highest areas of contamination  
24                 second only to Area 30. We concur that Area  
25                 30 is very less likely to be occupied, we've

1 looked into that, than Area 8. So picking  
2 Area 8 seemed to be the reasonable bounding  
3 assumed area where the person might have been.

4 If you have no other information, and  
5 we think of it like this. If you have a  
6 person, you know he was at the site, you know  
7 he was outdoors. It only applies, of course,  
8 during the post-testing, that is, post-1962  
9 time period. And it's our understanding that,  
10 so when you're in a situation where you want  
11 to reconstruct a worker's dose that was  
12 outdoors post-'62, you're not quite sure where  
13 he was, and you don't know how much time he  
14 might have been out there.

15 And we're going to try to place an  
16 upper bound for the purpose of denial. And  
17 you also have some information that he was not  
18 in any tunnels. He was not associated with  
19 Baneberry, which is a major venting operation.  
20 In other words there are a lot of qualifiers  
21 that our perspective is that, yes. Our  
22 understanding is that this particular model is  
23 to be used with those qualifiers. If the  
24 person was, you know, if you have better  
25 information or if you know that he was

1 involved in tunnel work or he was involved or  
2 close by during a venting operation,  
3 especially Baneberry -- I believe Baneberry  
4 was post-'62 -- then, or other important  
5 venting, then you really can't necessarily use  
6 this.

7 So that's sort of like our first  
8 overarching observation. It's almost like a  
9 qualifier. It's within that context that we  
10 understand that this particular tool will be  
11 used.

12 Now, given that context then we say,  
13 okay, picking Area 8 looks pretty good. We're  
14 going to write all this up for you and our  
15 rationale for it. But looking good as a  
16 fundamental approach. Five milligrams per  
17 cubic meter is the dust loading that you're  
18 assuming this person is going to experience.

19 And assuming that he experiences that  
20 2,600 hours per year is certainly over the  
21 top. We agree with that. In fact, we have  
22 some data here from a lot of work that was  
23 done at the Nevada Test Site for Yucca  
24 Mountain where we have information on dust  
25 loadings and five milligrams per cubic meter

1 as, and as a long-term average is certainly a  
2 bounding assumption.

3 Now the places where we're having a  
4 little difficulty, and bear with me for a  
5 moment. When you look at Area 8, what you,  
6 think of it like this. It's a series of  
7 bull's eyes where the explosion took place,  
8 and you have localized areas of relatively  
9 high concentrations, and then large areas of  
10 relatively low concentrations. It's a pretty  
11 big area.

12 So what we're looking at is answering  
13 the question, well, is it possible, is it  
14 plausible that an individual who would be  
15 working in Area 8 may have spent a large  
16 portion of his time in one of the sub-  
17 locations within this large Area 8 where the  
18 average activity to which he could have been  
19 exposed could have been substantially higher.

20 Now, we're looking at the disk, the CD  
21 that you had sent us, Gene. I really  
22 appreciate that. And that's one of the things  
23 we're looking at right now. And Steve Ostrow  
24 is on the line, who I asked to look at that.  
25 And based on the feedback from Steve --

1                   Certainly you could give it if you  
2 wanted, correct anything I say.

3                   It looks like they're all localized  
4 areas where the activity could be on the order  
5 of 100 to perhaps a thousand times higher than  
6 the average activity.

7                   **DR. OSTROW:** That's in the MacArthur Report.

8                   **DR. MAURO:** Yeah, that's the MacArthur  
9 Report.

10                   So one qualifier, and this is not to  
11 say that the model is not reasonable, but one  
12 qualifier is if you postulate a scenario where  
13 the person is spending a lot of time in one of  
14 these sub-portions of Area 8 -- now that may  
15 not be feasible. It may turn out that no one  
16 really spent 2,600 hours per year in the  
17 center of the worst bull's eye, so we're with  
18 you 100 percent on that.

19                   But at the same time exploring the  
20 concept that there are these variabilities  
21 within Area 8. And the variabilities are up  
22 but they're small. The variabilities are  
23 relatively large, and so we feel that some  
24 discussion -- and we're looking into this a  
25 little bit so we're going to contribute some

1 written material that might be helpful -- but  
2 some discussion on the variability and why  
3 going with the numbers that you have picked  
4 are, in fact, in combination with some of the  
5 other assumptions, 2,600 hours, five  
6 milligrams per cubic meter, taken collectively  
7 still represents a bounding estimate.

8 But when we found out that there were  
9 localized areas that were up to a thousand  
10 times higher, we started to say, hmmm, you  
11 know, maybe that five milligrams doesn't do  
12 the deal anymore. But then again another area  
13 we're looking at is it may turn out that the  
14 areas where it's that high, there may have  
15 been rad safe controls in place -- and in  
16 fact, Steve Ostrow is looking into that also  
17 for me right now -- where those areas may well  
18 have been under some special control, fenced  
19 off, and people didn't go there because they  
20 were so much elevated above the rest of the  
21 area.

22 If that was the case, then that  
23 scenario that I just described is really off  
24 the table unless the person that's out there  
25 is sort of downwind, not in the area but

1 downwind of the area. So in other words there  
2 are nuances to the analysis which probably  
3 needs to be explored a little bit further.

4 And I think at the end by doing what I  
5 would call a little bit more analysis of the  
6 scenarios that may apply to a given person  
7 that you're going to use this for and  
8 demonstrating that these aspects to it such as  
9 this story I just told regarding localized  
10 higher areas, are appropriately covered with  
11 the model.

12 And the last item -- and Gene and I  
13 spoke about this, and we're checking this out,  
14 too -- is in 1964, in other words, right now  
15 the data characterizing the radionuclide  
16 deposition on Area 8, I believe was collected  
17 around 1990, the measurements, and reality is  
18 if you go back within time, because we haven't  
19 applied this, to post-1963 and as a result the  
20 radionuclides that you see in 1990 are, of  
21 course, all the long-lived ones.

22 If you go back to 1964, '65 which is  
23 only a year or so after the above ground  
24 testing ceased, there might very well be a  
25 list of radionuclides that are relatively

1 short lived but are still there and could  
2 possibly also, so you may have missed some  
3 part radionuclides. Gene had explained to me  
4 that they are coming up with a method for  
5 dealing with that. And in discussing these  
6 matters with some of the folks that I work  
7 with, the method has to do with certain  
8 adjustment factors to be made for that time  
9 period.

10 I think that's important that that  
11 particular concern be explored. And if it  
12 turns out that that is important, that is, if  
13 we don't take that into consideration, it's  
14 possible, notwithstanding the five milligrams  
15 per cubic meter, which we agree is over the  
16 top, you might miss some important doses to  
17 people who might have worked there let's say  
18 at admin but in Area 8, and perhaps some of  
19 the higher areas in 1964, '63, in post-  
20 testing. So this is sort of like a snapshot.

21 One last item and I'll leave you alone  
22 related to all these matters is the concept of  
23 an enrichment factor. We reviewed some data,  
24 some very nice data of sort of Yucca Mountain  
25 on resuspension and enrichment factors.

1                   And enrichment factor simply says if  
2                   you know what the picocuries per gram is in  
3                   the soil that you have before you, that you're  
4                   standing on, and then you take an air sample,  
5                   and you have a certain number of grams per  
6                   cubic meter of dust in the air that you're  
7                   breathing, is it appropriate to assume that  
8                   the picocuries per gram of radioactivity in  
9                   the dust that you're inhaling is the same as  
10                  the picocuries per gram in the dust or the  
11                  soil that you're standing on that's in the  
12                  selected top few centimeters.

13                  It turns out that a lot of work was  
14                  done, not a lot, some work was done on that  
15                  subject then published, and we found that  
16                  typically what's used is an enhancement factor  
17                  of a typical value of three. What this means  
18                  is because the stuff that's re-suspended are  
19                  the smaller particles, and since there's more  
20                  activity per gram on the smaller particles  
21                  than, let's say, on the full distribution of  
22                  dirt which is a distribution that includes  
23                  larger particles, there's more surface area  
24                  per gram on the stuff that's in the air.

25                  So that's been studied, and so there's

1 an enhancement. It's only a factor of three.  
2 So what I would say is this, that there are  
3 aspects to the model that Gene has put forth  
4 that probably need to be discussed a little  
5 bit, the kinds of things I'm talking about.  
6 In the end a factor of three multiplied, let's  
7 say enrichment factor, is probably more than  
8 accounted for by the fact that you're using  
9 five milligrams per cubic meter. But  
10 nevertheless, I think it would, the report,  
11 the site profile, would benefit from some  
12 discussion of all of these different issues  
13 that I just sort of painted across the board  
14 here.

15 We're going to send some materials,  
16 some references and some information, not a  
17 big report. It'll be a small report only  
18 putting in a modest effort by some very  
19 knowledgeable people, but we will send that  
20 off. I'm hoping to have it out next week, and  
21 it'll be in your hands, Gene, and hopefully,  
22 you'll find it useful in helping to finalize  
23 the model that you're using. Right now we're  
24 not saying that the model that you have is in  
25 any way deficient. We're saying that there

1 are aspects to the assumptions that are  
2 imbedded in the model that probably need to be  
3 explored a little further in order to make  
4 sure that it's bulletproof so to speak.

5 **MR. ROLLINS:** John, this is Gene Rollins. I  
6 appreciate the work that you're doing, and  
7 I'll look forward to seeing that report.

8 There's one other item that I would  
9 like for you to consider when you're going  
10 through all of these pieces of data, and that  
11 is somehow it seems to me we need to reconcile  
12 empirical data that was gained from the air  
13 sampling program because as I understand it  
14 those air samples were not put in areas that  
15 typically, where people didn't work. I mean,  
16 those air samplers were put out there to  
17 measure the airborne concentrations in areas  
18 where people worked. And we have a plethora  
19 of that data.

20 **DR. MAURO:** Okay, you know, I have to admit  
21 we were not looking at that.

22 Steve, is any of that data in the  
23 dataset that you've been looking at?

24 **DR. OSTROW:** No, I'm aware of it, but we  
25 haven't been looking at it.

1           **DR. MAURO:** Okay, so, yes, I understand what  
2 you're saying, and I think it's certainly  
3 worthwhile. In other words notwithstanding  
4 all of these things we talked about, if you've  
5 got some real air sampling data collected  
6 while people were working in terms of dust  
7 loading and the picocuries per cubic meter in  
8 the breathing zones, that would be great, but  
9 I thought you didn't have that. I have to  
10 admit.

11           If you have some of that, we'd be more  
12 than happy to look at it. And I don't think  
13 very long to look at it to, as being another,  
14 I guess, facet of how to come at this problem  
15 and how to ensure that, in fact, what you're  
16 using as a model is, in fact, bounding.

17           **MR. ROLLINS:** John, if you go into Chapter  
18 Four of the TBD, which is where we had  
19 produced the resuspension model, the early  
20 part of that chapter has a pretty good  
21 discussion on air sampling data and provides a  
22 summary by area and by year.

23           **DR. MAURO:** We will definitely go back to  
24 that. You know, I have to apologize. I did  
25 not go back to the original TBD. We've been

1 working with the new material that you  
2 forwarded to us. Had I had the presence of  
3 mind to do that I certainly would have done  
4 that.

5 So, Steve, let's put that on the list  
6 and take a quick look and crosscheck that data  
7 against the kinds of issues we're talking  
8 about here.

9 By the way, for the benefit of the  
10 working group, I don't think it's appropriate  
11 to use the upper bound on every one of these  
12 parameters so I'm not saying that. All I'm  
13 saying is that I think by disclosing and  
14 airing out these aspects of the model that  
15 they were taken into consideration and a  
16 prudent set of conservative assumptions were  
17 used and some realistic assumptions in  
18 combination so that you would come up with a  
19 model that's not so ridiculously over the top  
20 as to be completely unrealistic but  
21 conservative enough that one could say that it  
22 is bounding. So, yes, we'll be happy to do  
23 that, and I think we could do that pretty  
24 expeditiously, and it won't affect our  
25 schedule. We could take care of that and

1 still get our report out some time next week.

2 **DR. MAKHIJANI:** John, this is Arjun. In  
3 your presentation did you say that Lynn  
4 Anspaugh's preparing a paper, and do we intend  
5 to attach it as an attachment --

6 **DR. MAURO:** No, no, this --

7 **DR. MAKHIJANI:** -- from it or what is the  
8 situation with that?

9 **DR. MAURO:** My plan is this. I've been  
10 looking at it. Lynn is going to send me his  
11 perspectives, and I'll be getting that on  
12 Friday or earlier, but right now we're  
13 planning to get it this week, perhaps Friday.  
14 Steve Ostrow is looking at certain issues that  
15 I believe I'll be getting early next week.

16 My plan was to pull it all together  
17 into a single report integrating all this  
18 information, telling the story the way I just  
19 described it. Then you and I and the rest of  
20 the team after I prepare the draft, then the  
21 people who have been looking at these  
22 different elements will, you know, we'll  
23 discuss it. And my guess is we're going to be  
24 okay, a little polish, and then we'll move it.  
25 Hopefully, we'll be okay.

1                   **DR. MAKHIJANI:** Sorry for the public  
2 question on process.

3                   **DR. MAURO:** Oh, sorry, Gene, one more thing.  
4 Your relaxation length is fine. That's  
5 another piece that we confirmed. So a lot of  
6 the pieces we confirmed, but we have these  
7 other areas that we're looking at, and we're  
8 going to try to package up for you.

9                   **MR. ROLLINS:** Thank you, John.

10                  **MR. PRESLEY:** This is Bob Presley. What I'm  
11 hearing is that we need to give this time for  
12 SC&A to finish their review and then I presume  
13 that there will be an exchange with SC&A and  
14 NIOSH on SC&A's review. And then we will get  
15 something back from NIOSH on this response.  
16 Is that correct?

17                  **MR. ROLFES:** Yeah, that's correct, Bob.

18                  **MR. PRESLEY:** Then the only thing I know to  
19 do is put a note here that will say we're  
20 waiting for review.

21                  **DR. MAURO:** Yeah, after all those words the  
22 answer is yes. We will be putting a report  
23 out, and I guess after that NIOSH will, we'll  
24 hopefully come to closure and put this one to  
25 bed.

1           **MR. PRESLEY:** Anybody on the working group  
2 have a comment?

3           **MR. CLAWSON:** This is Brad. I just wanted  
4 to find out about this air sampling data that  
5 they had. Is this air sampling data that was  
6 taken right there with the workforce or is  
7 this air sampling data that is run off a  
8 continuous process in roundabout areas? I  
9 guess this would be for Mr. Rollins.

10          **MR. ROLLINS:** This is Gene Rollins. This is  
11 information that I've extracted from the  
12 annual environmental reports, and these would  
13 be from, as I understand it, continuous air  
14 samplers that have been located in the field.  
15 And as I have been told, those locations were  
16 chosen based on areas where the majority of  
17 the work actually occurred within these areas.  
18 They did have control air samplers on the  
19 boundary or outside the boundary, and there's  
20 some limited information in that area.

21          **MR. CLAWSON:** I'm just wondering if some of  
22 this air data that they were pulling out was  
23 actually right there with the workforce.  
24 Because as I've seen in many situations, you  
25 know, you may have a lot of particulates and

1 stuff from the dust, but until you start  
2 stirring that up, you're going to see a  
3 different result on that. And I just thought  
4 I'd kind of get a fairly good idea of what  
5 type of air sample data we did have.

6 **MR. ROLLINS:** My understanding is that most  
7 of these data are from areas where work was  
8 ongoing.

9 **MR. CLAWSON:** Okay, I appreciate it.

10 **DR. ROESSLER:** Bob, this is Gen.

11 **MR. PRESLEY:** Yes, go ahead, Gen.

12 **DR. ROESSLER:** I have a specific question on  
13 this comment, but you're probably going to  
14 cover it with regard to the whole discussion  
15 today. I'm wondering what is the working  
16 group's responsibility before the Denver  
17 meeting on this comment and maybe any other  
18 ones that come up where things are not quite  
19 closed?

20 **MR. PRESLEY:** Well, as I said awhile ago,  
21 the only thing that I know that we can do  
22 before the Denver meeting is come up with a  
23 statement that says that we have met, and  
24 we've gone through all 25 comments. And we  
25 have resolved certain comments, and we are

1                   awaiting the TBD document for final review.  
2                   And then also I can understand right now where  
3                   we will probably be waiting on this Response  
4                   23.

5                   **DR. ROESSLER:** So we will not, when the  
6                   report comes out from SC&A next week, that  
7                   will be information for us but until we can  
8                   get together as a work group again, which  
9                   probably will not be before the meeting, we  
10                  can't resolve some of these things.

11                  **MR. PRESLEY:** That's the way I see it.

12                  **DR. ROESSLER:** Okay, thank you for the  
13                  clarification.

14                  **MR. CLAWSON:** Bob, this is Brad again.  
15                  Won't we still have some overarching issues  
16                  with the Nevada Test Site and so forth?

17                  **MR. PRESLEY:** I think we will. We may find  
18                  something in that TBD.

19                  **MR. CLAWSON:** Well, I just saw we had like  
20                  the nasal-oral breathing and so forth like  
21                  that. I believe they were kind of like a  
22                  overarching issue in many places.

23                  **MR. PRESLEY:** That's correct.

24                  **MR. CLAWSON:** And I just wanted to make sure  
25                  we were there.

1           **MR. PRESLEY:** And what we need to do is when  
2 we give our report on the ones that are going  
3 to be not site specific but program specific,  
4 we need to point those out.

5           **MR. CLAWSON:** I understand.

6           **MR. PRESLEY:** I think that what we will do  
7 there is if we get to the point where we need  
8 to make a recommendation, the only thing I  
9 know to do is to in our recommendation point  
10 out that we either recommend this or we don't  
11 recommend this, but there's a caveat that says  
12 we are still waiting for the nasal breathing  
13 model to be completed. Because that's going  
14 to, as I understand it, that's going to be  
15 program specific. Is that not right?

16                           Jim or Larry?

17           **DR. NETON:** Yes, that's right, Bob.

18           **MR. PRESLEY:** Okay.

19                           Wanda, do you have anything on this?

20           **MS. MUNN:** No, I don't. It's been clear  
21 from the outset that this was going to be a  
22 thorny one, and as long as SC&A can come to  
23 the conclusion that the process that's being  
24 undertaken is adequate. From my understanding  
25 of the description it's more than adequate.

1 But as long as we have that feedback from the  
2 contractor, I believe we can go forward with  
3 it. We certainly can't do anything until that  
4 happens.

5 **DR. MAURO:** Now, Wanda, one more thing. The  
6 discussion I just had really would answer  
7 questions five, six, seven and 23.

8 **MS. MUNN:** Yes.

9 **DR. MAURO:** So in one fell swoop we're going  
10 to hit a lot.

11 **MR. PRESLEY:** That's correct.

12 **DR. MAURO:** Yeah, in addition, but please  
13 bear in mind that remember this particular  
14 response as we're putting it together is going  
15 to deal with this, what we call bounding doses  
16 for the purpose of denial for that particular  
17 worker. And it would not apply to necessarily  
18 to the realistic --

19 **MS. MUNN:** I understand.

20 **DR. MAURO:** -- or people that worked in  
21 tunnels or people that were exposed to  
22 venting. So as long as that's understood that  
23 it does have very confined applicability.

24 **MS. MUNN:** We've made those caveats from the  
25 outset.

1           **DR. MAURO:** Very good.

2           **MR. CLAWSON:** Hey, Bob, this is Brad again.  
3           You know I thought that we were kind of  
4           keeping track of kind of some of the  
5           overarching issues. And the reason I bring  
6           this up is I looked at some of our previous  
7           matrix, and you know, they had the stuff like  
8           the 250 days and stuff like that. And we put  
9           those under an overarching issue. And I just  
10          want to make sure we're not missing those.

11          **MR. PRESLEY:** No --

12          **DR. WADE:** This is Lew, the 250-day issue is  
13          being looked at by another work group. I  
14          think all of the issues that have been raised  
15          as sort of complex-wide issues by this work  
16          group have been captured by Dr. Neton and are  
17          reported regularly at meetings. If anyone  
18          feels there's an issue when you compare the  
19          two, what this group thinks are overarching  
20          issues in Jim's list, then you need to let us  
21          know.

22          **MR. PRESLEY:** What Brad's saying, Lew, is  
23          that we need to note on this that these are  
24          overarching issues, and that somebody else is  
25          looking at these, and they will be taken care

1 of down the road.

2 **MR. CLAWSON:** That's correct, Bob, because  
3 earlier on to be able to get this matrix down,  
4 we took many of the overarching issues out of  
5 it because of what was going on with NIOSH and  
6 so forth. But I just wanted to make sure that  
7 as we look at these that we don't forget that  
8 those are in the background there. I just  
9 didn't want to miss them, and Bob covered it  
10 great. I appreciate it.

11 **MR. PRESLEY:** I tell you what I will do. I  
12 will get with Mark between now and when we go  
13 and try to have this thing revised for us to  
14 have. And we will mark each one of these that  
15 we feel is an over -- a complex-wide issue.  
16 We will call them that and note them on there,  
17 and that way I'll try to get this out before  
18 we leave to go out there. Everybody can look  
19 at it and agree that these are the overarching  
20 issues.

21 **MR. CLAWSON:** I appreciate that because what  
22 I have to do is I have to go back through some  
23 of our previous matrix and see what we had put  
24 in under this. And from the outside eyes  
25 looking in it, where they're no longer there I

1 don't want the concept that we're not  
2 reviewing them at all.

3 **MR. PRESLEY:** Right.

4 **MR. CLAWSON:** And I also feel it keeps me on  
5 line, too.

6 **MR. PRESLEY:** We'll go ahead and do that.  
7 We'll go back and mark these with some type of  
8 a something to where that everybody will know  
9 that this issue is not being, that we're just  
10 overlooking it. We can do that. That's no  
11 problem.

12 **MR. CLAWSON:** Thank you.

13 **MR. PRESLEY:** Anybody have any other  
14 comments on 23? I appreciate John Mauro's  
15 comments, and also Gene Rollins' white paper.

16 **COMMENT 24: HIGH-FIRED OXIDES**

17 Let's go with 24 which has to do with  
18 the presence of high-fired oxides for  
19 atmospheric testing. And, Mark, do you want  
20 to read you all's response?

21 **MR. ROLFES:** Well, the high-fired oxides  
22 from atmospheric weapons testing is really not  
23 an issue right now because of the SEC during  
24 the atmospheric weapons testing period.  
25 However, we're currently investigating the

1 reactor testing that was done, and this is  
2 sort of one of those overarching issues as  
3 well. And I believe we've addressed high-  
4 fired plutonium oxide in a separate Technical  
5 Information Bulletin which has been approved.

6 I guess our job is now to incorporate  
7 some language into the Technical Basis  
8 Document to allow us to apply that Technical  
9 Information Bulletin to Nevada Test Site. And  
10 I'll let Jim comment further.

11 **DR. NETON:** I can add a little more to that.  
12 Mark's right, we've issued, proved and issued  
13 TIB-49 which deals with dose reconstruction  
14 (unintelligible) plutonium that are strongly  
15 retained in the lung, and that was intended to  
16 address plutonium across the complex. And  
17 where we are right now is we're working on a  
18 program evaluation plan, a PEP, to identify  
19 all respiratory tract cancers that had  
20 previously been denied and denied through the  
21 Super-S evaluation and determine which ones  
22 need to be re-evaluated and reworked under  
23 this new TIB's guidance.

24 In some sense the NTS cases that were  
25 affected by the solubility issue will be

1 caught in this PEP, and Mark's correct that  
2 for future cases the Technical Basis Document  
3 needs to be revised to include this guidance.

4 **MR. PRESLEY:** Jim, this is Bob. You  
5 mentioned a Technical Basis Document 49.

6 **DR. NETON:** Well, it's Technical Information  
7 Bulletin.

8 **MR. PRESLEY:** Okay, now is that part, is  
9 this Table 5D-24 that's mentioned in our  
10 response? Is that part of that?

11 **MR. ROLFES:** No, it is not, Bob. The table  
12 that you're referring to is within the site  
13 profile for Nevada Test Site.

14 **MR. PRESLEY:** Then the only thing I know to  
15 do on 24 is mark it complete, and we're  
16 waiting to further review. Anybody have  
17 anything --

18 **MS. MUNN:** Well, it's complete because TIB-  
19 49 has been issued and that Program Evaluation  
20 is going to look at any previously completed  
21 case where solubility was an issue in the  
22 calculation.

23 Did I get that right, Jim?

24 **DR. NETON:** That's right, Wanda. This would  
25 only apply to respiratory tract cancers

1 because of the longer retention in the lungs  
2 themselves.

3 **MS. MUNN:** I suspect you may actually have  
4 seen one or two of those in lung studies  
5 you've already done.

6 **DR. NETON:** Yeah, we need to go through and  
7 evaluate not only which cases were evaluated  
8 for plutonium, but which ones could have had  
9 this Super-S material involved. And that  
10 would probably be most of them if we don't  
11 know anything about the specific processes  
12 involved. Like Mark mentioned, the reactor  
13 fire?

14 **MR. ROLFES:** Yeah, the reactor testing, the  
15 ram-jet testing at Area 25.

16 **MR. CLAWSON:** Mark, there was more reactor  
17 testing than that out there, correct? We had  
18 Rover and are we looking at those, too or just  
19 the one?

20 **DR. NETON:** Brad, we'll look at every case  
21 that involved a plutonium intake for Rocky  
22 Flats and complex wide, and we have captured  
23 them all into a pretty big net right now.  
24 We're reworking them one by one.

25 **MR. CLAWSON:** Okay, thank you.

1           **DR. NETON:** And I think what needs to be  
2 done is the document, the site profile for  
3 NTS, needs to be modified to reflect this new  
4 guidance on Super-S whether it refers to TIB-  
5 49 or what. It just needs to be incorporated  
6 in there so that that issue doesn't arise in  
7 future dose reconstructions.

8           **MS. MUNN:** We'll just look for clarification  
9 in Chapter Five, right?

10          **DR. NETON:** Right.

11          **MR. ROLFES:** Correct.

12          **MR. PRESLEY:** Okay, as I see this then --  
13 this is Bob. We are actually waiting on NIOSH  
14 to come back with a response they put into the  
15 site profile. Is that correct?

16          **MR. ROLFES:** That's correct.

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

18          **MR. PRESLEY:** Okay.

19          **MR. CLAWSON:** This is Brad. We've kind of  
20 got the overarching issue, right, the Super-S?

21          **DR. NETON:** This isn't an overarching issue.  
22 It's well on its way to completion though.  
23 Actually, the issue has been resolved. We  
24 have a document that we can use to move  
25 forward. Now it's a matter of just applying

1           it complex wide and NTS is one of those sites  
2           that we're looking at.

3           **MS. MUNN:** That's what the new TIB does.

4           **DR. NETON:** Correct.

5           **MR. PRESLEY:** Anybody else have a comment?

6           (no response)

7           **COMMENT 25: SITE EXPERT INTERVIEWS**

8           **MR. PRESLEY:** We'll go on to 25 which has to  
9           do with site expert interviews. It was said  
10          that this was inadequate. NIOSH went back and  
11          looked at quite a few interviews. They were  
12          supposed to get some paperwork to SC&A, and as  
13          I understand it that this has been done.

14          Mark, do you want to comment on this?

15          **MR. ROLFES:** I really have no additional  
16          comments to add. We have provided our list of  
17          interviews and the records and notes from our  
18          interviews to SC&A. And we feel that if we  
19          need to conduct additional interviews with  
20          subject matter experts from the Nevada Test  
21          Site when we are trying to address some of the  
22          issues that we are discussing, we will do that  
23          at that time. I really, other than that,  
24          don't have anything else to add.

25          **MR. PRESLEY:** John?

1           **DR. MAURO:** I'm going to punt over to Arjun  
2 on this one.

3           **MR. PRESLEY:** Okay.

4           **DR. MAKHIJANI:** Mr. Presley, if I might  
5 throw a couple of clarifications. The  
6 materials you're referring to Mark are on the  
7 O drive, right? There are one, two, three,  
8 four, five, six, seven, eight, eight different  
9 documents on the O drive documenting your  
10 interviews, and who you talked to, and when  
11 and so on. That's what you're referring to,  
12 right?

13           **MR. PRESLEY:** That plus you all were  
14 waiting, if I remember correctly, I don't have  
15 my other paperwork in front of me, but you all  
16 were waiting on some paperwork to be  
17 declassified so you could comment on this as I  
18 understand. That was back six, eight months  
19 ago?

20           **MR. ROLFES:** Correct, Bob, we received an  
21 indication that the materials were  
22 unclassified, and we distributed those at that  
23 time.

24           **DR. MAKHIJANI:** Now, just shake my memory.  
25 I've been so preoccupied with Rocky Flats.

1                   What was -- did the declassified materials  
2 refer to?

3                   **MR. ROLFES:** They were not declassified.  
4 They were determined to be unclassified.

5                   **DR. MAKHIJANI:** Yeah, what did the  
6 unclassified materials refer to?

7                   **MR. ROLFES:** The unclassified materials were  
8 worker interview notes from subject matter  
9 experts at the Nevada Test Site.

10                  **DR. MAKHIJANI:** And these are not on the O  
11 drive? These are additional to what's on the  
12 O drive?

13                  **MR. ROLFES:** No, that is incorrect. These  
14 were distributed. I don't have my computer in  
15 front of me, but these were distributed a  
16 couple of months back. I would have to check  
17 on my computer to determine what date I sent  
18 those out.

19                  **DR. MAKHIJANI:** I'm just asking a sort of  
20 convenient question, so excuse me. I'm just  
21 asking whether all of the interview materials  
22 are now on the O drive so that --

23                  **MR. ROLFES:** Once, again, I'm not in front  
24 of my computer so I wouldn't be able to verify  
25 that at this time. So if they're not there

1                   though I will make sure that they are.

2                   **DR. MAKHIJANI:** Yeah, could you send me an  
3 e-mail about that? And because I only see two  
4 places where there's any mention of Jay Brady,  
5 and you said you documented five hours of  
6 interviews with him. And I just want to make  
7 sure that before I say anything that those are  
8 the only two places that there's some  
9 documentation. I may be wrong about that.

10                  **MR. ROLFES:** Let's see, Gene Rollins, are  
11 you there?

12                  **MR. ROLLINS:** Yes.

13                  **MR. ROLFES:** Do you recall when we received  
14 the interview notes? I am looking through --  
15 hang on just a second. I'm looking through  
16 some of my old notes here. Our old notes  
17 indicate that we compiled a log of interviews  
18 with site personnel including information from  
19 site visits, phone conversations and e-mail  
20 correspondence.

21                               The package was reviewed by the NTS  
22 derivative classifier. It was verified  
23 unclassified and passed back to us on 9/25/06.  
24 And it was shortly thereafter that I e-mailed  
25 that out to SC&A and the working group

1 members. I can re-send that e-mail if you  
2 would like, and I will make sure that those  
3 notes are, in fact, on the O drive as well.

4 **MS. MUNN:** I vaguely remember your, I think  
5 I saw a half dozen or so interviews that you  
6 sent out as I recall. I thought it was now a  
7 moot point, but I guess it's not.

8 **MR. PRESLEY:** Well, that's what I thought.  
9 I thought it was a moot point.

10 **MS. MUNN:** Let's see if I can find them. It  
11 was a straight message I do believe, and my  
12 memory is it's been a month or so ago.

13 **MR. PRESLEY:** This is Bob Presley. I  
14 remember when these things, I thought we had  
15 whipped this one because I remember that when  
16 Mark sent something out that said these things  
17 had been reviewed and that they were sending  
18 them on, whether it be on the O drive or hard  
19 copy, because we've got on here that the  
20 working group to review for completeness.

21 **MR. CLAWSON:** Bob, this is Brad. If my mind  
22 hasn't slipped a cog or whatever, the comment  
23 that I remember was that they had been  
24 declassified and that we were going to have  
25 the opportunity to be able to review or

1                   whatever like that. And that was the last  
2                   that I heard about it. I don't think that I -  
3                   -

4                   **MR. PRESLEY:** Yeah, we haven't received  
5                   anything back from SC&A on it.

6                   **MR. CLAWSON:** Right.

7                   **DR. MAKHIJANI:** Right, no, Mr. Presley, we  
8                   have not prepared anything on it. It's just  
9                   that I in my review was not able to find  
10                  documentation of this five hours of  
11                  interviews. And the Jay Brady thing is kind  
12                  of important because he has died since NIOSH  
13                  interviewed him and since I interviewed him.

14                  And he was there from '51 to 1990, and  
15                  so a lot of his observations are very  
16                  important because he was the principal health  
17                  physicist. And so I was just looking for this  
18                  where it says documented almost five hours of  
19                  discussion. I didn't find any more substance  
20                  than what was given to us during the site  
21                  profile review which was really just one point  
22                  about rads, rems and roentgens which was  
23                  during a telephone call documenting them and  
24                  the date of conversation.

25                  **MR. PRESLEY:** Well, the only thing that I

1 know that we can do this then is to mark this  
2 awaiting SC&A's review.

3 **DR. MAKHIJANI:** Well, I don't know what  
4 review we can do if we don't have the  
5 documentation of this five hours, and I, it  
6 may be my fault, Mr. Presley, that I've not --  
7 were sent to me, but I'm not aware that  
8 there's anything more than what I'm looking  
9 at.

10 **MR. PRESLEY:** What we can do is ask that  
11 Mark re-issue this and get it to you as soon  
12 as possible.

13 **DR. MAKHIJANI:** Thank you.

14 **MR. PRESLEY:** And that you all review it,  
15 and when you sit down with SC&A to talk about  
16 Response 5, the white paper, that you all also  
17 review your comments with SC&A. And then SC&A  
18 can get back to the working group with the  
19 findings.

20 **DR. MAKHIJANI:** Thank you. Thank you, Mr.  
21 Presley, we will do that.

22 **DR. MAURO:** Mark, this is John Mauro. Could  
23 we just itemize that action items? I know  
24 I've written down two so far. There's the  
25 resuspension factor, of course, report. And

1 now we have the second one dealing with the  
2 Brady interview. Is there anything else where  
3 we have an action item that I did not jot  
4 down?

5 **MR. PRESLEY:** Not from today. Those are the  
6 only two things that I see.

7 How about it other Board members?

8 **MS. MUNN:** This is Wanda. I just request of  
9 Mark that when he sends those interviews,  
10 including the Brady interview, if he'd re-send  
11 those notes to the working group it would be  
12 helpful for me. Apparently, I have done  
13 something foolish and filed it under some name  
14 that is totally incomprehensible.

15 **MR. PRESLEY:** Mark, can you re-do that, sir?

16 **MR. ROLFES:** Certainly, I will be happy to  
17 send the e-mail to everyone involved.

18 **MS. MUNN:** My apologies, I know I read them.  
19 They're just not there. They're not where I  
20 want them to be.

21 **DR. ROESSLER:** Bob, this is Gen. I just  
22 want to clarify that SC&A is not only going to  
23 be looking at the NIOSH's five hours with Mr.  
24 Brady, but also the interviews with the other  
25 site experts that they have listed here.

1                   **MR. PRESLEY:** That's correct. As I  
2 understand it, there was eight of these?

3                   **MS. MUNN:** There were more than that listed  
4 I thought. They talked to a bunch of people.

5                   **DR. MAKHIJANI:** Yeah, there are eight sets  
6 of documents. Each one of them has a number  
7 of --

8                   **MR. PRESLEY:** Okay, that was the number that  
9 stuck in my mind, that there were eight of --

10                  **DR. MAKHIJANI:** Eight sets and each one of  
11 them contained sort of a nog of many different  
12 conversations and some documentation.

13                  **RECAP OF RESPONSES 1 THROUGH 25**

14                  **MR. PRESLEY:** Okay. Now this completes our  
15 response, our responses back on all 25  
16 questions. Has anybody got anything that they  
17 would like to go back and let's review on  
18 anything from Comment 1 through 25?

19                  **MS. MUNN:** You should have asked me that in  
20 advance.

21                  **MR. PRESLEY:** I went through this thing  
22 after Mark sent it the other night, and I am  
23 happy with what we've got on here. I think  
24 that we do need to do what Brad has asked,  
25 that we go through and mark the complex-wide

1 issues. And then come up with a, some type of  
2 a table that says these are the issues that  
3 will be coming forth in the TBD and that the  
4 working group was going to look at those. And  
5 then, of course, we've got the two issues that  
6 SC&A and NIOSH have to close on.

7 **MR. CLAWSON:** Bob, this is Brad Clawson. I  
8 just, in Comment 22 where we're talking about  
9 the neutron dose, were we only looking at the  
10 atmospheric testing or was there tunneling  
11 involved, too, or is that a separate issue?

12 **MR. PRESLEY:** On that right there, 22 --

13 **MS. MUNN:** The question is specifically  
14 atmospheric testing.

15 **MR. PRESLEY:** Yeah, because, now is this not  
16 going to be taken up in the petition that's  
17 coming up or that we've already voted on?

18 **MR. CLAWSON:** Okay, so this might be an SEC  
19 issue, the tunneling?

20 **MR. PRESLEY:** What do you think, Mark?

21 **MR. ROLFES:** Let's see, this Comment 22 was  
22 in light of the atmospheric testing and the  
23 concern about neutron dose data.

24 **MS. MUNN:** It wasn't intended to be broader  
25 than that I don't think. This was very

1 specific. This was based on their findings,  
2 on the SC&A finding.

3 **MR. PRESLEY:** It had nothing to do with  
4 anything other than atmospheric testing.

5 **MS. MUNN:** No, no, that's correct.

6 **MR. CLAWSON:** Okay, I just wanted to make  
7 sure. Thank you.

8 **MR. PRESLEY:** Anybody else have anything?

9 **MS. MUNN:** I'm going to make my airplane?

10 **MR. PRESLEY:** I hope.

11 Lew?

12 **DR. WADE:** Thank you very much.

13 **MR. PRESLEY:** Do you have anything? I want  
14 to make sure that Mark doesn't have anything  
15 or that John doesn't have anything before we  
16 quit. But are you, as the designated  
17 government official, happy with what's gone on  
18 here?

19 **DR. WADE:** Yes.

20 **MR. PRESLEY:** Okay, that's what I wanted to  
21 make sure that we have fulfilled our task.

22 **DR. WADE:** I'm generally a happy person.

23 **MR. PRESLEY:** Mark, is there anything that  
24 we need to do to help you? I know we've  
25 probably made your day and put a little more

1 on you today.

2 And also, John, do you have anything?

3 **DR. MAURO:** No, I believe we have our  
4 marching orders, and I understand what they  
5 are.

6 **MR. PRESLEY:** Mark, how about you? Anything  
7 we can do?

8 **MR. ROLFES:** No, Bob, I think you guys have  
9 done a wonderful job.

10 **MR. PRESLEY:** I appreciate you getting this  
11 out, and I'll get with you probably the first  
12 of next week, and we'll figure out how to mark  
13 these other things and then get this out.

14 Do we have anything else? Do we have  
15 anything from Legal? We have any problems or  
16 anything, Liz?

17 **MS. HOWELL:** This is Emily..

18 **MR. PRESLEY:** Emily, no problem?

19 **MS. HOWELL:** No.

20 **MS. HOMOKI-TITUS:** This is Liz. I don't  
21 think so.

22 **MR. PRESLEY:** Any of the other Board  
23 members, working group members have anything?

24 **MS. MUNN:** No.

25 **MR. CLAWSON:** This is Brad, no, not at this

1 time.

2 **MR. PRESLEY:** We'll get this out then  
3 sometime the first of next week prior to our  
4 leaving for Denver, and then all we can do is  
5 wait until SC&A and NIOSH come back on the  
6 other two issues.

7 Anything else?

8 (no response)

9 **MR. PRESLEY:** Thank you very much.

10 (Whereupon, the working group meeting  
11 concluded at 12:30 p.m.)

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 April 18, 2007; 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 17th day of June, 2007.

---

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