

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

ROCKY FLATS

The verbatim transcript of the Working
Group Meeting of the Advisory Board on Radiation and
Worker Health held in Erlanger, Kentucky on
November 6, 2006.

C O N T E N T S
November 6, 2006

WELCOME AND OPENING COMMENTS DR. LEWIS WADE, DFO	6
BACKGROUND AND PRIVACY ACT ISSUES	14
COMPLETENESS OF DOSIMETRY RECORDS	63
OTHER RADIONUCLIDES	181
D AND D	240
LOGBOOK ANALYSIS	275
1969 DATA GAP	299
NEUTRON DOSIMETRY ISSUES	333
SUPER S	343
SAFETY CONCERNS	347
MATRIX	358
COURT REPORTER'S CERTIFICATE	387

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 MEMBERSEXECUTIVE SECRETARY

WADE, Lewis, Ph.D.

Senior Science Advisor

National Institute for Occupational Safety and Health

Centers for Disease Control and Prevention

Washington, DC

MEMBERSHIP

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

IDENTIFIED PARTICIPANTS

BARKER, KAY, ANWAG
BARRIE, TERRIE, ANWAG
BEHLING, HANS, SC&A
BEHLING, KATHY, SC&A
BROEHM, JASON, CDC
BUCHANAN, RON, SC&A
CHANG, CHIA-CHIA, NIOSH
CHEW, MEL, ORAU
ELLIOTT, LARRY, NIOSH
FALK, ROGER, ORAU
FITZGERALD, JOE, SC&A
FIX, JACK, ORAU
HOFF, JENNIFER, ORAU
HOWELL, EMILY, HHS
JESSEN, KARIN, ORAU
KOTSCH, JEFF, DOL
LABONE, TOM, ORAU
LANGSTED, JIM, ORAU
LITTLE, CRAIG, ORAU
LOPEZ, TERESA, ORAU
MAKHIJANI, ARJUN, SC&A
MAURO, JOHN, SC&A
MEYER, BOB, NIOSH
MINKS, ERIN, SEN. SALAZAR
NETON, JIM, NIOSH
POTTER, GENE, ORAU
RICH, BRYCE, NIOSH
ROBERTSON-DEMERS, KATHY, SC&A
ROBINSON, AL, ORAU
SHARFI, MUTTY, NIOSH
SHIELDS, LASHAWN, NIOSH
THOMAS, ELYSE, ORAU
ULSH, BRANT, NIOSH

P R O C E E D I N G S

(10:00 a.m.)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22WELCOME AND OPENING COMMENTSDR. LEWIS WADE, DFO

DR. WADE: Good morning out there, this is Lew Wade. The working group is just starting to get itself together, so it won't be a moment or so before we begin. Bear with us. We're going to begin our deliberations. This is Lew Wade and I have the pleasure of serving as the Designated Federal Official for the Advisory Board, and this is a working group meeting of the Advisory Board. This working group really is looking at issues surrounding the Rocky Flats site, both site profile and SEC issues, although it's been, you know, sharpening its focus on SEC issues because of the time criticality of such issues. But this working group does have broad responsibilities for Rocky Flats as it goes to site profile. Let me ask if there are any Board members on the phone. I know Mike Gibson, who's a member of the working group, is on the phone. Are there any other Board members on the phone?

1 (No responses)

2 Any other members of the Advisory Board?

3 (No responses)

4 Okay. It's important I do that to establish
5 the fact that we don't have a quorum of the
6 Board. This is a working group very ably
7 chaired by Mark Griffon. Its members are Mike
8 Gibson, who's on the phone, and then in the
9 room with us are Wanda and Robert. So I guess
10 we would begin by introducing people around the
11 table here, then we would introduce people on
12 the phone. I would ask that when we do get to
13 the phone that NIOSH people, other federal
14 employees who are on the call as part of their
15 work, identify themselves; representatives of
16 SC&A, representatives of Congressional
17 delegations or representatives or actual
18 petitioners or their representatives.
19 But let's start around the table. We'll do the
20 introductions and then we'll go back and do the
21 conflict of interest discussions for the NIOSH
22 team participants and the SC&A team
23 participants. Let's do the introductions, then
24 we'll go back and do that as a -- as a separate
25 item.

1 Again, this is Lew Wade and I work for NIOSH
2 and also serve the Advisory Board.

3 **MS. JESSEN:** Karin Jessen, ORAU team.

4 **DR. ULSH:** I'm Brant Ulsh with NIOSH.

5 **MR. MEYER:** I'm Bob Meyer with NIOSH.

6 **MR. RICH:** I'm Bryce Rich, (unintelligible).

7 **MS. MUNN:** Wanda Munn, the Board.

8 **MR. PRESLEY:** Robert Presley, the Board.

9 **DR. NETON:** Jim Neton with NIOSH.

10 **DR. MAURO:** John Mauro, SC&A.

11 **MR. FITZGERALD:** Joe Fitzgerald with the SC&A
12 team.

13 **DR. MAKHIJANI:** Arjun Makhijani, SC&A.

14 **MR. CHEW:** Mel Chew with the ORAU team.

15 **MS. HOWELL:** Emily Howell, HHS.

16 **MR. GRIFFON:** Mark Griffon with the Advisory
17 Board.

18 **DR. HOFF:** Jennifer Hoff with the ORAU team.

19 **DR. WADE:** Okay, let's go out to Envision Land
20 and let's start with members of the SC&A team
21 that are on the phone with us.

22 **DR. BEHLING:** Hans and Kathy Behling.

23 **DR. WADE:** Good morning, welcome.

24 **DR. BEHLING:** Good morning.

25 **MS. ROBERTSON-DEMERS:** This is Kathy Robertson-

1 Demers.

2 **MR. BUCHANAN:** Ron Buchanan, SC&A.

3 **DR. WADE:** Welcome to both of you. Other SC&A
4 team members?

5 (No responses)

6 Okay, let's look at NIOSH/ORAU extended family
7 sort of team members.

8 **MR. LITTLE:** Craig Little.

9 **MR. ROBINSON:** Al Robinson, ORAU.

10 **MR. FALK:** All right. This is -- this is Roger
11 Falk, ORAU.

12 **MR. LANGSTED:** Jim Langsted with the ORAU team.

13 **MS. LOPEZ:** Teresa Lopez, ORAU team.

14 **MS. THOMAS:** Elyse Thomas, ORAU team.

15 **MR. FIX:** Jack Fix, ORAU team.

16 **MR. POTTER:** Gene Potter, ORAU team.

17 **DR. WADE:** Any other members of the ORAU/NIOSH
18 extended family?

19 **MR. LABONE:** This is Tom Labone, ORAU team.

20 **MS. CHANG:** Chia Chia Chang, NIOSH Director's
21 Office.

22 **DR. WADE:** Okay.

23 **MR. BROEHM:** Jason Broehm, CDC Washington
24 office.

25 **DR. WADE:** Other federal employees who are here

1 as part of their employment?

2 **MS. SHIELDS:** LaShawn Shields, NIOSH.

3 **DR. WADE:** Welcome.

4 **MR. KOTSCH:** Jeff Kotsch, Department of Labor.

5 **DR. WADE:** Welcome, Jeff. Anyone else, federal
6 employees?

7 (No responses)

8 What about representatives of the petitioners,
9 the petitioners themselves or members of an
10 interested Congressional delegation?

11 **MS. MINKS:** Erin Minks here from Senator
12 Salazar's office.

13 **DR. WADE:** Welcome.

14 **MS. BARRIE:** This is Terrie Barrie with ANWAG,
15 and also Kay Barker will be on soon -- later
16 this morning.

17 **DR. WADE:** Thank you very much for joining us.
18 We're always better when you're with us.
19 Anyone else?

20 (No responses)

21 We have one new member in the room.

22 **MR. SHARFI:** Mutty Sharfi with the ORAU team.

23 **DR. WADE:** Okay. Now before I turn over to --
24 to Mark, I would ask that maybe, John, you
25 could work us through your team in terms of

1 conflicts, however you would want to do that.

2 **DR. MAURO:** Perhaps the best way is the members
3 sitting around the table and on the phone do
4 not have a conflict with regard to Rocky. Bob
5 Bistline is part of our team but he is
6 apparently not on the line here today. He
7 would have been the -- the individual that
8 would have a conflict. I believe that's
9 correct, if I -- that's...

10 **DR. WADE:** Hearing no objection. And then for
11 NIOSH, Jim, do you want to --

12 **DR. NETON:** I think Brant would be better.

13 **DR. WADE:** -- or Brant, walk us through.

14 **DR. ULSH:** Okay. Actually I think what I'd
15 like to do is maybe just go through the list
16 again of people who introduced themselves and
17 identify whether or not they have a con-- a
18 conflict, so why don't we start with Karin.

19 **MS. JESSEN:** Karin, no personal conflicts.

20 **MR. MEYER:** Bob Meyer with the ORAU team, no
21 conflicts.

22 **MR. RICH:** Bryce Rich, no conflicts.

23 **DR. ULSH:** Mel?

24 **MR. CHEW:** Mel Chew, no conflict.

25 **DR. ULSH:** All right, how about -- let's start

1 -- maybe Jim Langsted?

2 **MR. LANGSTED:** This is Jim Langsted. I worked
3 at Rocky Flats in the dosimetry organization
4 for several years.

5 **DR. ULSH:** Okay, Gene Potter?

6 **MR. POTTER:** Gene Potter, I also worked at
7 Rocky Flats. I'm conflicted.

8 **DR. ULSH:** Let's see, Teresa Lopez I think is
9 out there.

10 **MS. LOPEZ:** No conflicts.

11 **DR. ULSH:** Roger?

12 **MR. FALK:** Yes, I worked at Rocky Flats and I
13 have conflicts.

14 **DR. ULSH:** Is there anyone else that I've
15 missed?

16 **MR. LITTLE:** Craig Little, I have no conflicts.

17 **DR. ULSH:** Okay. Thanks, Craig.

18 **MR. FIX:** Jack Fix, I don't have any conflicts.

19 **MR. ROBINSON:** Al Robinson, no conflicts.

20 **MS. THOMAS:** Elyse Thomas, I'm not personally
21 conflicted. ORAU has a corporate conflict.

22 **DR. ULSH:** Anybody else on the NIOSH/ORAU team?

23 **MR. LABONE:** Tom Labone, I have no conflicts.

24 **MR. SHARFI:** Mutty Sharfi, no conflicts.

25 **DR. HOFF:** Jennifer Hoff, no personal

1 conflicts.

2 **DR. WADE:** Okay. In terms of members of the
3 working group --

4 **MR. GRIFFON:** Mark Griffon, no conflicts.

5 **DR. WADE:** Mike?

6 **MR. GIBSON:** No conflicts, Lew.

7 **DR. WADE:** Wanda?

8 **MS. MUNN:** No conflicts.

9 **DR. WADE:** And Robert?

10 **MR. PRESLEY:** No conflicts.

11 **DR. WADE:** Okay. I mean the only other thing I
12 would say before I turn it over to you is that
13 I'd ask you all to practice good phone
14 etiquette. You know, keep the phone on mute,
15 if possible -- except when you're speaking,
16 obviously. And you know, obviously let us know
17 if you can't hear or you have any difficulties
18 at all because we want to make this as -- not
19 only as productive a working group as possible,
20 but also as transparent a working group meeting
21 as possible. This is obviously a topic that
22 has a great deal of interest surrounding it
23 and, to make progress, I turn it over to Mark.

24 **MR. GRIFFON:** All right. I think I -- I put
25 together a little draft agenda just this

1 morning of main topics to hit. I also did, in
2 preparation for this meeting, put out a revised
3 matrix. So at -- at -- at least at the very
4 end of the meeting I think we'll -- we'll try
5 to step through quickly and make sure we didn't
6 miss any -- any actions and --

7 **DR. WADE:** Is there anyone who would like a
8 copy of that matrix? I can have it worked on
9 while we're meeting. This is... Okay, thank
10 you.

11 BACKGROUND AND PRIVACY ACT ISSUES

12 **MR. GRIFFON:** Okay. But as -- in terms of just
13 a draft agenda to work from, I -- I thought
14 let's -- let's front-load some of the -- the
15 biggest items, most important items that we
16 have remaining. And one is -- is -- number one
17 would be completeness of dosimetry records, and
18 this is a product that SC&A put out and then
19 NIOSH I think -- middle of last week or last
20 week -- gave a response to, a reply to.

21 Second topic is other radionuclides, which I
22 think has sort of gone down the same path. We
23 had a response, then a reply.

24 Third topic is this question of D&D, dosimetry
25 for the D&D work -- work -- period for the

1 workers.

2 Fourth topic is the log books, and mainly what
3 I'm referencing there is the analysis provided
4 by NIOSH in looking at the log book data versus
5 the individual radiation records or individual
6 files.

7 The fifth topic is this question of what we've
8 been calling the '69 data gap.

9 Sixth topic is the -- sort of a catch-all
10 related to the neutron dosimetry stuff. I
11 think we have four or five mini-action items in
12 there related to neutrons or N/P ratios, et
13 cetera.

14 Seventh topic is super S, and I think -- we may
15 have a -- a little new information there, but
16 you know, as you can see, the more serious
17 topics I've tried to front-load when we're all
18 fresher.

19 Eighth topic is the safety concerns. And a --
20 and again, I think we had a lengthy response of
21 all the safety concerns that -- documents that
22 were pulled.

23 And then finally, again, at the end I think I -
24 - we'll walk through the matrix quickly and try
25 to check that we haven't missed anything in our

1 matrix. This -- this matrix -- I don't think I
2 had refreshed it since the July 27th meeting,
3 so there's been a couple of meetings in between
4 where I hadn't gone back to this, so I figured
5 it was time to resurrect it and kind of update
6 it and --

7 **MS. MUNN:** Thank you, Mark.

8 **MR. GRIFFON:** Yeah, we tend to forget where
9 we've been.

10 **MS. MUNN:** We sure do.

11 **MR. GRIFFON:** And actually -- actually, on that
12 note, I think it's -- before we get into the --
13 going into the completeness topic, I -- I
14 thought it was -- it was worth it for me,
15 anyway, to sort of step back and -- and look at
16 -- at where we've been with this data
17 reliability question. And the -- the -- you
18 know, it -- my recollection in looking at some
19 transcripts and some previous meetings, I --
20 I've sort of tried to put together an account
21 in my mind of how -- how we've gotten to where
22 we've gotten. And we -- we started off, if I
23 recall accurately -- there was a question of
24 the -- on the coworker models, and the coworker
25 models relied on CER data, the CER data and --

1 and I think my -- my instinct, probably coming
2 off the Y-12 meetings, was, you know, well,
3 what's the pedigree here. You know, did you
4 verify that this wasn't a truncated epi sort of
5 database or was it, you know -- is it reliable
6 for this kind of work. And the response was to
7 do an analysis of CER versus the HIS-20
8 database, so I was sort of in a position of
9 believing that HIS-20 was the gold standard of
10 -- of data. The analysis indicated that
11 although there were differences, at the end of
12 the day the intakes estimated from either model
13 would have been very close to the same. And I
14 don't think there's much dispute -- I don't
15 know, I'm -- I don't want to put words in
16 SC&A's mouth, but I don't think there's much
17 dispute on that.

18 The -- then the question became well, the
19 question of HIS-20 versus the raw records, and
20 I think we -- we pursued that to see if --
21 well, you know, let's again look at the
22 pedigree and make sure HIS-20 is reliable. And
23 there was an analysis -- I think this was the
24 Craig Little analysis, is that -- is that the
25 right -- I sometimes get this wrong, but I

1 think it was the Craig Little report that
2 looked at the raw radiation files, sampled from
3 those and compared to the values in the CER
4 dat-- or in the HIS-20 database, I believe.
5 And the conclusion was -- I think that -- that
6 there was a high degree of -- of agreement. It
7 was 96 percent agreement, or something to that
8 effect.

9 **DR. ULSH:** 98, yeah, something like that.

10 **MR. GRIFFON:** Yeah, 98. So then -- and behind
11 all this also was the sort of indication all
12 along that -- that the coworker models --
13 unlike Y-12, the coworker models here for Rocky
14 Flats were not going to be used for most of the
15 cases because a high degree of individuals had
16 their own radiation records, so -- then --
17 nonetheless, we kept pursuing this. And part
18 of the reason for -- at least in my mind, part
19 of the reason for comparing to the HIS-20
20 against the raw records was it was a heck of a
21 lot easier to compare log book information to a
22 database than log book information to
23 individual radiation files. And I thought if
24 this HIS-20 is in fact the gold standard, we
25 can save ourselves a lot of digging out of

1 individual files to -- to sort of corroborate
2 the reliability of -- of the data we're using.
3 So we -- we continued to do this sampling of
4 the log books compared to the databases, and I
5 think the latest reports -- well, my personal
6 findings from doing some of this was that,
7 number one, I wasn't finding a lot of in vivo
8 measurements that just weren't there, and I
9 didn't even -- I sort of truncated my review
10 and just e-- I think I had e-mail
11 correspondence with NIOSH and said, you know,
12 is there a separate database for the in vivo
13 'cause I'm not finding a lot of these and I --
14 you know, I think some -- you know, maybe I'm
15 looking at something wrong, but this isn't
16 working. The response basically was I think
17 that -- that the in vivo especially had -- had
18 already been understood to have some problems
19 with some of the data, especially in the
20 earlier time periods, that it was -- it was
21 incomplete and NIOSH and ORAU were well aware
22 of that and that, you know, I wasn't proving
23 anything that they didn't know already. And
24 also -- a key part, I think, is that they don't
25 use that in any of the dose reconstruction.

1 They don't rely on in vivo or -- in any of it,
2 am I overstating that?

3 **DR. ULSH:** A little bit. We don't rely on --

4 **MR. GRIFFON:** For the most part -- for the most
5 part, they don't rely on the in vivo, it's more
6 on the urinalysis records.

7 Anyway, then -- then to look at the bioassay
8 records, again, log books looking at bioassay
9 records, found some -- some problems,
10 differences, with HIS-20; found some elevated
11 values in HIS-- or didn't find some elevated
12 values in HIS-20. Then we said well, we look
13 at the CER database and actually some of these
14 same elevated values are in there, so it -- it
15 became this confusion of, you know, what --
16 what's going on. We thought -- I thought,
17 anyway -- that HIS-20 was kind of a pretty
18 robust and -- and gold standard database. And
19 I think the last product was -- Donna Kragle*,
20 did she author that -- or -- or --

21 **DR. ULSH:** Phil Wallace.

22 **MR. GRIFFON:** Okay. Phil Wallace of the
23 NIOSH/ORAU team produced a document looking at
24 CEDR versus HIS-20, and I think concluded that
25 there were -- and I forget the -- the way this

1 turns, but in -- in the earlier years one of
2 the databases had more data and more
3 individuals, and then in like mid-'70s or early
4 '70s it switched and the other database had
5 more data and more individuals, so -- and it
6 wasn't just a few more people, it was -- it was
7 large differences of numbers, if I recall, at
8 least in several of the years.

9 So I think at the -- the -- and I know -- I was
10 trying to pull this document up before the
11 meeting began and I don't have a hard copy of
12 it, but basically I think party of your
13 conclusion there was that this -- this would be
14 more of a problem if we were relying on
15 coworker models. We -- we admit now that there
16 is more -- more extensive problems in HIS-20 --
17 or maybe not admit now, but -- but there are
18 some problems in HIS-20 and -- and -- but at
19 the end of the day we've got the individual
20 radiation files. Is that -- is that accurate,
21 Brant?

22 **DR. ULSH:** That's a pretty close summary, Mark.

23 **MR. GRIFFON:** Okay.

24 **DR. ULSH:** We did discuss in the evaluation
25 report some of the known limitations of the

1 HIS-20 database, and the comparison between
2 CEDR and HIS-20 -- we started with, as you
3 mentioned, evaluating the intake that you would
4 calculate using either one, and we found
5 minimal difference. However, you noticed,
6 Mark, and were curious about why during some
7 years, in the early years in particular, there
8 were more records in CEDR than in HIS-20. That
9 seemed counter-intuitive. I think that's why
10 we went back and took a look -- Donna Kragle
11 and Phil Wallace did their report.
12 And in response to that question, Donna and
13 Phil wrote up their report and we know that --
14 this is one of the other limitations of HIS-20
15 that we talked about in the ER, the evaluation
16 report, is that individuals who worked at Rocky
17 Flats prior to I think 1972 -- don't take that
18 particular year to the bank; sometime in the
19 early '70s. If they worked at Rocky Flats
20 let's say prior to 1972 and they terminated
21 employment prior to that date, and they were
22 not drawing benefits, those records were not
23 captured in the HIS-20 database. We know that.
24 We talked about that in the -- in the
25 evaluation report. And that accounts for those

1 early year-- oh, now there's a little bit more
2 to the story before I move on.

3 Some of those people who were not captured in
4 HIS-20 were later reloaded into HIS-20 if they
5 were part of the long-term medical monitoring
6 program. But not all of them. So we know that
7 in the early years there are some people who
8 are not in the HIS-20 database, and that is
9 consistent with what we see in terms of in the
10 early years having more records in CEDR than in
11 HIS-20.

12 Now of course the obvious question there is
13 well, what does that do to -- in terms of the
14 reliability of the CEDR or HIS-20 data for
15 coworker models. And the particular concern
16 would be if that introduced some kind of a
17 bias, in particular a low bias. That would be
18 very -- of very great concern. But due to the
19 nature of the way these people were excluded
20 from the database, it -- it was essentially at
21 random. We don't see any evidence of the -- of
22 there being a bias. We don't see any
23 difference between CEDR and HIS-20 in terms of
24 the intakes that you calculate. So we don't
25 see evidence of a bias there. And in fact -- I

1 mean just thinking hypothetically, I mean there
2 might be even a little high bias because of the
3 people who were later reloaded into HIS-20.
4 Those are the people who were captured for
5 long-term medical monitoring. They tended to
6 be the people who had known and documented
7 intakes. So if there's any evi-- if there's
8 any bias at all, which we don't see any
9 evidence of, it would probably be a little bit
10 high. So we don't think that that would cause
11 a problem in terms of using the CEDR database
12 or the HIS-20 database for coworker models.
13 Now, that's not to say, though, that it
14 wouldn't be a problem in dose reconstruction.
15 Obviously that would be a concern for dose
16 reconstruction. But fortunately we rely on the
17 hard copy individual radiation records for dose
18 reconstruction, and so we haven't seen that
19 kind of a problem with those.
20 So it -- it's important not only to think about
21 the limitations of the particular datasets, but
22 the uses that we make of them. And you're
23 right about -- in terms of the in vivo records.
24 Those are not really all that reliable in HIS-
25 20 because they just didn't make an effort --

1 they were primarily concerned with the
2 urinalysis data. So you're right, if you're
3 interested in in vivo data, the best place to
4 go is the worker's hard copy rad file.

5 **MR. GRIFFON:** Right, so -- so for whatever -- I
6 mean I -- I just think it's worthwhile stepping
7 back and to see how we've gotten to where we've
8 gotten because, you know, I know we've spent a
9 lot of time on this one topic. But sometimes
10 we thought we were going to get answers by
11 doing something a certain way that then, once
12 we got into that, we realized the answer was,
13 you know, no, you real-- and -- and the -- the
14 big specific here is that, you know, we -- we
15 thought that, as a time saver really, you know,
16 this log book comparison -- all I was looking
17 for is this test of reliability and, you know,
18 don't dig up all the individual radiation
19 files. That's very time-consuming -- it's more
20 time-consuming. It takes -- takes work. Just
21 pull it up on the database and -- and check
22 them, you know, randomly sample and check them
23 and you're done. It's an -- couple of hour
24 activity, maybe, so -- but -- but now, you
25 know, I think as we've evolved through this

1 we've realized that in fact to test the
2 reliability of this data we're back to those
3 individual radiation files. So that's --
4 that's -- that's what I wanted to -- to point
5 out -- that's why I wanted to step through this
6 process, especially for people that are -- not
7 been here for all the meetings.

8 And part of why this task that -- that SC&A --
9 now -- get into item one of my agenda now --
10 the task on completeness. These -- for the
11 last couple of meetings this task was -- was
12 mentioned as in draft and they weren't -- they
13 -- they didn't have it ready to offer to the
14 workgroup or to NIOSH and I -- I wasn't sure
15 exactly how many cases were being sampled. I
16 think they ended up with 12 -- is that -- 12.
17 But the -- the -- you know, the main reason for
18 this was -- was that we were realizing that you
19 can't really check these datapoints against the
20 databases. That wasn't going to prove anything
21 'cause, you know, we find them not there and
22 the answer was well, yeah, we know there's a
23 proble-- you know, we know there's
24 incompleteness in the database, so it -- it was
25 much more valuable to look and say okay, if in

1 fact, you know, the dose reconstruction's going
2 to rely on the individual radiation files to a
3 large extent, then we just need to make sure
4 that those individual radiation files are
5 complete -- they have enough data and the data
6 is -- you know, can be cross-walked with log
7 books, also, but it's also complete enough to
8 be able to do a dose reconstruction. And
9 that's where SCA took on this task and I think,
10 as I said, they've produced a report and in the
11 meantime -- or since the report was released --
12 I'm not sure wh-- was that a couple of weeks
13 ago, or three wee--

14 **DR. MAKHIJANI:** October 19th, I think. Joe --

15 **MR. FITZGERALD:** Yeah, it was about a week and
16 a half ago.

17 **MR. GRIFFON:** October 19th, and then -- and
18 then very recently we got a reply from NIOSH on
19 that same report. And I think -- I -- I had
20 asked SC&A prior to this meeting if they were -
21 - had enough time to sort of respond to NIOSH's
22 memo back, and -- and here's where -- there was
23 a little frustration the end of last week, but
24 we -- the workgroup, as well as SC&A, basically
25 got blocked off of the R drive, so we didn't

1 have access to claimant files so we couldn't
2 pull up some of these specifics that Brant --
3 Brant's replies had some very specifics. You
4 know, for instance, in some cases I think you
5 said that -- that SC&A probably -- must have
6 overlooked the data 'cause we found it; it was
7 there for certain individuals. And so they
8 were unable to go through this. I -- I checked
9 my access and the same -- same problem, we're
10 blocked out of these claims files now. I'm not
11 sure why that happened, but we're blocked out,
12 so we can't pull these individual radiation
13 files to review them. And I think this is a --
14 is a problem.

15 **DR. WADE:** I can -- I can speak to the issue of
16 why. Right now there are issues about Privacy
17 Act concerns surrounding the release of
18 information that was pulled from those files.
19 And until the attorneys and those involved in
20 the process have a chance to get their mind
21 around that, the appropriate action the
22 government decided to take was to just suspend
23 activity until all aspects of this could be
24 looked at and a path forward found that would
25 certainly provide the Board and the working

1 group with the information that they would
2 require to do their work.

3 So enough said on that. There are issues that
4 surround Privacy Act concerns.

5 **MS. MINKS:** This is Erin Minks from Senator
6 Salazar's office. If I'm hearing correctly
7 that NIOSH at this point in time decided they
8 had concerns timed at this point merits
9 suspending access of working group members to
10 these files, we recall specifically being
11 assured by Larry Elliott in a crowd of --
12 crowded room of people back in April during the
13 working group meeting or the Advisory Board
14 meeting in Denver that NIOSH would assure full
15 access to these files as necessary for the
16 working group to do their deliberations on the
17 data reliability issue. The Senator's staff
18 heard this. The entire Congressional
19 delegation staff heard this. And if there's a
20 Privacy Act assertion coming from the legal
21 department at NIOSH right now to suspend access
22 to these files, we would like to -- to get as
23 much information as possible about the
24 rationale behind this because the reality is
25 the Senator's patience is really wearing thin

1 right now related to this data reliability
2 concern which we are aware continues to be one
3 of the key issues with this. So I just wanted
4 to lay that out to the group that if this
5 continues to be a concern, the Senator's
6 patience is wearing very, very thin and we
7 don't really see how the working group could
8 deliberate continuously on the data reliability
9 issue, even on this call, without access to
10 those files.

11 **DR. WADE:** We understand the concern.

12 **MS. MINKS:** And that will be -- that'll be a
13 strong concern and we look forward to getting
14 some -- some clear communication from NIOSH
15 about the rationale behind that.

16 **MR. ELLIOTT:** This is Larry Elliott, and if I
17 might, I'd like to speak to this. SC&A -- and
18 I've talked to John Mauro about this; I did not
19 get ahold of you, Mark, on Friday afternoon as
20 I wanted to after several attempts -- but we
21 are not prohibiting access to these seven
22 specific files. I can accommodate that. Under
23 Task IV we have developed a process for
24 accessing claim information, and that's the
25 process that we should use in this regard. You

1 want to look at claim information and claimant
2 files, then we facilitate that access, as we do
3 under Task IV.

4 Unfortunately, that didn't happen in this
5 review that SC&A performed on these seven
6 cases, and so we need -- we just need to follow
7 this procedure that we have established in
8 order to make sure that we do not violate the
9 privacy of any of these individual claimants.
10 We are not prohibiting access to these seven
11 claims. We can share those claims with you,
12 under the purpose that you have for looking at
13 data reliability on Rocky Flats. We just
14 cannot have open access to all of the claimant
15 files. We have to facilitate your access in
16 that regard.

17 I hope that helps. I hope that explains --

18 **MR. GRIFFON:** Well, I -- just a couple of --
19 'cause, you know, this isn't Task IV that we're
20 operating under --

21 **MR. ELLIOTT:** I understand.

22 **MR. GRIFFON:** -- and I think -- I will say -- I
23 will say this, that I -- in this -- this task
24 for SC&A was to look at the completeness of the
25 radiation files within these claims files. And

1 to the extent their report went beyond looking
2 at the completeness of the data available, I
3 think that was beyond scope and not germane to
4 what we were -- what we were doing here. For
5 instance, I think there was some comments to --
6 that may have alluded to methods for a
7 particular DR that -- that a certain technique
8 was used to reconstruct the internal dose. I
9 didn't think that was germane to the task that
10 they -- that -- that was put forward by the
11 workgroup.

12 But to the extent that -- that we want to look
13 at these files for data completeness, I'm not
14 sure why we have to operate under such a
15 restricted policy as Task IV. I understand the
16 policy for Task IV, but --

17 **MR. ELLIOTT:** I'm not talking about scope of
18 work or task.

19 **MR. GRIFFON:** Yeah.

20 **MR. ELLIOTT:** I'm talking about the
21 requirements that we all have to meet --

22 **MR. GRIFFON:** Right.

23 **MR. ELLIOTT:** -- under the Privacy Act. And in
24 order to make sure that we maintain -- in
25 accordance with those requirements, we have

1 developed a procedure. We -- we don't -- it
2 was unbeknownst to me that you all had this
3 open access to a portal to the NOCTS claims
4 system. We've -- from the day one we've
5 always said for claims that contain this volume
6 and degree of information, we need -- all need
7 to have a purpose that's within our government
8 duties to go into those claims and look at
9 them. Okay?

10 **MR. GRIFFON:** Isn't -- isn't this our purpose
11 right here, to look --

12 **MR. ELLIOTT:** I'm not -- I'm not quibbling with
13 the purpose.

14 **MR. GRIFFON:** -- at the completeness and
15 reliability -- okay, okay.

16 **MR. ELLIOTT:** I'm not quibbling with the
17 purpose.

18 **MR. GRIFFON:** Right.

19 **MR. ELLIOTT:** I'm quibbling with the process.
20 The process that we've established under Task
21 IV should be applied to any purpose brought to
22 looking at individual claims. Okay? And that
23 purpose says we -- that we have established,
24 all within our government roles and duties here
25 --

1 **MR. GRIFFON:** Right.

2 **MR. ELLIOTT:** -- but we cannot just go -- and
3 we need to facilitate that access. Why?
4 Because we all agreed that the Board and its --
5 and its contractor looks at adjudicated claims.
6 So we want to make sure that that's what we're
7 examining here. Okay?

8 **MR. GRIFFON:** All right, but that -- that was
9 for dose reconstruction review purposes, I
10 believe.

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

12 **MR. GRIFFON:** That's what I'm asking about,
13 Larry, is that if we're just -- and I -- and I
14 will say that, you know, I think the report
15 went a little beyond the scope of just looking
16 at completeness of data. But if we're just
17 looking at the data, in your own -- in your own
18 folder it's under DOE data, it came from DOE.
19 These are just that -- the records recovered
20 from DOE. There's no reason for us not to look
21 at those for all claimants. You know, it
22 doesn't --

23 **MR. ELLIOTT:** No reason whatsoever.

24 **MR. GRIFFON:** -- have to be just adjudicated
25 claims.

1 **MR. ELLIOTT:** You could look at all those.

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

3 **MR. ELLIOTT:** You state your purpose, you tell
4 us how --

5 **MR. GRIFFON:** Right.

6 **MR. ELLIOTT:** -- what kind of a random sample -
7 -

8 **MR. GRIFFON:** Okay, okay.

9 **MR. ELLIOTT:** -- what the criteria is you want
10 us to select against. We'll select the claims
11 --

12 **MR. GRIFFON:** Okay, okay.

13 **MR. ELLIOTT:** -- and provide them to you, as we
14 have under Task IV. But we're not -- we're not
15 going to open up a portal --

16 **MR. GRIFFON:** No.

17 **MR. ELLIOTT:** -- where anybody can go in. My
18 staff cannot go in and just look at any claim
19 they want to without having a stated purpose.

20 **MR. GRIFFON:** Right.

21 **DR. WADE:** But to the -- let's deal with -- we
22 can return to the global issue, but for the
23 working group's needs right now, what do you
24 need to have at this moment, and then we need
25 to see that you have it.

1 **MR. ELLIOTT:** We can put those -- we can put
2 those seven claims that SC&A wants to follow up
3 with --

4 **DR. WADE:** Well, is 12 all --

5 **MR. GRIFFON:** Is it the 12?

6 **MR. ELLIOTT:** You want all 12.

7 **MR. GRIFFON:** Yeah, the 12.

8 **MR. ELLIOTT:** Okay, we'll put the 12 claims in
9 -- in a folder like we would on -- or we can
10 give you a CD like we would under Task IV. We
11 can put it in a folder on the O drive.

12 **MR. GRIFFON:** All right.

13 **MR. ELLIOTT:** It would be a timed folder.
14 We'll take it back down after the period of
15 time. Or --

16 **DR. WADE:** So when can that folder --

17 **MR. ELLIOTT:** -- we can get a CD.

18 **DR. WADE:** When can that folder go up?

19 **MR. GRIFFON:** But it just -- in addition to
20 that, I mean it'd just be -- well -- in
21 addition to that, there's the -- the claim
22 files that are referenced in Brant's report
23 where you looked at log books and comparing
24 them to radiation files. Now in most cases
25 they're radiation files that are not even in

1 the NOCTS system 'cause they're not claimants.
2 But in -- I think five or six of them end up
3 being NOCTS claimant files, so I would say at
4 least, at a minimum, those be included. And
5 I'm not sure why we just can't request all --
6 all Rocky Flats claims.

7 **MS. MUNN:** You know, this -- this is Wanda
8 Munn, and I probably shouldn't be getting into
9 this argument since it's clearly something that
10 our chair feels is necessary for him as an
11 individual to see. But I have to say that from
12 some members of the working group's point of
13 view, this issue has been investigated --
14 excruciating detail, absolutely excruciating
15 detail. I don't see that there's any
16 information that's been necessary that has been
17 denied to the working group. So far as I know,
18 there's only one member of the working group
19 that actually accesses those files on a regular
20 basis. SC&A has certainly done an incredible
21 job of -- of picking details on every single
22 one of these claims that they felt were an
23 issue, and NIOSH has done an incredible job of
24 responding to them. I don't know how many
25 files we have to look at and I don't know how

1 many files it's felt that we need to continue
2 to look at, but I think it's a serious mistake
3 to lead the Senator to believe that we have --
4 or -- or any member of Congress, anyone, member
5 of the public, to believe that we've being --
6 that we are being systematically denied access
7 to information that the working group needs. I
8 don't feel that that's so. And if there are --
9 if there are procedural issues that need to be
10 addressed, it appears to me that procedural
11 issues can be addressed. But I -- this appears
12 to be another one of those situations where
13 we've looked at this and looked at this and
14 looked at this, and now we're complaining
15 because we're not looking at it some more. And
16 I guess it's -- it's a little frustrating to
17 some of us to understand why we need to
18 continue to pursue this course of action when
19 the questions have been asked, the questions
20 have been answered, and now we're asking more
21 questions. This is really frustrating -- as
22 frustrating for some of us as it is for
23 apparently those out there.

24 **MS. MINKS:** I'd like to speak to that. This is
25 Erin Minks again from Senator Salazar. Thank

1 you, Ms. Munn. I think that the concern that
2 we have is the timing of this -- of this --
3 this access issue and that, as we see it at
4 this time, regardless of whether the -- the
5 entire working group feels that they've handled
6 this issue repeatedly and that they've had
7 enough access to the information to -- to --
8 you know, to deliberate to a level decision,
9 the concern at this point is is that the -- the
10 Senator can't help but see that, without access
11 to these -- to these files or with the -- the
12 closure without full explanation, then there's
13 not much choice but to just approve what SC&A
14 has recommended.

15 **MS. MUNN:** Well, I -- I hope you've -- I hope
16 you've heard the explanation and understand
17 that our chair now has access to whatever he
18 wants, as does SC&A, as long as the procedure
19 is understood. At least that's my
20 understanding. Am I incorrect?

21 **MR. GRIFFON:** No, that's not true.

22 **MS. MUNN:** Am I right?

23 **MR. GRIFFON:** We're negotiating it. It may not
24 be --

25 **MS. MINKS:** I don't think that's clear yet --

1 **MR. GRIFFON:** -- negotiable, you know, I don't
2 know.

3 **MS. MINKS:** I don't think that's clear yet, and
4 at this point in time, we will continue to do
5 what we can to ensure that the claimants get
6 the adequate consideration that they deserve,
7 and that's where we -- our interests lie, and
8 at this point in time there is significant
9 concern about this.

10 **MS. MUNN:** Okay. Now you said that was not
11 clear? That's not clear to us here?

12 **MR. GRIFFON:** No. I think we're getting closer
13 --

14 **DR. WADE:** Well, there's no --

15 **MR. GRIFFON:** -- I think we're getting close --

16 **DR. WADE:** -- there's no negotiation.

17 **MR. ELLIOTT:** What access do you want, and we
18 will afford the access. We're not going to, in
19 that, allow all of NOCTS to be opened up.
20 NOCTS is all of the 22,000 claims that we have
21 in our system.

22 **MR. GRIFFON:** Right.

23 **MR. ELLIOTT:** Okay? The purpose has to be
24 established for your access. So if you want to
25 see all dose reconstructed claims that have

1 been adjudicated, then we'll set that aside for
2 your access. That's all I'm asking for. Tell
3 me what --

4 **DR. WADE:** So we need --

5 **MR. ELLIOTT:** -- how to narrow this down.

6 **DR. WADE:** We need now for the working group,
7 as a body, to speak or the working group chair
8 has been empowered to speak to -- to -- to form
9 that -- that request.

10 **MR. GRIFFON:** Yeah, well, this -- this may be a
11 bigger question for the entire Advisory Board
12 to consider, actually. But I mean in the
13 meantime I want to at least make Rocky
14 workable, so I -- Arjun had a comment, though,
15 I --

16 **DR. MAKHIJANI:** I have a question, Mark. I'm
17 puzzled on a couple of points in regard to
18 privacy. We've all signed --

19 **MR. GRIFFON:** Right.

20 **DR. MAKHIJANI:** -- the privacy concerns and
21 gone through the training. The -- the site
22 query database has been closed to the public
23 because when you go into the documents on the
24 site query database there's an enormous amount
25 of personal information in the DOE documents on

1 claimants and non-claimants. And obviously it
2 contains sensitive privacy information and I've
3 always felt it proper that --

4 **MR. GRIFFON:** Right.

5 **DR. MAKHIJANI:** -- but we've always had access
6 to it, and I don't -- I don't understand how
7 the claimant files are more sensitive than
8 people who are not even claimants, whose
9 individual --

10 **MR. GRIFFON:** Yeah, I mean if --

11 **DR. MAKHIJANI:** -- data can be readily
12 reviewed. We would have -- we would not be
13 able to do any part of the job that I've done
14 so far without access to the site query
15 database.

16 **MR. GRIFFON:** I mean I --

17 **DR. MAKHIJANI:** This raises a question as to...

18 **MR. GRIFFON:** I would definitely agree that if
19 we -- the workgroup or SC&A -- put out a
20 product that -- that violates the Privacy Act
21 provisions in any way, then -- then, you know,
22 we've got to police that. I mean I -- I think
23 --

24 **DR. WADE:** And there is a concern about that
25 that's --

1 **MR. GRIFFON:** Now how to police that --

2 **DR. WADE:** -- being looked at right now.

3 **MR. GRIFFON:** -- I don't -- I don't -- I guess
4 the problem I have is I didn't think the way to
5 police that was to just cut off access and have
6 to request each claim. So I mean we've been
7 going along -- and I don't know, maybe it
8 wasn't so obvious, but in all these workgroup
9 meetings I've been working in, I've been
10 referencing -- you know, I pulled a number of
11 claims and compared measurements, for Y-12
12 even, and found, you know, data that supported,
13 it matched, this looks good. You know, nobody
14 ever stopped me and said Mark, wait a second,
15 how are you pulling those claims files. You
16 know, I wasn't revealing privacy information, I
17 -- so I thought all along -- I didn't think I
18 was going through any back doors or pri-- trap
19 doors or anything like that. I thought that
20 was there for us to use. And now I feel like,
21 you know -- I agree that if anything's released
22 that violates the Privacy Act provisions, then
23 we need to police that and -- and strongly
24 police that. But -- but to close that system
25 off, it just seems a overreach of the -- a way

1 to do this. Now I'm willing to work within
2 that, but I just think it -- it slows down the
3 system, too. I mean I guess we can request --
4 each time part of the requesting, you get into
5 this system that I've -- I feel like I've
6 worked against for years within DOE in
7 requesting records is that if you're not sure
8 what's there, you don't know what to request.
9 Now with claimants' files it might be a little
10 easier. We might be able to say for a certain
11 facility all adjudicated claims or -- you know,
12 or a randomly -- of ten percent of the
13 adjudicated claims or something like that. But
14 I just still don't understand why -- you know,
15 why that whole thing's -- why -- why it's
16 blocked off at all if we -- you know, can --
17 can we not police it on the other side better
18 and keep it accessible to the team.

19 **DR. MAURO:** I'd like to speak a little bit to
20 this, if it's okay. Speaking specifically
21 about the 12 cases and how we got to the point
22 where there was thought to be a good idea,
23 given the maturation of the -- of the problem
24 in terms of data completeness, just the way
25 you've described, the -- and I'm thinking the

1 mechanism now. What happened was, once it was
2 -- a judgment was made that in order to achieve
3 closure as best we can on this matter, it's
4 time to look at some cases to see how complete
5 they are. And then it was a matter of picking
6 cases from the database that made sense for our
7 intended purpose. And in order to do that, and
8 I was talking to Ron, he had indicated that
9 well, we're looking for particular cases that
10 fell in a particular category, especially with
11 regard to probability of causation, for
12 example. There was a certain range. So it
13 wasn't a matter where we could have said we
14 want to see this case, this case and this case
15 and then go through the process that we just
16 described. It was more a matter of let's take
17 a look at what's out there and say okay, now we
18 know which cases we'd like to look at. So we
19 sort of had to look at the cases to determine
20 what cases we want to look at.

21 So if somehow we could get a way of us being
22 able to identify what we need -- see, because
23 the outcome of this not the product --

24 **MR. GRIFFON:** And certainly that --

25 **DR. MAURO:** -- it's the dialogue that we engage

1 in now where we're at the point where we're
2 looking at those 12 cases, and their
3 completeness is very productive.

4 **MR. GRIFFON:** See, certainly that's doable
5 because in -- the way we select cases -- and
6 Larry's right, for the -- for the dose
7 reconstruction review is we -- we ask for --
8 and Stu Hinnefeld has usually been providing
9 it. We ask for different parameters on cases,
10 and then we go through it with the full Board
11 and -- and select based on various parameters,
12 so I think they -- you'd be more than willing
13 to produce that kind of thing and -- so I --
14 you know, we can move forward that way, I
15 suppose. I just think that, in my opinion,
16 it's a little bit of an overreach to close this
17 door off. If it was a violation or a report
18 that went out that violated the Privacy Act,
19 then I -- you know, that needs to be taken care
20 of. But is it -- is it just to -- the way to
21 take care of it, is it just to close off
22 access; I think that's an overreach.

23 **DR. MAURO:** I'd like to make one more
24 statement. I used the example of the parameter
25 that sort of drove the selection was one of the

1 parameters, but I wouldn't want to say at the
2 same time that there may not be other
3 parameters that be-- that become apparent that
4 in order to address a particular problem, so --
5 like I say, in terms of the research we do,
6 being able to go into the stacks, so to speak -
7 - I use that term all the time -- does make --
8 and allow us to zero in on where we want to go
9 by having access the way it is. But at the
10 same time we respect and understand the other
11 aspect of it so, you know, we look to guidance
12 from the Board.

13 **MS. MUNN:** But Mark, don't we as a working
14 group have the responsibility to establish what
15 the parameters are for Dr. Elliott and for the
16 people who have responsibility for the files?
17 Is there our -- isn't -- isn't our purpose in
18 being here to have both the agencies and SCA at
19 the same table so that we as a working group
20 can help facilitate their decision about what
21 the parameters are of the cases they wish to --
22 to see? Isn't that ri-- isn't that within our
23 --

24 **MR. GRIFFON:** To some extent, we -- we have --
25 yeah, I mean I think we're --

1 **MS. MUNN:** That's what we're doing. Right?

2 **MR. GRIFFON:** -- we're all guiding each other
3 in what parameters we need to look at, what are
4 most important, I agree.

5 **MS. MUNN:** So can't we sit here right here
6 today and say Larry, the parameters of the
7 cases we want to look at are -- whatever we
8 decide?

9 **MR. ELLIOTT:** That's all -- that's all I'm
10 asking for. This goes to language you would
11 find in the Privacy Act that talk about the
12 need to access the information to perform your
13 government duties, and -- and open access to
14 this kind of database for -- for one's
15 individual experience in walking through claims
16 is not covered. You have to have a stated
17 purpose to go into this kind of a data system,
18 and that's all we're after here. We want to
19 understand what we're trying to facilitate your
20 access for.

21 **MR. GRIFFON:** Well, what -- what -- what this -
22 - what this limits is -- and -- I mean I would
23 agree, sometimes this has been a exasperating
24 process, but what this -- I think what this
25 squelches is to -- to coin one of Jim's phrases

1 from a while ago, real-time science. I mean I
2 -- I think it makes it very difficult to
3 respond -- we're always -- it seems like we're
4 always up against another meeting, and it makes
5 it very difficult to make these requests for
6 files -- I mean it -- it comes from bo-- yeah,
7 both sides that have referenced different files
8 when they do random sampling or whatever. It
9 makes it very difficult to -- or if I'm -- if
10 I'm -- all these log books are now posted and I
11 have -- I mean I'll admit it, I -- I'm on the O
12 drive, you know, and I've looked at this -- I
13 mean that's -- I'm trying to go where the data
14 takes me, and I have looked at log books and
15 I've just taken handfuls of -- usually looking
16 at the highest values, primarily because
17 they're the easiest ones to track against a
18 database. You know, it's -- it's a lot easier
19 than tracking background against a datapoint in
20 a database, but I -- I've gone through and just
21 randomly selected some of those points and
22 cross-checked. And I've taken those points and
23 gone to the -- I've actually -- you know, I had
24 -- I had some big problems that I stated on the
25 follow-up of the -- of the high values in a log

1 book versus HIS-20 and prior to this meeting,
2 prior to being blocked out, I went through
3 about 30 of those names, was able to match up
4 about four of them as being claimants -- four
5 or five -- and the high values that I couldn't
6 find in HIS-20 were actually in their
7 individual radiation file. So -- so it -- it
8 helped me to get to the end, you know, to get
9 to the point where I -- I want to be on that
10 issue.

11 Now -- I guess now I'd have to say -- I'd have
12 to e-mail and request certain claimant files be
13 -- be accessible for my ongoing review of Rocky
14 -- you know --

15 **DR. WADE:** Well, now let's talk about --

16 **MS. MUNN:** Now -- now -- wait, wait --

17 **MR. GRIFFON:** I suppose it can operate that
18 way.

19 **MR. ELLIOTT:** (Unintelligible) offer a solution
20 --

21 **MS. MUNN:** -- wait, wait, let me --

22 **MR. GRIFFON:** I'm just saying I think it's --
23 it's a --

24 **MS. MUNN:** -- let me ask something. Let me --
25 let me reiterate. Did I or did I not hear Dr.

1 Elliott say --

2 **MR. ELLIOTT:** Mr., please.

3 **MS. MUNN:** -- if we choose to -- thank you, Mr.
4 Elliott -- if -- if we choose to request
5 availability to all adjudicated cases, which is
6 what we're interested in as a working group --
7 right? That's our charter. If -- if we choose
8 to ask him for access to those adjudicated
9 cases, he can and will provide those. Did I
10 not hear that?

11 **MR. ELLIOTT:** Yes. If -- if --

12 **MS. MUNN:** Then -- then --

13 **MR. ELLIOTT:** -- let me -- let me --

14 **MR. GRIFFON:** Now see -- see --

15 **MS. MUNN:** -- I fail to see the issue.

16 **MR. GRIFFON:** -- even in -- even in that
17 statement I think that that limits us in this
18 review. And I'm not -- I mean I'm not try--
19 I'm not trying to beat -- I'm not trying to
20 beat this thing to death. I think we can work
21 -- I think we can get past this. But if you
22 talk about adjudicated cases for this SEC
23 petition review, you know, I could argue --
24 I've heard a lot of hypothetical arguments in
25 the past several months here. I could

1 hypothetically argue that a lot of the cases
2 that have been done have been minimaxim--
3 minimizing and maximizing, and that some of the
4 cases where they had problems with the records
5 are pro-- you know, are probably set aside
6 until the -- you know, because they -- because
7 they're not ready to handle them so we don't --
8 you know, if we just get adjudicated ones,
9 we're not seeing the full -- that -- that part
10 of the population. I think that for this
11 review -- I mean -- and I would agree that we
12 have to be very strict that it's not about
13 reviewing the DR -- the dose reconstruction
14 results. You know, we're looking at these for
15 completeness of the data, but in --

16 **MR. GIBSON:** This is Mike. I'd like to make a
17 statement if I could. Also when we're
18 considering these SEC petitions, we're not
19 necessarily looking at adjudicated cases. We
20 need to see if the data's -- is sufficient to
21 reconstruct the dose so we can determine if we
22 should put forth the request for -- you know,
23 we -- that we agree that the SEC petition
24 should move forward.

25 **MR. ELLIOTT:** Can I offer a solution here -- a

1 proposal for you all? What I need from you all
2 is a clear understanding of what your purpose
3 is to look into these claimant files. That's
4 what we need. That's all we need. You can
5 divide that up in different ways. You could
6 say that the Advisory Board members should have
7 access to conduct your reviews to the level and
8 degree that you want to review on -- on the
9 full claimant population of files, with the
10 understanding that you can't speak about
11 claimant files --

12 **MR. GRIFFON:** Right, that's the key, I think.

13 **MS. MUNN:** Uh-huh.

14 **MR. ELLIOTT:** Okay? -- until we tell you it's
15 an adjudicated final. I think that's been --
16 we've -- we've walked that ground before.
17 Right? If you -- you know, if you want your
18 contractor to do the same, I don't care.

19 **MR. GRIFFON:** Right.

20 **MR. ELLIOTT:** All I want to know is the purpose
21 of going into these files has to be
22 established. Okay? And -- and if you want --
23 if the Advisory Board's consensus or the
24 working group's consensus is that -- that you
25 want a randomly-selected sample or you want the

1 whole Rocky Flats population and you want them
2 non-adjudicated and adjudicated --

3 **MR. GRIFFON:** Right.

4 **MR. ELLIOTT:** -- be that as it may, you are all
5 required, as Mark started off with this
6 conversation, we're all required to abide under
7 the Privacy Act. What I read to you a moment
8 ago is a message that will go out to all hands
9 from -- under my name. I am the responsible
10 party in this program to make sure that we
11 abide by the Privacy Act, and so that's all I'm
12 after. I'm not after trying to preclude or
13 prevent or put obstacles in your way. I
14 understand, Mark, that you like to get into the
15 files and dig --

16 **MR. GRIFFON:** Yeah.

17 **MR. ELLIOTT:** -- through them as you wish
18 looking for what you need. Others don't.

19 **MR. GRIFFON:** Right.

20 **MR. ELLIOTT:** I don't care. All I'm saying,
21 what I care about is the Privacy Act and my
22 responsibilities thereunder. And so I'd ask
23 you --

24 **MR. GRIFFON:** I -- I appreciate that.

25 **MR. ELLIOTT:** -- to work with me --

1 **MR. GRIFFON:** I do. I do.

2 **MR. ELLIOTT:** -- in that. Okay?

3 **MR. GRIFFON:** Yeah, the --

4 **DR. WADE:** Now let's take two steps back --

5 **MR. GRIFFON:** Okay.

6 **DR. WADE:** -- if you'd let me, just from a
7 procedural point of view -- because we want to
8 -- we want to resolve this and move forward.
9 Certainly the Board can speak through --
10 through a majority statement. Certainly the
11 working group can speak through a majority
12 statement. It is my understanding that the
13 Board has empowered working group chairs with
14 the ability to be heard in this issue. So
15 right now the working group chair -- or the
16 working group, depending upon how you want to
17 do it -- can state what needs to be stated and
18 then Larry will act accordingly. So whatever -
19 - we can do it either during lunch, you can do
20 it on a break --

21 **MR. ELLIOTT:** Let me add one -- one qualifier.
22 This -- the information that's been placed on
23 the O drive that you speak about, those
24 folders, those files, those have all been
25 placed there for your access with the

1 understanding that you have a purpose there.
2 It was unbeknownst to me and I'll -- this is my
3 responsibility, Mark. I didn't make the
4 connection when you were making comments about
5 well, I checked these claims against this
6 database, you know; I didn't make the
7 connection. My fault. I'm dealing with too
8 much maybe. But at that point in time I should
9 have investigated -- did what I did Friday --
10 and said ORAU, shut down your portal until we
11 get this sorted out. And that's all I did was
12 shut down the portal on those outside accesses.
13 The O drive should not be a portal to the --
14 the NOCTS system.

15 **MR. GRIFFON:** Well, I -- I mean I think -- your
16 statements were very insightful to me 'cause I
17 think it was really about thi-- this stated
18 purpose more than anything. That -- that gets
19 us here. And my -- my understanding of the
20 purpose of this review -- and I think, you
21 know, maybe -- and I'll be the first to admit,
22 this has been real time. We've been, you know,
23 workgroup meetings and calls between workgroup
24 meetings with NIOSH. You know, it's happening
25 -- everybody's trying to -- to get these

1 responses out quickly. My understanding --
2 again I'll say that -- was -- was to review the
3 completeness of the DOE radiation records in
4 the claims files. Nothing about the methods of
5 how NIOSH used those records to reconstruct
6 that individual claimant's dose. So is that --
7 that's pretty clear scope, I think, to review
8 the completeness of the radiation files and the
9 records. And now I -- but I will admit that --
10 that in reviewing SC&A's report, I think
11 there's some -- a couple of findings in there
12 that went beyond that -- that stated scope, so
13 I can see where -- where this issue might have
14 come up, in addition to privacy, the concern
15 that they were --

16 **MR. ELLIOTT:** Well, again, I'm not --

17 **MR. GRIFFON:** -- getting into Task IV type --

18 **MR. ELLIOTT:** -- I'm not speaking about scope.

19 **MR. GRIFFON:** Well, okay.

20 **MR. ELLIOTT:** I'm not -- I'm only using Task IV
21 as an established procedure on how we would --

22 **MR. GRIFFON:** Okay.

23 **MR. ELLIOTT:** -- facilitate your access to
24 those claims.

25 **MR. GRIFFON:** But I want to be clear with SC&A,

1 too, that I don't think that was the intent of
2 what I -- what we were looking for. We weren't
3 trying to look at --

4 **MR. ELLIOTT:** Mark, your purpose --

5 **MR. GRIFFON:** -- DR stuff.

6 **MR. ELLIOTT:** Your purpose in doing the level
7 of review that you do -- this is perhaps a
8 legal issue --

9 **MR. GRIFFON:** Yeah.

10 **MR. ELLIOTT:** -- but interpretation of Privacy
11 Act against your need as a Special --

12 **MR. GRIFFON:** Yeah.

13 **MR. ELLIOTT:** -- Government Employee, working
14 group chair, you know, to me, that establishes
15 your purpose and thereby you're required to
16 maintain the confidentiality in this
17 information under the Privacy Act. That's your
18 -- that could be your purpose.

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

20 **DR. WADE:** There are many issues running
21 through here and I think that --

22 **MR. GRIFFON:** Okay.

23 **DR. WADE:** -- first of all, let me -- let me
24 start by saying that everyone involved in this
25 is trying to do the right thing by claimants

1 and petitioners. There is no doubt in my mind
2 that everyone is motivated to do the right
3 thing. Mark, you need to decide again as
4 working group chair what you request of Larry
5 to make available, and then Larry will act on
6 that. I would hope he would act positively to
7 that, but if he has concerns --

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

9 **DR. WADE:** -- then he can raise them with you.
10 We're all required, once we have access, to
11 deal with that access in an appropriate way.
12 And in this case there are a couple of things
13 that have happened that I'll need to sit down
14 with John and talk about. And you know, you're
15 welcome to join us and --

16 **MR. GRIFFON:** I agree with that, yeah.

17 **DR. WADE:** -- we'll work through this and
18 there'll be no issue.

19 The other thing, while we get all of the issues
20 on the table, is that the purpose of the given
21 investigation is established by the working
22 group and the Board, and then SC&A acts upon
23 that established purpose by the working group
24 and the Board. So everything is in order to
25 make this happen according to -- to

1 appropriated procedures.

2 And to those out there listening, I mean this
3 is something that happened on Thursday and
4 Friday. We will resolve it today. I don't
5 want to leave anybody with the impression that
6 -- that this is a mindful waste of time -- a
7 mindless waste of time. I mean there are
8 things that needed to be looked at and they'll
9 be looked at in a very timely way and everyone
10 will be back on task and we'll move forward.

11 **MR. GRIFFON:** Okay. Okay. And I think we can
12 -- maybe during the break I'll offer to caucus
13 with Wanda and Bob --

14 **MS. MUNN:** Yeah.

15 **MR. GRIFFON:** -- and see if we can submit a
16 request to Larry on how we want to define that
17 --

18 **MS. MUNN:** I really think that would be nice,
19 Mark.

20 **MR. GRIFFON:** -- that request, yeah.

21 **MS. MUNN:** And it was -- after all, SCA is
22 working for us --

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

24 **MS. MUNN:** -- and we need to be very clear in
25 our -- our descriptions of what we feel their

1 actions should be, and that of course needs to
2 be translated to the agencies.

3 **DR. WADE:** And I would also add, when you
4 caucus, make your request as broad as you think
5 it will need to be for you to succeed. No one
6 is interested in stifling good scientific
7 debate here --

8 **MS. MUNN:** No.

9 **DR. WADE:** -- so it's not that you have to take
10 very cautious steps.

11 **MR. GRIFFON:** Well, that -- that's -- that's my
12 --

13 **DR. WADE:** Define what you think you might
14 need, then we'll make it available, but with
15 that will come a responsibility for how that
16 information is dealt, that's all.

17 **MR. GRIFFON:** Yeah, that's -- that's my --
18 well, that -- that was my sort of impression,
19 but I'd like to discuss with Wanda and Bob
20 before -- and Mike, if we can get him on the
21 line.

22 Anyway, okay, let's -- I think --

23 **DR. WADE:** One last thing for the record.

24 **MR. GRIFFON:** Okay.

25 **DR. WADE:** I've never seen a working group, or

1 a group of Special Government Employees come to
2 a task in more -- in greater -- with greater
3 energy and trying to do the right thing, and --
4 and certainly we applaud that and we want to
5 see that move forward and I think now we've had
6 a good discussion and we'll give you the
7 ability to move forward. We are -- we encour--
8 we're encouraged by what you -- you've done and
9 we want you to continue your work. Thank you.

10 **MR. GRIFFON:** And -- and -- and along -- along
11 that lines of -- of injecting a little good
12 spirit in here in the room -- I mean I -- I
13 think also that -- that, you know, we have so
14 much documentation to review sometimes that
15 when I -- when I've gone back over things I've
16 realized that, you know, we may have -- have
17 asked a similar question in a couple of
18 different ways, you know. It happens. I mean
19 it happens.

20 On the other hand, I think we've -- we've got -
21 - you know, we've -- responses have evolved, so
22 -- so it's not that we're just, you know,
23 chasing indefinitely here. I think we've --
24 we've -- I -- at least my goal in this -- and
25 with Y-12 and -- you know, every workgroup I've

1 been on has been to follow the data, and -- and
2 you know, probing it to the extent we have to
3 to make a good decision, you know, and I feel
4 like I have to not only be able to face all of
5 you, but also all of you on the phone, the
6 public, and we've got to face the public with
7 this decision, so...

8 COMPLETENESS OF DOSIMETRY RECORDS

9 Anyway, getting back to the item -- the
10 deliverable, I -- I think that -- how I led
11 into all this was that the -- the reply from --
12 from NIOSH I think addressed a lot of the --
13 let me step back.
14 SC&A produced a memo and attached matrix, I
15 believe, for this review of these 12 cases.
16 And I think the reply by NIOSH for the most
17 part responded to the matrix items, I believe.
18 And just talking with Joe and Arjun this
19 morning, I -- you know, they're feeling like
20 they're not in the position, because of this,
21 to discuss those particulars. However, I think
22 we -- they would like to at least review the
23 memo -- and they made copies here I'll hand out
24 -- go over the memo and then maybe have a
25 discussion about that, the gener-- the broader

1 model cases on the '65 fire as part of the
2 high-fired issue and had gone along and tried
3 to compare some of those model cases against
4 the internal results that were in HIS-20, found
5 that those weren't as complete as she'd thought
6 they were based on what we had heard before,
7 and then went on to look at CEDR; found that to
8 be somewhat more complete and but yet still
9 having some gaps that were -- were troublesome.
10 And we're now at the point in that review,
11 looking at the model cases, of realizing that
12 we would need to go back to the raw data. So
13 empirically, we almost traveled the same route
14 on the in vitro -- in vivo results for the 1965
15 fire as -- I think as -- as Mark was talking
16 about in general. So we arrived at this point
17 of wanting to look at the claimant file raw
18 data primarily because everything pointed to
19 that as sort of being the ultimate basis for
20 dose reconstruction and the -- the underpinning
21 on the issue of completeness that we need to
22 look at in terms of the SEC review.
23 So we've arrived here from a number of
24 different angles, but feel this is really the
25 cornerstone of this question that we're after,

1 which is how complete is the data as a basis
2 for dose reconstruction. And that's the reason
3 that we felt we needed to invest some time in
4 this. And this -- even though this sounds like
5 a new issue, an emerging issue, it's one that
6 we kind of evolved through and I think Mark
7 walked us through, but we also arrived at it by
8 virtue of some of the tests that we were
9 running on some of the issues such as high-
10 fired where it became apparent to us that HIS-
11 20 did have a number of gaps and that actually
12 it was the claimant data that we had to go back
13 to.

14 Then the question became how complete and
15 adequate is that if that is ultimately the
16 backstop we're talking about. So certainly
17 Arjun and Ron Buchanan, who's on the phone,
18 spent I think a good deal of time trying to do
19 a sampling. Now understandably at this point,
20 we wanted to get some initial results to decide
21 whether we needed to go any further. And this
22 wasn't designed to be a statistical sample, per
23 se, but one where we felt we could, you know,
24 take a representative sample across some years
25 and across some occupational codes and see what

1 we would come up with. And if in fact the
2 results were negative, I think that would have
3 been the end of it. But we just wanted to do
4 that initial sampling, so this was really that
5 exercise and perhaps you want to summarize a
6 bit more.

7 **DR. MAKHIJANI:** Yeah. Another point which we
8 got to looking at the DOE files was the whole
9 discussion of the neutron/photon ratio when
10 Roger Falk explained that he wasn't using the
11 HIS-20 database or the CER database and he had
12 original DOE paper data. And so the
13 completeness of the photon doses became a
14 question in determining the neutron/photon
15 ratios.

16 We -- what we did is -- we didn't have a
17 procedure for selecting randomly and we -- we
18 selected 12 -- I first selected four cases I
19 think -- I just got the numbers from Hans and
20 Kathy as to which cases were already looked at
21 in terms of -- there were five -- five cases we
22 -- we'd looked at, but I think I just got a few
23 at first. I looked at four, and I found
24 significant gaps in the data. The first one
25 I'd looked at had 11 years of -- the first 11

1 years were missing external dose data out of 27
2 years of employment. And since almost all --
3 ten out of 11 years -- were supposed to be when
4 everybody was badged, from '64 on were -- I
5 thought I should look maybe at a few more.
6 And then we decid-- we looked at 12 in all.
7 Ron examined them in much more detail than I
8 had, so I passed on the job to Ron, who created
9 the matrix that was sent out. Eventually we
10 tried to develop criteria -- a lot of the
11 observations I realize are kind of -- and I
12 apologize, it really did clutter up the main
13 thing. The main observation is on Table 1 on
14 page 2 of the memo. We tried to set up
15 criteria for completeness, whether there were
16 complete original data, and we defined original
17 from whatever records there were at the time,
18 even if they were computerized records. And we
19 defined summary data as what the DOE provided
20 NIOSH when NIOSH requested the data for dose
21 reconstruction. And then we had two bins,
22 missing summary data for more than one year and
23 missing summary data for more than five years.
24 By missing data, that means blanks. It doesn't
25 mean zero. But we could find no information.

1 Now we may have overlooked -- there's a lot of
2 paper there, so we may have overlooked some
3 things and, you know, there are some mistakes
4 in here and we'll -- we'll clear them up when
5 we review the details of NIOSH's response.
6 But we decided eventually that five years
7 seemed like a significant marker. If you had
8 data missing for more than five years, we
9 should catalog that, and we found that there's
10 more than five years of missing data in 50
11 percent of the cases and 42 percent of the
12 cases.
13 Now in -- in thinking back on it -- 42 percent
14 for internal and 50 percent for external.
15 In thinking back on it, probably a better
16 statistical approach would have been to divide
17 this into three periods, '52 -- or '52 to '63
18 when there was no integral security dose badge,
19 and '64 to early '90s when there was an
20 integral security dose badge, and then the D&D
21 period when the whole badging protocol changed.
22 So this -- this doesn't -- this -- because the
23 protocols changed, there -- this doesn't
24 reflect a real statistically thorough picture
25 of data completeness for Rocky Flats, and I

1 think since it was a preliminary screening, it
2 indicated to us that there are significant
3 gaps, both in external and internal dose.
4 About a third of these -- there's some overlap
5 between the external and internal missing data.
6 About a third of the total cases had more than
7 five years of missing data for internal and
8 external. We also found some discrepancies of
9 -- of varying magnitudes.
10 And -- yeah. So basically the -- the summary
11 that there were -- there are also implications
12 for the neutron/photon dose of -- if there are
13 a lot of photon doses missing, say in the late
14 '50s from when we're projecting backwards into
15 the '51 to '57 period, it's unclear whether
16 there would be low doses missing or high doses
17 missing, and so the integrity and claimant-
18 favorability of the neutron to photon ratio
19 would be affected by how those gaps were
20 filled. We didn't know how -- we have some
21 idea of how those gaps were filled as it is
22 described in section four.
23 So that -- that gives you some kind of summary
24 of what we found, and -- and just as a caution
25 -- Joe already said this -- we don't -- we're

1 not representing this as a statistical sampling
2 of the thing. Twelve is a -- is a pretty
3 sizeable sample from a -- from a large
4 population. You can say some things about it.
5 But because the dose protocols changed, I think
6 sampling should have be-- should be done
7 differently.

8 **MR. GRIFFON:** Brant, want to reply?

9 **DR. ULSH:** Again, I understand that SC&A --

10 **MR. GRIFFON:** Yeah.

11 **DR. ULSH:** -- hasn't had a chance to really
12 digest our -- our response. I do have a copy
13 of that if anyone needs it, but
14 (unintelligible) hand them around unless you
15 want (unintelligible), but our primary problem
16 --

17 **MR. GRIFFON:** This is the ma-- the matrix --
18 I'm sorry, Brant, that --

19 **DR. WADE:** No, this is his letter.

20 **DR. ULSH:** Yeah...

21 **MR. GRIFFON:** Oh, it's a letter? Is there a
22 mem--

23 **DR. ULSH:** This is our response to the items in
24 the spreadsheet that --

25 **MR. GRIFFON:** Okay.

1 **DR. ULSH:** -- came along with SC&A's report.

2 **MR. GRIFFON:** All right. But there wasn't a --
3 a memo in front of that -- no, it was just the
4 --

5 **DR. ULSH:** That's correct.

6 **MR. GRIFFON:** -- the matrix. Right?

7 **DR. ULSH:** That's correct. Because -- I mean
8 we just -- I mean the memo was built from the
9 spreadsheet -- data in the spreadsheet.

10 **MR. GRIFFON:** Okay.

11 **DR. ULSH:** So we just addressed the data in the
12 spreadsheet. And the primary problem that we
13 found -- well, a number of them, but the
14 primary one I think is that -- is the categor--
15 categorization of periods where there was no
16 monitoring, and I think SC&A has interpreted
17 that as periods when data was missing, and we
18 don't concur with that. You have to look at
19 where the people worked and whether or not they
20 should have in fact been monitored. If you had
21 people working in low exposure potential jobs -
22 - for instance, in administrative -- it's
23 entirely feasi-- it's entirely plausible that
24 they would not have been monitored. So we
25 agree -- I mean with a couple of exceptions

1 that we pointed out here in our response --
2 there are periods where there was no
3 monitoring. We don't agree that that
4 represents periods of missing data. In other
5 words, they were monitored but for some reason
6 we don't have the data.

7 I think that really is the nut of the whole
8 thing.

9 **DR. MAKHIJANI:** Could I ask a question? Part --
10 -- part of -- part -- well, we've defined how we
11 said, missing data. Missing data is when there
12 was no do-- when there was evidence of
13 employment, but blanks in the dose information.

14 **DR. ULSH:** Right.

15 **DR. MAKHIJANI:** So maybe -- maybe we should
16 have invented a different term --

17 **DR. ULSH:** Gap.

18 **DR. MAKHIJANI:** -- that --

19 **DR. ULSH:** I think we'd agree on a gap.

20 **DR. MAKHIJANI:** Yeah, a -- data gaps. I think
21 that may be a better term, because missing data
22 is used in dose reconstruction in a different
23 way. So I think we can agree that it should be
24 called data gaps.

25 But since there -- the security badge and the

1 film badge were integral from '64, there should
2 be no data gaps for entire years from the '64
3 to early '90s, unle-- unless lots of badges
4 were lost, records were lost, or something
5 happened.

6 **DR. ULSH:** Jim Langsted, can you speak to that?

7 **MR. LANGSTED:** Yeah, this is Jim Langsted. The
8 situation was that there were subcontractors on
9 site -- construction subcontractors -- for
10 doing work outside of the -- can you hear me?

11 **DR. ULSH:** Yeah, we can hear you, Jim.

12 **MR. LANGSTED:** I'm sorry, I wasn't sure if it
13 was on mute or not. But there were some
14 contractors on site that were different than
15 the plant population because they were working
16 outside of any of the radiation zones. And it
17 turns out these people were not badged. We
18 have seen several of these in the random
19 sampling that was taken for this study, and
20 that's in fact what we're seeing here. It was
21 probably a misstatement to say that everybody
22 on site was badged from 1964 on. The
23 subcontracting -- subcontracted construction
24 people fell into a different category, and we
25 need to straighten that out in the Technical

1 Basis Document. But that's what -- what I
2 believe we're seeing here.

3 **DR. ULSH:** Now Jim, did you say that those were
4 people who did not go into the radiation areas?

5 **MR. LANGSTED:** Correct.

6 **DR. ULSH:** If they did go into the radiation
7 areas --

8 **MR. LANGSTED:** Then they were badged.

9 **MR. GRIFFON:** So that accounts for -- for --
10 well, I don't think we can do case by case --

11 **MR. FITZGERALD:** No, not right now.

12 **MR. GRIFFON:** -- 'cause we're not ready today,
13 but that -- that -- that's different than what
14 the TBD led us to believe, that everyone was
15 monitored, so that -- that's okay. If it's a
16 TBD fix, it's a lot easier than --

17 **DR. ULSH:** Yeah.

18 **MR. GRIFFON:** -- than the other. Okay.

19 **MR. FITZGERALD:** And Jim, just for
20 clarification's sake, you're saying one for one
21 you could rationalize the gaps -- 'cause we --
22 we -- we were looking at seven or eight-year
23 gaps in the particular worker and -- but yet
24 there was also some badged periods. That's a
25 little confusing if they're a construction

1 worker. It would either be one or the other,
2 you would think.

3 **MR. LANGSTED:** Well, unless that construction
4 worker was assigned to a job that was in the
5 radiation zones, then they would have been
6 badged for that period.

7 **DR. MAKHIJANI:** Jim, we -- I -- maybe I should
8 open my spreadsheet, but this person I think
9 who had 11 years of missing data was a
10 secretary. So she should -- she would have
11 been on site. I don't think she would have
12 been like a construction subcontractor. And I
13 will open up my spreadsheet and -- and confirm
14 this to you, but so --

15 **MR. LANGSTED:** You're exac-- you're exactly
16 right, Arjun. That was a case of an individual
17 that did work for the prime contractor there at
18 Rocky Flats that was not badged for a large
19 period. Her work history was that she was a
20 secretary for the security organization and
21 there are some -- some records or some letters
22 in her file that say that because she never
23 entered the production areas, she didn't
24 believe she needed to participate in the
25 bioassay program. And I don't recall if one of

1 those letters also said the external dosimetry
2 program, but that appears to be the case there.

3 **MR. GRIFFON:** But wasn't the -- I mean we just
4 went over that statement of "integral to the
5 security badge was the dosimetry," so wouldn't
6 she have had external monitoring?

7 **MR. LANGSTED:** Apparently not, in this case.

8 **MR. GRIFFON:** Well, that's -- that's the
9 question, I guess.

10 **MR. FITZGERALD:** Yeah, it sounds like a --
11 certainly a question of -- of what happened
12 post-'64 because if you were on-site in defense
13 line, you certainly would have a security
14 badge, and that would be something that would
15 have a integral chip in it. That -- that
16 certainly bears a little bit more work-through.

17 **MR. PRESLEY:** This is Bob Presley. The lady in
18 question worked in a off-site security office.
19 If the security group -- their head office was
20 off-site, I can see where she would not have
21 had to even have a security badge to work in
22 some of those -- the -- as a -- as a
23 receptionist or something like that.

24 **MR. LANGSTED:** I believe she was on-site, Bob.

25 **MR. PRESLEY:** Okay.

1 **MR. LANGSTED:** Building 21 was one of the
2 buildings that was on-site, but was outside of
3 -- of the radiation areas.

4 **MR. PRESLEY:** Yeah. I don't -- I don't have a
5 problem with that.

6 **MR. GRIFFON:** Well, it -- it's just a question
7 of the way the policy's stated in the TBD leads
8 you to believe that everyone should have
9 records. I mean it's not even a question of
10 the magnitude of this individual's dose,
11 necessarily. I mean obviously she -- she -- it
12 seems like she was unlikely to have much
13 exposure, but it's -- it's -- you know, this is
14 a random sampling --

15 **MR. LANGSTED:** And I did some looking back --

16 **MR. GRIFFON:** -- or -- or fairly random
17 sampling, I think, so it raised those questions
18 -- yeah.

19 **MR. LANGSTED:** -- at the actual TLD laboratory
20 worksheets for that group, and I could not find
21 her even listed on those worksheets, so that
22 indicates that she was not -- did -- was not
23 issued a dosimetry badge.

24 **DR. ULSH:** It sounds like we might have a
25 problem with language in the TBD, Jim, that --

1 that indicates that for that time period --
2 what was it, '64 to the maybe --

3 **UNIDENTIFIED:** Early '90s.

4 **DR. ULSH:** -- early '90s -- where we talked
5 about the integral badge, where the security
6 badge and the dosimetry badge were integrated.
7 We might need to revise that language to more
8 accurately reflect the badging policies of the
9 site at the time.

10 **MR. GRIFFON:** The -- the other thing I -- I --
11 the other question I have is related to the
12 TBD, but it's these -- these -- these dose
13 reconstruction guidelines that exist for
14 different sites. And I guess -- I guess the
15 one tied in with the TBD, one thing that, you
16 know, sort of raised the question in my mind on
17 this very issue was in this dose reconstruction
18 guidelines dated 9/1/05 -- now these may have
19 been superseded since this time frame -- but
20 there was a statement -- for unmonitored
21 individuals it says from '64 through the early
22 '90s all staff personnel were issued
23 dosimeters. If there is no data for an
24 individual, then you must assume their
25 dosimeters were lost. And that kind of

1 surprised me that this statement -- you know,
2 this statement tied in with the guidelines.
3 I'm not sure -- you know, it seems like there
4 was sort of some expectation that there might
5 be some -- some problems or potential gaps in
6 that time frame and if -- if -- I don't even
7 know what it means to assume that their
8 dosimeters were lost.

9 **DR. ULSH:** I guess we would treat them as
10 unmonitored -- probably apply coworker data,
11 but --

12 **MR. GRIFFON:** Yeah, and then I guess the --

13 **DR. ULSH:** I mean I'm just guessing there,
14 Mark.

15 **MR. GRIFFON:** -- you know, the biggest question
16 -- you know, if it's a -- is just, you know,
17 how do you -- if you have gaps in data --

18 **DR. ULSH:** Yeah.

19 **MR. GRIFFON:** -- there's different ways to
20 treat that, certainly, but --

21 **DR. ULSH:** Well, the way that we looked at it
22 was -- I mean we agree that there's a question
23 on the table here about the TBD language and
24 reflecting the badge exchange -- I'm sorry, the
25 badging policy at the -- at the site. But the

1 way that we looked at this, whenever -- in
2 these 12 cases that SC&A looked at, whenever we
3 identified a gap the first thing that we did is
4 we looked at the -- the work history and where
5 that person worked, and whether or not that
6 gave us some indication of their exposure
7 potential. And in -- I want to say every case,
8 we found that the periods where there were gaps
9 corresponded to periods where their employment
10 was in a low exposure potential situation. So
11 we didn't -- we didn't find that -- we didn't
12 categorize that as missing, but I agree that
13 there is a -- an issue here on the table about
14 the language in the TBD on the badge policy.

15 **DR. MAKHIJANI:** Well, let me ask another
16 question about the earlier case -- I -- I've
17 found my spreadsheet here. This -- this person
18 had missing data from '63 to '73 inclusive, but
19 the first years for which there are data, '74
20 and '75, are non-zero shallow and deep dose
21 entries.

22 **DR. ULSH:** Which one is this, Arjun?

23 **DR. MAKHIJANI:** This is the same secretary that
24 we're talking about.

25 **DR. ULSH:** Yeah, but what -- what's the case

1 number?

2 **MR. GRIFFON:** No, no, no.

3 **DR. ULSH:** Your case -- your case number, not
4 the NIOSH case number.

5 **DR. MAKHIJANI:** Number three.

6 **DR. ULSH:** Number three, I was getting a little
7 nervous.

8 **MR. GRIFFON:** Let's not go there.

9 **DR. WADE:** Don't want to get too
10 (unintelligible).

11 **DR. MAKHIJANI:** No, no, I -- I have opened the
12 sanitized version here. I don't even know the
13 number.

14 **MS. MUNN:** That's good. That's a good
15 (unintelligible).

16 **DR. MAKHIJANI:** No, that's why we created
17 these, Ms. Munn, so we won't -- we wouldn't --

18 **MS. MUNN:** I know.

19 **DR. ULSH:** All right, this --

20 **DR. MAKHIJANI:** -- read them by mistake.

21 **DR. ULSH:** This is -- okay.

22 **DR. MAKHIJANI:** So the first -- the -- the
23 first two years for which there are data are
24 non-zero, both deep and shallow are not zero,
25 if I'm reading it right. Yeah, penetrating --

1 yeah. And then -- then there was one other
2 year where there's a non-zero entry, then there
3 were zeroes for most of the years after that.
4 But it's not -- it's not as if there was no
5 exposure potential. There was occasional
6 exposure potential through at least 1987.

7 **DR. ULSH:** Emily, can I speak about -- as long
8 as I don't talk about the person -- you know,
9 what their name is or anything like that -- can
10 I talk about the job duties here? I don't want
11 to give away anything that would --

12 **MR. GRIFFON:** Don't give away their identity.
13 Right?

14 **MS. HOWELL:** Right. Just be -- if you could
15 speak about their job duties --

16 **DR. ULSH:** Okay.

17 **MS. HOWELL:** -- but without too much other
18 information.

19 **DR. ULSH:** This person that you're referring
20 to, Arjun, worked as a clerk and a secretary
21 for the plant protection organization during
22 the period that you're talking about. And Jim
23 I think -- Langsted -- did a spot check of some
24 of -- some of these people, some of the records
25 for this particular person. And this is the

1 one that Jim said the dosimetry reports and the
2 TLD laboratory worksheets indicate that they
3 were not monitored. So it's not that they were
4 monitored and we don't have the records. These
5 indicated they weren't monitored.

6 Now there is a positive dose in a particular
7 year -- and I should point out that this is one
8 -- this is a case that SC&A reviewed under Task
9 IV, this is an individual DR --

10 **DR. MAKHIJANI:** This is just about
11 completeness, not --

12 **DR. ULSH:** I know, but --

13 **DR. MAKHIJANI:** But this was a compensated case
14 so there was no need to review the external
15 data because there was no calculation ever
16 done.

17 **DR. ULSH:** Well, that's an important point,
18 too, is that this is a compensated case. And I
19 don't know, maybe I shouldn't have said that,
20 either -- we shouldn't have talked about that,
21 either, but -- so this is -- you know, as Bob
22 mentioned, this is a person, clerk or
23 secretary, that had low exposure potential, so
24 we -- we didn't conclude that that was a case
25 of missing data at all.

1 **DR. MAURO:** Could -- I'd like to say some-- I'm
2 listening and I feel as if right now we're
3 sitting -- arguing the facts of the matter.
4 It's almost like we're at the stage where what
5 -- what's the facts, and -- and -- and -- and
6 you know, the reality is the facts are in the
7 records. We could find out -- and I agree with
8 you. I think if we do our homework, we go in,
9 find out what the facts are.

10 Now the reason I bring this up is that the
11 facts really are going to drive this for the
12 following reason. If it turns (unintelligible)
13 that, for all intents and purposes, everyone
14 has a complete record that you can go back and
15 use to reconstruct their doses, all of a sudden
16 that SEC issue just goes away. I'm going to be
17 -- I'm going to speak in gross generalities.
18 And the reason we're having this conversation
19 right now is we're disagreeing on the facts,
20 the disagreement being that we think there
21 might be some serious holes. You think there
22 aren't -- may not be some serious holes.

23 Let's, for the sake -- sake of discussion, do a
24 thought problem. Let's agree that maybe there
25 are some holes. We don't know how big they

1 are, but they may be some -- to be found out,
2 and we'll find this out and hopefully we'll
3 find this out quickly. And that -- if we get
4 to the point where we say okay, we've got these
5 holes, aren't we really talking about now can
6 you fill the holes and -- or are the holes of
7 such a nature by way of the nature of the work
8 or the time period when the holes occurred and
9 unknowns -- and unknowns regarding process
10 knowledge that are going to prevent us from
11 reconstructing the doses of some workers.
12 Now I -- I -- I don't -- I don't want to lose
13 sight of the ball. That's where we are. We're
14 trying -- so we have to get by the facts first.
15 And if we find -- if -- we've got to get to a
16 place first where we acknowledge that yes,
17 there are or there are not significant holes,
18 whether it's 1969 or it's this particular
19 person or whatever. We've got to get -- we've
20 got to get off that as -- and get to the point
21 where we all agree what the nature and extent
22 of the holes are. Because if we can't get to
23 that point that we generally see the facts of
24 the matter the same way, we're going to have a
25 very hard time talking to each other.

1 And then, once we say okay, we generally agree
2 -- there may be a little bit of roughness on
3 the edges, but basically we see this time
4 period, this job category or whatever, or this
5 category of exposure -- neutron/photon ratio --
6 but we generally see it, then -- see, I want to
7 be able to get to a point where okay, is there
8 anything we can do about those holes, whatever
9 their magnitude are. Now I know that there's
10 been quite a bit of discussion on coworker
11 models and lots of disagreement on what that --
12 how to do that. That -- in fact that was a
13 while ago, it's funny -- but it's back again.
14 It's back again because all of a sudden we're
15 starting to think maybe there are some holes,
16 'cause we almost -- we almost let go of that
17 for a while because we thought we had a very
18 complete dataset. So I -- I'm trying to get a
19 model of how do we get closure. And to me, it
20 is let's get the facts of the matter behind us
21 about this -- the nature and extent and the
22 magnitude of those holes, if they even exist.
23 If they do exist, we get a general sense of a
24 concurrence on what they are and where they are
25 and why they're there. Then we move on to say

1 -- and I'm going to presume for right now that
2 there are at least some, okay? 'Cause I know
3 I've heard lots of agreement that at least 1969
4 was a problem, apparently. I think --

5 **DR. ULSH:** We'll cover that.

6 **DR. MAURO:** We want to talk about that separate
7 --

8 **MR. GRIFFON:** Yeah.

9 **DR. MAURO:** I'm staying on -- I'm -- I'm -- I'm
10 operating over here right now. Okay? Now
11 we're going to get off there and we're going to
12 say okay, what are we going to do about it, and
13 then we're going to get around the table as a
14 bunch of health physicists and say okay,
15 listen, what is a reasonable thing we can do.
16 And now there's -- now here's where things get
17 difficult. Now it becomes a matter of judgment
18 on I think we can fill these holes this way by
19 using this model or extrapolating from here.
20 We've done a lot of that on Y-12 and it worked.
21 Okay? And there were places where it was
22 agreed well, this -- you know, this particular
23 case, I guess it was (unintelligible) and I
24 don't know if we really can do that. So I
25 think that that's -- so I'm concerned right now

1 that we're spend-- we -- we've got to find a
2 system that we all agree to to get the facts
3 tight, whether it's sampling 12 cases or
4 sampling 30 cases from different pla-- whatever
5 -- whatever it is, I'm not saying -- but we've
6 got to get to the point where once we go
7 through this process, we all see the facts the
8 same way and we all agree on the extent and
9 nature of the holes, and then we can move on to
10 where the action really is -- if there are
11 holes, how are we going to fill them, and can
12 we fill them. And I -- I -- you know what I'm
13 concerned about? I'm concerned that we're too
14 early in the process. We -- we sh-- in other
15 words, I was hoping we -- we -- you know, we
16 went through a real long, circuitous process --
17 I mean we've been at this a while. But we're
18 actually in a place now that's different than
19 when we started, but it's not a bad place.
20 It's a good place. I'm starting to see that
21 there is a place -- now -- now we -- you and I,
22 we --

23 **MR. GRIFFON:** It's a good place. It's a good
24 place. I'll concur.

25 **DR. WADE:** It's where we are, so it'd better be

1 a good place.

2 **MR. GRIFFON:** I love Cincinnati. We've been
3 here a lot. It's a good place.

4 **DR. MAURO:** I think I see a tractable problem
5 here. I mean I think we can all engage this
6 thing, and we should not be arguing over the
7 facts. And there's got to -- and that's why
8 it's so important that we get access to these
9 records so we can convince ourselves that you are
10 right -- or wrong, you know.

11 **MR. GRIFFON:** That's -- and that's what -- I've
12 been -- the bottom line is, let's let the data
13 drive this process and -- but we have to have --
14 -- I mean I appreciate Jim's comments on -- on
15 the phone here 'cause that's information we
16 didn't have, you know, and the T-- we can only
17 go by what you outlined in the TBD. Now, you
18 know, secretary or not, this person was a prime
19 contractor, so I -- I think we've -- we've laid
20 out as much as we can do here now, but I think
21 we do have to, you know, still explore that --
22 I don't know if it's just a matter of rewriting
23 the TBD or if there's -- you know.

24 **DR. ULSH:** Well, I would -- I would ask -- when
25 you get a chance, when you get access to the

1 data and you can --

2 **MR. GRIFFON:** Yeah.

3 **DR. ULSH:** -- digest our responses, go back and
4 look at the gaps you identified and consider
5 the work history of the individual involved.
6 And if we find a process operator with a gap in
7 his monitoring record, that's one thing. But
8 if we find a secretary or a clerk with a gap in
9 their monitoring record, that's another thing.

10 **MR. GRIFFON:** But the -- but --

11 **DR. ULSH:** I'm just -- I know, I know.

12 **MR. GRIFFON:** -- if it -- if it's a -- I mean
13 that's the -- the thing is, if -- if you
14 randomly sample and you've got some secretaries
15 and clerks in your pool of sampling and they
16 have no records and the policy said that
17 everybody was -- was monitored during that time
18 period, you know, I -- I'd -- I would agree
19 that the chances of them getting much dose is
20 probably nil. But the point is --

21 **DR. ULSH:** Well, that was the second part of
22 the --

23 **MR. GRIFFON:** -- according to the policy, they
24 should have had some records and they're not
25 there. That's the conclusion. It's not the

1 magnitude of the dose.

2 **DR. ULSH:** The second part of what I wanted to
3 say is --

4 **MR. GRIFFON:** Sorry.

5 **DR. ULSH:** No, that's all right.

6 **UNIDENTIFIED:** (Unintelligible) got to get
7 beyond that.

8 **DR. ULSH:** I think -- John, I think we can
9 agree that in a dataset of 20,000 people,
10 you're going to find a gap. There's going to
11 be. There's probably some record that slipped
12 behind -- behind a file cabinet, something like
13 that. I'm not aware of any, but come on, it's
14 a human institution.

15 **DR. MAURO:** I -- I'm -- I -- I agree with you
16 100 percent.

17 **DR. ULSH:** So if the questi-- there are two
18 questions then. Number one, is this just an
19 occasional thing that happened because it's the
20 nature of large database problems, or is it a
21 systematic problem that compromises our ability
22 to do dose reconstructions. Now I don't know
23 where you'll -- where SC&A is on this --

24 **DR. MAURO:** One more layer.

25 **DR. ULSH:** Okay.

1 **DR. MAURO:** Even if it's not systematic, if the
2 nature of the problems is such that they create
3 gaps in time periods and -- and job functions
4 such that it's going to make it really tough to
5 fill in those gaps, that's also important to
6 know also.

7 **DR. ULSH:** Exactly. And we're -- we haven't
8 seen evidence that there's a systematic or
9 intractable problem. Of course there's going
10 to be the occasional gap. There has to be. I
11 can't point to one right now, but we can agree
12 that they're going to be there. Then the
13 question becomes what do you do then, and we've
14 got coworker models. Now we need to have some
15 more discussions about OTIB-38. I mean we all
16 agree on that.

17 **MR. GRIFFON:** Right.

18 **DR. ULSH:** I haven't heard a lot of question
19 about OTIB-58, with the exception of maybe the
20 neutron issue.

21 **MR. FITZGERALD:** Neutron/photon.

22 **DR. ULSH:** Yeah, so I mean those are issues
23 that we do need to talk about. But at the end
24 of the day if we've got a gap for a particular
25 person -- I mean Rocky Flats is no different

1 than any other site. We're going to fill it
2 with coworker data if we can agree --

3 **MR. FITZGERALD:** Right.

4 **DR. ULSH:** -- we need to have that discussion.

5 **MR. FITZGERALD:** And put things in context,
6 you're saying where's -- does SC&A stand at
7 this point, you know, we did a reconnaissance-
8 type sampling, meaning okay -- with the
9 realization more and more that the claimant
10 file was in fact going to be the true basis
11 with the understanding of HIS-20 having some
12 shortcomings, we did this reconnaissance
13 survey. This is as far as we are. And I think
14 all we want to do at this stage is say, you
15 know, we did this sampling, we weren't sure
16 what we were going to find, but we kind of
17 surprised ourselves by finding, in a -- in a
18 random look, gaps that we frankly didn't expect
19 to see because we had understood the database
20 to be a pretty complete database. Unlike the
21 other sites, Rocky, we understood, had a
22 complete database and what we were finding were
23 holes that we couldn't rationalize, and we
24 wanted to surface that for this very purpose,
25 to kind of reach an understanding of what does

1 this mean, what -- what is the significance of
2 this and is this something that needs to be
3 explored further. That's it. There isn't any
4 more intention than to say that, you know, this
5 is something that we need to put to bed in
6 order to get to this next step that -- that
7 John's referring to.

8 **DR. WADE:** And the working group really needs
9 to decide upon a path forward based upon --

10 **MR. FITZGERALD:** Right.

11 **DR. WADE:** -- what's in front of it, and that's
12 perfectly reasonable. I mean it's really the
13 working group's task now to say this is the
14 path forward we want to pursue and instruct
15 you, and NIOSH will then join and we'll get
16 this resolved.

17 **DR. MAKHIJANI:** One more specific of another
18 type, leaving a secretary alone, example number
19 two is an electrician, 11 years of work and no
20 data for six years -- no external dose data for
21 six years.

22 **MR. GRIFFON:** Was that other than prime
23 contractor? They might have that information.

24 **DR. MAKHIJANI:** Do you -- Jim, do you know
25 whether they were a prime contractor,

1 electrician, the number two case?

2 **MR. LANGSTED:** I'm looking at my notes -- yes,
3 the individual was a non-prime contractor
4 individual.

5 **MR. GRIFFON:** So this is the first we've heard
6 -- you know, that isn't -- I mean if you looked
7 at this report --

8 **DR. MAKHIJANI:** They have -- but they have
9 doses listed for some years.

10 **MR. GRIFFON:** Yeah, where he may have gone into
11 the area.

12 **DR. MAKHIJANI:** It's very confusing.

13 **MR. GRIFFON:** Yeah.

14 **DR. MAKHIJANI:** It's a -- it's a very --
15 because it -- it -- the -- the -- what I'm
16 hearing now is that there is another -- other
17 than the periods, which is '51, '52 to '63, '64
18 to the early '90s, now we've got two more
19 layers.

20 **MR. GRIFFON:** Prime versus -- right.

21 **DR. MAKHIJANI:** One is prime contractor people
22 who may not have been monitored and been issued
23 a different badge than the integral badge, and
24 then the second layer is a subcontractor who
25 may have sometimes been exposed and sometimes

1 not exposed, because that's what this is --
2 shows that this person was sometimes exposed
3 and not exposed. So we've got a -- I just want
4 to observe that we have a -- now a --

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

6 **DR. MAKHIJANI:** -- truly complex situation.

7 **MR. FITZGERALD:** And there's the implication, I
8 think, that it sounds like the subcontractor,
9 and even perhaps the prime, was badged for jobs
10 that might carry more exposure potential --

11 **MS. MUNN:** Uh-huh.

12 **MR. FITZGERALD:** -- but not be badged -- and
13 that makes sense. I mean you see it at other
14 sites, but --

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

16 **MR. FITZGERALD:** -- this is a dynamic I think
17 we weren't aware of.

18 **MR. GRIFFON:** I think as a task to get -- to
19 get a -- to go beyond this here, I think SC&A
20 needs to come back with us with a sampling
21 strategy for maybe a slightly larger sample,
22 but I'm not talking, you know, that much larger
23 'cause I think the sample size was not that --
24 that small in the first place, but maybe
25 incorporating those factors you just mentioned,

1 Arjun, that -- and then on the flip side, I
2 think it would be good -- somehow we need to
3 know -- maybe aft-- there's got to be an
4 interactive process I guess between NIOSH where
5 we can find files that are for people that are
6 non-subscribers versus subscribers-- I guess that's the other
7 layer -- that wouldn't be intuitively obvious
8 in the record, would it? I -- I -- it's not to
9 me, anyway. I mean is there a way to identify
10 --

11 **DR. MAKHIJANI:** Maybe -- there may be
12 information, but I think one would have --

13 **MR. GRIFFON:** Yeah.

14 **DR. MAKHIJANI:** -- to read all the fine print,
15 which would be -- have to be pretty time-
16 consuming.

17 **DR. ULSH:** Which is what we did.

18 **MS. MUNN:** It's terribly time-consuming.

19 **DR. MAKHIJANI:** Very.

20 **MR. FITZGERALD:** So the personnel system could
21 be searched to find that -- you could certainly
22 see a Rocky employee versus a contractor
23 employee.

24 **DR. ULSH:** Does anyone on -- on the ORAU team
25 out there on the phone know if there's a way to

1 pull out employer status, like whether they
2 were prime or contractor, in an easy way?

3 **MR. SHARFI:** Not without looking at the DOL
4 (unintelligible).

5 **MR. ROBINSON:** This is Al. I -- I don't know
6 of a -- really an easy way to do it, but I know
7 that, you know, it is often buried in the DOL
8 documents, and then we recently have had access
9 to these worker history cards and the cards
10 sometimes give you good information. But
11 that's like a -- you know, getting down into
12 the details.

13 **MR. ELLIOTT:** This is Larry Elliott. I can
14 answer your question. In our claims tracking
15 system, you would have to go into the DOL
16 correspondence file and read what they
17 determined his eligibility on. That's where we
18 pick up a job title or a job category and place
19 it in that -- that front piece that you see on
20 the claim file that says what -- what the
21 worker did, so that's where we would pull that
22 out of. We don't -- we don't have that as a --
23 there's no IT linkage. You know, it's not a
24 hot button where we can sort on that thing
25 alone. This is why we had so much trouble

1 trying to come up with a number of construction
2 trades workers for TIB-52 and trying to figure
3 out who was prime, non-prime. That's all hand-
4 sorted. That's all time-consuming, each
5 individual claim opened up. I wish we had a
6 better mechanism, but we haven't had time to
7 devote to that yet.

8 **MR. GRIFFON:** If we can -- if we --

9 **MS. MUNN:** The key word was just said, buried.
10 You know, if it's in there, it's way, way deep
11 in there.

12 **MR. ELLIOTT:** Or you'd --

13 **MR. GRIFFON:** Well, if we can --

14 **MR. ELLIOTT:** -- have to go to the CATI and
15 then see --

16 **MR. GRIFFON:** -- unless -- unless --

17 **MR. ELLIOTT:** -- the interview, the interview
18 might be --

19 **MS. MUNN:** Yeah, right, right.

20 **MR. ELLIOTT:** -- another source.

21 **MS. MUNN:** And if you can rely on the -- the --
22 if the information's on the CATI even.

23 **MR. GRIFFON:** All right, many reasons raised
24 not to do this. I think -- Arjun, how long did
25 it take for the 12 cases to be reviewed from

1 your side?

2 **DR. MAKHIJANI:** Well, Ron will have to chip in
3 on his side. We -- just FYI, what's in process
4 inside SC&A is -- because this question of, you
5 know, statistical sampling came up, we did ask
6 our statistician, Harry Chlemynski, to think
7 about this problem, and he has given us some
8 preliminary guidance -- not ready for primetime
9 yet, but it won't be -- you know, you won't
10 need to sample hundreds, in other words. You -
11 - you can do it in dozens. If --

12 **MR. GRIFFON:** Right, we're talking dozens of
13 cases, and --

14 **DR. MAKHIJANI:** I -- I think -- and I spent a -
15 - probably a couple of days on this, but Ron
16 may have spent more 'cause he -- he looked at
17 the data in more detail and developed the
18 matrix. Ron?

19 **MR. BUCHANAN:** Yeah, this is Ron. I probably
20 spent a -- a good week on that -- off and on
21 for several weeks, but probably a total full
22 time of a week on it. I -- I did have another
23 question I'd like to ask on the number of
24 layers. In the '64 to early '90s where they
25 badged everyone with a security badge, did they

1 -- was there another layer that said okay, we
2 badged everybody, but we didn't read the people
3 that were secretaries or low exposed areas; was
4 there any period during that everybody was
5 badged that they didn't necessarily process --
6 or does anyone know if that's true or not?

7 **DR. ULSH:** Ron, I'm going to chip in with what
8 I know, and maybe let Jim Langsted go a little
9 further. We do know that in 1969 -- we --
10 we've seen an explanation in -- it was a
11 monthly progress report, I believe from the
12 dosimetry section. They decided that people
13 who were not stationed in plutonium areas -- in
14 other words, these are the administrative areas
15 outside of the radiation areas, or in the
16 formerly uranium areas. And these people who
17 were on quarterly badge exchange cycles and so
18 by definition these are the people judged to be
19 at low risk. They made a decision in I believe
20 it was April of '69 that those people would be
21 -- continue to be badged, but they would not
22 read those badges unless circumstances
23 warranted. In other words, they were involved
24 in a -- an incident or something like that.
25 Now we do know that in terms of the uranium

1 areas at that time, by then, by '69 -- I think
2 it was in actually '65 that all of the uranium
3 operations were transferred to Y-12, so there
4 wasn't much uranium left at Rocky Flats during
5 that time period. So these are people who
6 would be essentially outside of the radiation
7 areas; i.e., at that time the plutonium areas
8 at Rocky Flats.

9 **MR. LANGSTED:** That was enriched uranium that
10 was moved.

11 **DR. ULSH:** Ah, okay, thank you.

12 **MR. LANGSTED:** (Unintelligible) uranium
13 operations continued.

14 **DR. ULSH:** Okay. Thank you for the
15 clarification, Jim. Can you add to what I've
16 said, Jim, or...

17 **MR. LANGSTED:** No, you're right. We've seen a
18 situation in the -- in the 1969 period where
19 badges were not read. We also saw some
20 indication of a period around 1980 -- late
21 '80s, '86 or '89, I can't recall -- where some
22 of the quarterly badges were not processed
23 because of some manpower issues.

24 **MR. GRIFFON:** Just to cla-- just to clarify
25 that, Brant, 'cause -- I -- I got a different

1 thing from what Jim just said than what you
2 said. '69 -- I thought -- previously we'd
3 discussed this and I thought it was due to
4 other priorities or manpower issues resulting
5 from a fire that they -- they put these ones on
6 the sideline for the meantime and didn't read
7 them?

8 **DR. ULSH:** It was prior to the fire, Mark.

9 **MR. GRIFFON:** It was prior to the fire?

10 **DR. ULSH:** They made this decision prior to the
11 fire --

12 **MR. GRIFFON:** Right. But -- but --

13 **DR. ULSH:** -- so it's not related to the fire.

14 **MR. GRIFFON:** -- but it did -- it doesn't sound
15 like Jim's saying that the -- the policy
16 started in '69 and continued throughout.

17 **DR. ULSH:** I -- Jim, do we have some idea how
18 long that might have continued? I know it --
19 the decision was made in '69. I don't know...

20 **MR. LANGSTED:** No, we don't have anything that
21 indicates a formal policy, when it was
22 implemented and when it was rescinded. It's
23 just these cases that we have discovered or
24 mentioned in the -- the -- what the highlights
25 -- the weekly highlights of -- of this

1 situation, but we don't have that pinned down
2 exactly.

3 **MR. GRIFFON:** Well, that -- that's a real X
4 factor, you know. I mean that's a --

5 **DR. MAKHIJANI:** What weekly highlights?

6 **MR. LANGSTED:** Let me point out, though, that
7 if there was a case where there was a gap like
8 this, the dose reconstruction process would use
9 the -- their methods of -- of either before or
10 after, or the coworker data to fill in those
11 gaps.

12 **MR. GRIFFON:** Sure, sure, we understand that,
13 but when you have five to ten-year gaps, you
14 know, it's -- it's a -- interesting how -- I
15 mean it's a question about the extrapolation
16 methods, too, but I'm -- I'm just trying to
17 understand who was monitored. It's getting
18 harder and harder.

19 **MR. CHEW:** Right, this is Mel. I'd like to
20 make a comment. When SC&A -- if you folks go
21 back and redo -- and review some additional
22 cases here, bear in mind I'm just going to give
23 you a scenario. When we were developing OTIB-
24 52 to look at construction workers, who they
25 worked for, we came across several of these

1 kinds of situation. I'm going to give you an
2 electrician who came into the plant who worked
3 for an outside contractor and -- and he may be
4 doing some things on the site that did not
5 require him to be badged. But he can also be
6 asked to go into radiological area. For that
7 particular time he would be badged. But at the
8 same time, the M&O contractor had to have their
9 captive construction workers that they had to
10 use for maintenance as part of their M&O
11 responsibilities. That person could be -- also
12 be hired to work for that M&O for a short
13 period of time. Any reduction in force, he
14 might have been laid off and then he can come
15 back through as a construction -- con--
16 electrician or construction worker with the
17 subcontractor. So it is a fairly complex
18 scenario. Okay? So I just make sure you --
19 caution you you don't fall into that trap.
20 Just because he may be working for the M&O and
21 that he was not necessarily in the radiological
22 area, there -- he would not have been
23 monitored. Okay? So that does not necessarily
24 mean the data was missing and --

25 **UNIDENTIFIED:** Yeah, there --

1 **MR. CHEW:** -- so there's a complex
2 (unintelligible).

3 **DR. MAURO:** I noticed that in terms of coming
4 to concilience (sic) amongst us, agreement,
5 it's almost like a threshold of when are we
6 convinced. And I can see we're -- we're not in
7 the same place. It's important to recognize
8 the reason why we -- sometimes we don't come to
9 the same place. I'll give you an example.
10 You may -- you may look at the facts of the
11 matter and say okay, we see a -- a number of
12 holes, and we'll call them a hole. But you
13 will say knowing the -- how they're go-- sets
14 for what the practices were at that time, what
15 kinds of things they did, how they thought
16 about things -- perfect example is this -- the
17 classic one where the -- you folks operate from
18 the premise that the people were monitored
19 because they were the ones that have the
20 highest exposures. And of course on our side
21 of the house, we say well, hold the presses,
22 (unintelligible) cohort sampling. I think one
23 -- and I think it's important to recognize the
24 barriers for us to get ov-- to get by. We
25 have, I think -- though a good health physicist

1 could probably find a lot of good reasons why a
2 certain thing did not happen, or why this
3 particular strategy is probably reasonable, I
4 would have to say from our side we -- we hold
5 ourselves a little tighter. In other words --
6 okay, if you're going to say that the people
7 that were monitored were all the upper end,
8 that's got to be almost bulletproof, in other
9 words, because it's so important. In other
10 words, if you're building a coworker model and
11 you're saying okay, we have a coworker model
12 and we're going to say -- we're going to say
13 this group of people can be applied to that
14 group of people and we'll use the full
15 distribution. And the reason you feel the full
16 distribution is reasonable is because, in your
17 judgment, the people that weren't monitored
18 weren't monitored probably because they weren't
19 exposed. And of course -- I'm just using this
20 as an example because we keep running into
21 this. So where -- so the one place -- another
22 thing is -- and I guess important -- I call
23 these meta-issues -- that when we engage this,
24 whether it's the facts of the matter or what is
25 the best way to build the coworker model and

1 can you build a coworker model, our inclination
2 is going to be to -- to raise the bar a little
3 bit in terms of really putting the test hard.
4 Even though there are really good, plausible
5 reasons that you might be able to raise that
6 says well, I think at that time they used to do
7 this, we're going to come in here and say wait
8 a -- we need a little bit more than that, and
9 then -- whether we are the ones to investigate
10 it further, but it's important to recognize
11 where we're going to get to the point where
12 we're going to miss each other. So rec-- so I
13 guess in the pro-- we're about to enter a
14 process, and it has to do with a set of data.
15 Let's say the first step is going to be coming
16 up with some design criteria for sampling an
17 appropriate number and then interpreting what
18 that means. I think that as we move through
19 that process and get the facts down, your
20 interpretation of what a hole means and our
21 interpretation of what the hole means might be
22 different, and I think we have to be prepared
23 to -- to -- to realize that's going to --
24 that's going to happen and we're going to have
25 to work through that. And then once we get by

1 that and we get to the coworker model, your
2 interpretation of what is a robust coworker
3 model and what we might interpret as being a
4 robust coworker model might bear -- might be --
5 have a degree of difference. So I'm -- I'm
6 just sort of preparing ourselves for the -- for
7 the -- for the arena, you know.

8 **DR. ULSH:** Before Jim jumps in I want to
9 comment on a couple of things here that are
10 making me uneasy about what you said. You're
11 saying that -- okay. You represented our
12 position as being we can build a coworker model
13 because we think that the highest people were
14 sampled. Not exactly. The only way that
15 cohort sampling or sampling less than 100
16 percent of the people does not work -- it
17 doesn't have to be the highest people. It can
18 be a representative sample. It can be, you
19 know, cohort sampling. The only way it doesn't
20 work is if you purposefully, or through
21 negligence or whatever, sampled the lowest
22 people.

23 **DR. MAURO:** Uh-huh.

24 **DR. ULSH:** And we see no evidence of that.
25 That's just counter-intuitive. And so I -- and

1 we've also talked to site experts employed at
2 the time, and of course their sampling
3 procedure was to sample -- was to monitor the
4 people who they thought had an exposure
5 potential.

6 Now it doesn't mean that they were successful
7 100 percent of the time, there was probably
8 someone -- and that's why we picked the 95th
9 percentile, to ensure that we capture those
10 people.

11 **DR. MAURO:** Uh-huh.

12 **DR. ULSH:** So I don't want to buy into --

13 **DR. MAURO:** Okay.

14 **DR. ULSH:** -- that argument of the coworker
15 model. Now --

16 **DR. MAURO:** Okay, so -- I mean then there is a
17 gen-- I mean there -- we did notice on a number
18 of occasions -- and again we're sort of moving
19 off the specifics, but -- that was not -- we'd
20 -- we'd always see it implemented in the same
21 way. I guess -- and what I'm hearing is
22 there's agreement, though, that the idea of the
23 95th percentile is -- is -- is a strategy that
24 would be employed under certain circumstances.

25 **DR. NETON:** It certainly would be negotiable

1 under the SEC process. I mean that's what
2 we're doing. The fall-back position using the
3 95th percentile is the -- is doable. I mean if
4 you can buy into the fact that a coworker model
5 can be constructed. That's what I guess --
6 I've been out of the loop here for a while so I
7 just want to ask a general question. Maybe you
8 guys have gone beyond this, but it sounds to me
9 like right now there is a search going through
10 the case by case files to demonstrate that
11 there is a complete dataset --

12 **DR. ULSH:** That's --

13 **DR. NETON:** -- and anything less than
14 completeness raises big issues in your guy's
15 minds. I mean that's what I'm seeing, that
16 there's 40 percent missing here and so that
17 casts doubt on our ability to reconstruct
18 solely based on the DOE submissions. That's
19 what you're saying. Right?

20 **DR. MAKHIJANI:** No, no, no.

21 **DR. NETON:** That seems to be where you're
22 heading. Maybe I missed it here.

23 **DR. MAKHIJANI:** The -- the -- I think -- I
24 think Mark kind of laid -- laid this out is
25 that initially we went through some steps where

1 we believed certain databases were complete,
2 and then we thought that the -- at Rocky Flats
3 that the original DOE data would be complete.
4 Now the purpose of -- now, you know, in our
5 work procedures the word "completeness" occurs
6 a number of times. The Board said when you're
7 looking at SEC petitions, you should examine
8 completeness of external data. So it's just --
9 first of all, it's a question of following our
10 own procedures that the Board had mandated us
11 to follow and that we're charged with examining
12 the completeness of data.

13 Now when you find 40 percent data gaps or, you
14 know, 11 years out of 23 or six years out of 11
15 or whatever, it raises a question in our minds.
16 I mean where -- where I am is I haven't -- the
17 data don't appear to be complete in many cases,
18 for one reason or another. At that point I
19 think John -- John stated our position in a
20 way. Then the question is can you build a
21 coworker model, and I don't think we -- we've
22 come to any judgment about that.

23 **DR. ULSH:** You know, we're going to have to
24 (unintelligible) --

25 **DR. NETON:** Well, that's -- that's where I'm

1 heading, though. I mean rather than going down
2 this path of -- of looking at the exact nature
3 of the completeness of the data, you've already
4 demonstrated I think that there are gaps here.
5 Now whether you call it missing data or gaps --
6 see what I'm saying? We -- we'll accept the
7 fact that there are data that need to be
8 reconstructed in some way, shape or form here.
9 It seems to be obvious to me that there are
10 going to be cases where data need to be filled
11 in. And our approach heretofore has always
12 been a coworker model. Now if there's issues
13 with the coworker model, it seems to me that's
14 where the effort needs to be --

15 **MR. GRIFFON:** This is why I was drawing the
16 circle before to you, Jim. But there were --

17 **DR. NETON:** Well, right, but --

18 **MR. GRIFFON:** -- I think -- I think we're going
19 full circle because --

20 **DR. MAURO:** But it's okay, we (unintelligible).

21 **MR. GRIFFON:** -- our answers to -- to the
22 coworker model was, you know, we've got some
23 concerns here. Well, don't worry, we don't use
24 it.

25 **DR. NETON:** Well --

1 **MR. GRIFFON:** But then we've got concerns with
2 the database. Well, yeah, we agree with it,
3 but we don't use it --

4 **DR. NETON:** Okay, and that's where I think the
5 issue lies --

6 **MR. GRIFFON:** -- so now we're looking at the
7 individual rad files and -- and we're saying
8 there's gaps here, but we're going to use the
9 coworker model. I feel like I'm going full
10 circle, you know.

11 **DR. ULSH:** We said this in the evaluation
12 report.

13 **MS. MUNN:** No.

14 **DR. ULSH:** This is noth-- we have not changed
15 our story. This is all in our evaluation
16 report, and we have to keep repeating it and
17 repeating it. And so -- I mean we -- we
18 acknowledged, we discussed the limitations of
19 the HIS-20 database in -- all the way back in
20 our evaluation report in April.

21 **MR. GRIFFON:** Okay.

22 **DR. ULSH:** And so this is not new. It's not
23 like you've -- we've -- we're peeling the onion
24 and discovering formerly undiscovered problems.

25 **MR. GRIFFON:** Well, this -- this Donna Kragle

1 memo's new I mean, though.

2 **DR. ULSH:** Well, yeah, it's --

3 **MR. GRIFFON:** It's more detailed on the
4 differences --

5 **DR. ULSH:** Sure, as you've --

6 **MR. GRIFFON:** -- between the databases --

7 **DR. ULSH:** That particular question is being
8 investigated.

9 **MR. GRIFFON:** -- yeah. I mean I'm not trying
10 to -- I'm not saying we're all not working in
11 good faith here, but I'm just saying --

12 **DR. NETON:** But it seems to me that the
13 coworker model's where -- I don't -- I mean you
14 guys can certainly do whatever you feel fit,
15 but the coworker model is where the emphasis
16 needs to be at this point because you've
17 already demonstrated -- we acknowledge that
18 there are issues with -- no database is
19 perfect, and in a case of can you, given the
20 data you have, is that coworker model
21 sufficiently robust to fill in gaps. I mean we
22 had sites at Y-12, for example, where we have
23 no monitoring data on workers, and we've
24 developed a coworker model that was workable.
25 And so until you get to the point where you can

1 say that you have no workable coworker model,
2 then I don't -- the data gaps are almost a
3 secondary issue.

4 **DR. MAURO:** We were very fortunate. We
5 understood what the gaps were on Y-12. We knew
6 where they were.

7 **DR. NETON:** Yeah.

8 **DR. MAURO:** They were cleanly defined, there
9 was no disagreement. I think we're still in
10 the stage where we're not in full agreement on
11 what the extent of the -- of the gaps are.

12 **MR. GRIFFON:** The -- the other -- the other
13 factor here, Jim, is that, you know, one of the
14 strong allegations in the petition was this
15 question of -- of data credibility and no data
16 available, several --

17 **DR. NETON:** Yeah.

18 **MR. GRIFFON:** -- statements to that effect.
19 That's the other reason we went down that
20 avenue more strongly than at Y-12 where it
21 wasn't in --

22 **MR. FITZGERALD:** I think as a clarification
23 because I think --

24 **MR. GRIFFON:** Yeah.

25 **MR. FITZGERALD:** -- as you opened your

1 conversation a little earlier, if these people
2 were not monitored then they wouldn't fall into
3 this, and I think we're -- we're picking up
4 everything and we're not being able to discern
5 which ones are just simply not monitored --

6 **DR. NETON:** Exactly, I --

7 **MR. FITZGERALD:** -- versus those who --

8 **DR. NETON:** -- think for issues of clarity, one
9 needs to go back and, like Brant did, and say
10 we acknowledge there's these gaps. We don't
11 feel them to be --

12 **DR. ULSH:** Right, yeah, you already took the --

13 **DR. NETON:** -- super critical issues because --

14 **DR. ULSH:** Right, you all took the first step.
15 You identified the periods of no monitoring.

16 **MR. FITZGERALD:** Right.

17 **DR. ULSH:** We then took the next step and went
18 back and said why is there no monitoring here.
19 We found that these were people in low exposure
20 potential jobs and --

21 **MR. FITZGERALD:** Right.

22 **DR. ULSH:** -- of course the next step is for
23 you to look at what we've written.

24 **DR. NETON:** But there are gaps there that have
25 to be reconstructed (unintelligible) --

1 **DR. MAURO:** But see, once we know the gaps --

2 **MR. FITZGERALD:** Right.

3 **DR. MAURO:** -- and we agree on the gaps, then
4 we're where you are. We're not -- we're not
5 quite there yet, though. And that's where we
6 want to get, by the way. That's what our
7 target should be, to get to the point --

8 **DR. NETON:** Okay, that's fair.

9 **DR. MAURO:** -- where we're talking about the
10 coworker model.

11 **DR. MAKHIJANI:** I'd like to follow up on what
12 Mark just said, maybe seek some guidance from
13 the working group, is in -- it -- you know, the
14 -- the -- we -- we -- part of -- one of our
15 starting points with -- with this whole data
16 reliability thing was the affidavits, and Mr.
17 Gibson's often raised the question of -- you
18 know, the question of affidavits and when do
19 you say they're good and not good and when do
20 you believe someone and not believe someone.
21 The -- the -- the affidavits do talk about data
22 gaps and data not being entered in the records.
23 And what's just been said is that it was a
24 decision at some point not to read some badges,
25 but it's not well-documented. It does -- it

1 does raise the question of whether these data
2 gaps corroborate the affidavits or not. I mean
3 I haven't at this time a judgment about whether
4 they actually corroborate or not, but certainly
5 they do -- they do lend some evidence to those
6 affidavits that they are -- from what I've
7 heard just now is that there are -- the gaps
8 were partly because it was -- now maybe it was
9 a technically-justified position, somebody had
10 a low exposure potential so their badge wasn't
11 read, but it may not look that way from the
12 point of view of the employee or the
13 petitioner.

14 **DR. ULSH:** Well, I think that's what we
15 concluded when we did our -- I don't know, 70
16 or whatever page review of all of the public
17 comments and all of the affidavits in the SEC
18 petition. There were several specific issues
19 raised, the "no data available," the blackened
20 film badges -- I'm just trying to remind you of
21 where -- the ground that we've already trod
22 here. And we ran every one of those down to
23 ground.

24 Now I'm not particularly interested in whatever
25 the motivations were in making those affidavits

1 -- could have been a misunderstanding, could
2 have been who knows what. But we ran them to
3 ground and we simply didn't find a smoking gun
4 here of the things that we were being -- the
5 things that we heard in terms of well, when my
6 badge was high they just threw it out, or there
7 was some kind of monkey business going on with
8 the records. We just didn't see that. So --
9 and you know, there were several specifics that
10 were brought up that we did run to ground,
11 so...

12 **MR. GRIFFON:** We did a lot of work in -- on the
13 ground, yeah. I mean what -- what we haven't
14 answered is the systemic question still, and I
15 think we -- I mean I think we're close. I --
16 I'm not -- I think we need maybe a larger
17 sample on this issue from SC&A, and then an
18 iterative process between SC&A and NIOSH to
19 make sure we know are these people -- before we
20 come back with a report saying we have all
21 these data gaps. I don't want a response back
22 to say well, of course they weren't monitored,
23 they weren't required to be monitored, they
24 were a sub, you know. So we -- we maybe need
25 to, you know, randomly select some more, and I

1 would -- and I -- like Arjun said, dozens --
2 you know, a couple dozen, hopefully --

3 **DR. ULSH:** Okay. Well, then I --

4 **MR. GRIFFON:** -- not more than that. And then
5 -- and then have you give us --

6 **DR. MAKHIJANI:** (Unintelligible) dozen in each
7 category.

8 **MR. GRIFFON:** Yeah.

9 **DR. MAKHIJANI:** I think -- I think when you --
10 when you start layering it, it's complicated
11 because --

12 **DR. ULSH:** Now in the past -- Mark, I think you
13 mentioned at the beginning that, you know,
14 we've talked about doing something at the
15 outset and thinking it would be fairly simple
16 to do, and it's turned into a monster.

17 **MR. GRIFFON:** Uh-huh.

18 **DR. ULSH:** I want to put on the table to you, I
19 just want you to be clear about what this is
20 going to take, what you're talking about. I
21 don't know how much time was spent on the SC&A
22 side reviewing these dozen cases. On our side,
23 I had about five people working on this from
24 the time we got the case list until I put it
25 out on Wednesday, so we're talking about -- to

1 go into the level of detail that you have to go
2 into to get a reliable answer, you're not
3 talking about a trivial commitment of
4 resources. I'm not saying that you should or
5 shouldn't do it. That's for the working group
6 to decide. But understand that you're talking
7 about a significant effort here.

8 **MR. GRIFFON:** Right.

9 **MR. CHEW:** And you said for each category?
10 Would you define (unintelligible) saying that?

11 **DR. MAKHIJANI:** You know, I'd have to talk to
12 Harry about it. I haven't had even a chance to
13 study his, you know, draft. But he did tell me
14 -- I did ask him explicitly is -- you know, we
15 treated the whole database as one homogenous
16 thing and just went in and -- as Joe said, we
17 did a kind of a reconnaissance. We said let's
18 see what we -- you know, whether there's
19 anything to worry about. And he -- he -- he
20 did say that if you have changes in protocols,
21 then you need to -- then you need to examine
22 each set. Now it could be that one worker --
23 you'd -- you wouldn't have to examine that many
24 files 'cause how many people would have worked
25 from the '50s to the '90s, you could just split

1 up their individual -- individual record into
2 those periods and see how the monitoring went.
3 But you'd still have to go through that
4 exercise.

5 **MR. CHEW:** Do you think your conclusions after
6 reviewing some additional ones will be much
7 different than what you have and where we
8 should spend the energy on what Jim was saying,
9 we need to fill in -- we know there's going to
10 be gaps. I've already -- gave you some --
11 several scenarios that we know they're going to
12 be there, and so the real key issue is is the
13 coworker data -- information and the study
14 sufficient to fill those gaps.

15 **DR. MAURO:** You've got to understand the gaps,
16 though, --

17 **MR. GRIFFON:** Maybe I'm -- maybe I'm -- maybe
18 I'm at a loss here, but I -- and maybe it's
19 more in the evaluation report, you know, I
20 should have paid more attention to the detail
21 in there, but I don't remember our -- our
22 discussions talking about a lot of data gaps in
23 the individual rad files. I remember those as
24 being presented as --

25 **DR. MAURO:** I know.

1 **MR. GRIFFON:** -- this -- this -- this was the
2 safety net. Every time we raised issues on
3 coworker models and databases, that was the
4 safety net dropped to me. Well, Mark, don't
5 worry about it. Two out of 1,100 are going to
6 rely on coworker models.

7 **UNIDENTIFIED:** That's true.

8 **MR. GRIFFON:** These are a non-issue. Why are
9 you going down this path?

10 **DR. MAURO:** This is a big -- this is a big step
11 (unintelligible) --

12 **MR. GRIFFON:** So -- so I'm not -- I don't think
13 this is a waste of effort. I mean I -- I --

14 **DR. ULSH:** I'm not saying it's a wasted effort,
15 Mark. I'm just saying that you're just seeing
16 this as --

17 **MR. GRIFFON:** I certainly want to make it as
18 expediti-- you know, as expedient as possible.

19 **MR. FITZGERALD:** Maybe the -- maybe the
20 sampling plan itself should be somewhat, you
21 know, iterative in the --

22 **MR. GRIFFON:** Right.

23 **MR. FITZGERALD:** -- sense that -- that you see
24 it before it's accepted and, you know,
25 proposed. I mean it's sort of a -- you know,

1 here's what we think would be reasonable; what
2 do you think, and is this going to be a
3 resource pro-- I mean just go back and forth
4 until there's some agreement.

5 **DR. ULSH:** Well, again, I want to go back to --
6 if you look through our responses, we didn't
7 find a single instance where we concluded that
8 someone should have been monitored and was not
9 monitored. And I don't -- SC&A has said that
10 these are randomly sampled. Maybe they are. I
11 don't know how you made a sampling. But --

12 **MR. GRIFFON:** So this -- this --

13 **DR. ULSH:** -- five of the cases were in the --
14 on the Task IV list.

15 **MR. GRIFFON:** I mean we can't -- we really
16 can't get into the specifics, but this primary
17 -- this --

18 **DR. MAKHIJANI:** Not -- that was not --

19 **MR. GRIFFON:** -- primary -- excuse me, Arjun --

20 **DR. MAKHIJANI:** I'm sorry.

21 **MR. GRIFFON:** -- this primary contractor's
22 secretary, according to everything I've heard
23 from Jim, should have been in the monitoring
24 program. I don't know what your conclusion
25 your -- I mean I -- I've tried to stay away

1 from each case by case 'cause we haven't had a
2 chance to review them, but is that -- I mean is
3 that still -- your position now is that well,
4 they should have been monitored but they might
5 not have read that badge because she was in a
6 low risk -- I mean that's different than saying
7 monitored versus not monitored, you know.

8 **DR. ULSH:** In every case that we --

9 **MR. GRIFFON:** There's always a hypothetical
10 explanation to these. I mean that --that --

11 **DR. NETON:** Yeah, but you've got to look at how
12 we handle the dose reconstruction. You've got
13 to think of it from the SEC perspective.

14 **MR. GRIFFON:** I am.

15 **DR. NETON:** If you've got a -- if you've got a
16 coworker model, and I keep going back to the
17 coworker model, this particular person would
18 probably end up receiving the 50 percentile
19 distribution of the coworker model for all 11
20 years or whatever it was.

21 **MS. MUNN:** Yeah.

22 **DR. NETON:** So I think -- I think most of us
23 would agree that that's probably a very
24 reasonable approximation for an upper estimate
25 -- a bounding estimate of her dose. And if not

1 -- and if you find a chemical operator who
2 wasn't monitored for 11 years, they'd receive
3 the 95th percentile of the dose. So can we
4 really do these dose reconstructions is the
5 question and that all, to me, comes back to do
6 you have a valid coworker model to fill in --

7 **DR. ULSH:** Right.

8 **DR. NETON:** -- gaps for a --

9 **MR. GRIFFON:** I mean how --

10 **DR. NETON:** -- secretary who --

11 **MR. GRIFFON:** -- how do you --

12 **DR. NETON:** -- has no monitoring data.

13 **MR. GRIFFON:** -- get to this -- this answer is
14 -- if you have workers that are in higher risk
15 areas that have gaps like this, then I --

16 **DR. NETON:** They would receive 95th percentile
17 doses of the coworker model.

18 **MR. GRIFFON:** Then you give 95th percentiles of
19 -- of a -- and then you -- and th--

20 **DR. NETON:** Right.

21 **MR. GRIFFON:** -- so then you're back to this
22 coworker model, which we have --

23 **DR. NETON:** That's what I'm saying. All the
24 meat and potatoes here in the SEC world, in my
25 mind, is in a valid coworker model.

1 **MR. GRIFFON:** But if -- if -- yeah.

2 **DR. NETON:** And that fleshes out were the right
3 people monitored, were they preferentially --
4 the low ones monitored, were they cohort
5 monitored, were they -- only the highest
6 persons monitored, you know, that needs to be
7 fleshed out and discussed, but --

8 **MR. GRIFFON:** Well, I doubt we find this, but
9 if you do find the case of -- you know, it's
10 not only a matter of -- if you do a small
11 sample and find that you have several operators
12 in -- with large data gaps, it -- it -- it
13 lends credence to these claims by the
14 petitioners that, you know, wait a second, I
15 was in high areas and I had no data available,
16 this kind of notion --

17 **DR. NETON:** Well, as Brant said, that --

18 **MR. GRIFFON:** -- aside from the specific claims
19 that you've tracked down, which you have
20 tracked dow-- I agree, but --

21 **DR. NETON:** I don't how many -- if you find a
22 couple, you know --

23 **DR. ULSH:** If you decide --

24 **DR. NETON:** Databases are going to have gaps.

25 **MR. GRIFFON:** If it's truly random -- I mean

1 this has got to be random sampling, you know.

2 That's why I'm saying --

3 **DR. ULSH:** If you dec--

4 **MR. GRIFFON:** -- present a sampling plan.

5 **DR. NETON:** Well, that's a different issue if
6 you're trying to track down the allegations
7 made by the petitioners, that's a different --

8 **MR. GRIFFON:** Yeah, that's part of -- that's
9 part of this process.

10 **DR. NETON:** I understand, but --

11 **MR. GRIFFON:** Yeah.

12 **DR. NETON:** -- but not in the context of what
13 we've been discussing here, I don't think.

14 **MR. GRIFFON:** Oh, okay.

15 **DR. ULSH:** Now if you decide --

16 **MR. GRIFFON:** It -- it kind of -- in my mind
17 it's kind of overlapping a little, but --

18 **DR. NETON:** I think you've got to segregate
19 them a little bit, otherwise you're going in
20 these circles.

21 **DR. ULSH:** I'm putting this out on the table,
22 if you decide to --

23 **MR. GRIFFON:** Well, we've be-- we're in a
24 circle.

25 **DR. ULSH:** If you decide to go down this path

1 where we look at even more of these cases like
2 the -- beyond a dozen, I mean I -- and I
3 caution you that that's not a trivial thing to
4 do, but if we do, maybe we should focus on
5 people who we know should be monitored --
6 process operators. I think we would all agree
7 that process operators should be monitored, or
8 -- you know, maybe there's other particular
9 criteria.

10 **DR. MAURO:** You're building design objectives
11 now --

12 **DR. NETON:** Construction trades or --

13 **DR. MAURO:** -- in the sampling. I mean that's
14 what you're talking about. Let's -- let's
15 agree on design objectives for what is it we're
16 going to do.

17 **DR. ULSH:** Well, first of all let's agree that
18 you want to pursue beyond the dozen.

19 **DR. MAURO:** I'm always afraid to bring this up.

20 **DR. ULSH:** That didn't stop you before, though,
21 did it? It has never stopped you before, John.

22 **DR. MAURO:** Well, what I'm hearing --

23 **MR. GRIFFON:** I was -- I was going to offer
24 what if -- what if -- and I've offered this
25 before, quite frankly. It's in a prior action.

1 But what if SC&A drafted a sample plan and --
2 and we had a dis-- you know, and it doesn't
3 have to be in a workgroup meeting, but it can
4 be done through e-mail, I would hope. It's not
5 going to be a privacy issue or anything like
6 that. Draft a sample plan and -- and say
7 here's what we want, here's the types of -- you
8 know, this is our approach and this is how many
9 cases, this is the type, that sort of thing so
10 there's no -- you know, there's no mystery,
11 there's no question of SC&A cherry-picking
12 cases. You know, it's out -- it's out -- it's
13 out there before we start the process.

14 **MR. FITZGERALD:** Just off what Brant was
15 saying, I -- I see it as almost confirmatory of
16 these categories that I think we want to be
17 sure about, meaning that the process operators,
18 there'd be a sampling that says okay, we would
19 expect to have a pretty complete file on them;
20 and hopefully those results would come back
21 accordingly. I'd like to pin down a little
22 better if in fact we have allowed this large
23 group that we weren't aware of which are
24 contractors who were only intermittently
25 monitored. Maybe we could confirm that. And

1 then this -- this question of people who you
2 would think, with the integral badging that was
3 alluded to, would have been monitored because
4 they were inside the fence line.

5 **MR. GRIFFON:** Yeah.

6 **MR. FITZGERALD:** It turns out that's a category
7 where they may or may not have been and, you
8 know, (unintelligible) anomaly, it would help.
9 But I -- you know, it -- just confirmatory from
10 the standpoint of not exhaustively but just
11 confirmatory so we can go to this next step
12 'cause I think that's where we need to be and
13 we shouldn't expend an inordinate amount of
14 resources just to -- but just beyond this sort
15 of reconnaissance, which I like to use that
16 word 'cause that's what it was, a
17 reconnaissance sampling that we did, so we have
18 a little bit more surety when we go to this
19 next step. And that -- that's sort of a
20 halfway house to get to this next step and not
21 some exhaustive, endless, trying to pin this
22 thing down through many, many cases. But now
23 that we're aware of these categories I think it
24 would be helpful to confirm that yeah, okay, if
25 we look at production workers, we don't see any

1 gaps. We look at these construction workers,
2 yeah -- actually you do see a lot of gaps, so
3 you're -- you're going to expect to see gaps
4 there and how do you treat those. They were
5 unmonitored. You wouldn't even go to a
6 coworker model. They were only monitored for
7 short times. So I -- I think that would put
8 that behind us.

9 **MR. GRIFFON:** Lar-- Larry's going to...

10 **MR. ELLIOTT:** I would like to make a proposal
11 that I hope will save everybody a lot of work
12 and get the answers that you're all seeking as
13 quickly as we can. I -- I think it makes sense
14 for you all to have the access you want to the
15 Rocky Flats claims. If you're familiar enough
16 with the NOCTS database system, you know that
17 you can go to the top menu bar and pull up a
18 DOE site. And when you do that, it gives you
19 all the claims for -- that have come in for
20 that site.

21 **MR. GRIFFON:** Right.

22 **MR. ELLIOTT:** Okay? We can accommodate whoever
23 wants to go in and look at NOCTS by opening up
24 on your own -- whatever your e-mail -- however
25 they -- the IT folks do this, but it would be

1 limited to those folks who want to go do this.
2 Okay? And we know that in advance. We'd open
3 the portal back up for you to get into it, and
4 then you can go in and look at any one of those
5 cases that you wanted to pick, any one of the
6 cases Brant wants to pick. Then I suggest you
7 compare or you share the numbers that you
8 looked at and what your findings are so --

9 **MR. GRIFFON:** Right.

10 **MR. ELLIOTT:** -- that you could each work off
11 of that. Forget the sampling strategy. Go
12 after the ones you want. Go after the layers
13 that you want. Okay? And look at every case
14 that you want, that you have -- that you
15 allocate your time -- time for, and do it
16 thataway. I can facilitate that. Is that --
17 does that seem like a reasonable --

18 **MR. GRIFFON:** Yeah, yeah, yeah, I would --

19 **MR. ELLIOTT:** -- approach?

20 **MR. GRIFFON:** -- yeah, except for -- I mean --
21 I appreciate the forgetting the sampling stra--
22 I was just trying to -- the only reason for
23 sampling strategy was to try to minimize the
24 numbers, but --

25 **MR. ELLIOTT:** That's fine.

1 **MR. GRIFFON:** -- also reach our goals as far as
2 the coverage, so I was trying to keep the
3 number of cases down, I --

4 **MR. ELLIOTT:** Well, in 1977 NIOSH published a
5 sampling strategies manual that I'd recommend
6 you all check -- take a look at. The
7 industrial hygienists of the world -- we use
8 that when we go out and we do --

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

10 **MR. ELLIOTT:** -- cohort sampling to try to
11 identify that we've sampled the worst exposed
12 individual, and it takes 19 or less, no matter
13 what your N is. So --

14 **MR. GRIFFON:** Right, that's what I mean, it
15 doesn't need to be a large population.

16 **MR. ELLIOTT:** I'm more concerned about --

17 **MR. GRIFFON:** (Unintelligible) have different
18 categor-- but anyway, go ahead.

19 **MR. ELLIOTT:** Right now I'm more concerned
20 about what happens next, and that's when you
21 report out what you've found. Okay? And to
22 report out what you've found is going to
23 require a Privacy Act review and reduction, and
24 we can't do tha-- I can't do that myself. You
25 and SC&A can't do it --

1 **MR. GRIFFON:** Right.

2 **MR. ELLIOTT:** -- yourself, the Board can't do
3 it. We have to run that through OGC to the
4 Privacy Act officer and get that reviewed.
5 That's going to take more time than you can
6 imagine. Okay? But it's for a good purpose.

7 **MR. GRIFFON:** How -- how long gen--

8 **MR. ELLIOTT:** Depends on the volume.

9 **MR. GRIFFON:** Can you guesstimate? Is it --

10 **MR. ELLIOTT:** Emily?

11 **MR. GRIFFON:** -- yeah, depends on the volume,
12 right?

13 **MS. HOWELL:** It just depends.

14 **MR. FITZGERALD:** We can have -- we can have the
15 interchange --

16 **MR. GRIFFON:** But a report -- a matrix, say
17 this size, but --

18 **MR. ELLIOTT:** You can have the interchange, but
19 when you come to the point of --

20 **MR. GRIFFON:** Right.

21 **MR. ELLIOTT:** -- saying here's our document --

22 **MR. GRIFFON:** Right.

23 **MR. ELLIOTT:** -- for public view --

24 **MR. GRIFFON:** Right.

25 **MR. ELLIOTT:** -- it has to be --

1 **MR. GRIFFON:** It's got to be reviewed, sure.

2 **MR. FITZGERALD:** We can still move to the next
3 step.

4 **MR. PRESLEY:** Larry --

5 **MR. GRIFFON:** We're -- we're all in agreement
6 there. We don't want to --

7 **MR. PRESLEY:** -- what you're saying then is
8 that the working group and whoever it would be
9 from your organization would pick the two, the
10 three, the four, the five, so everybody gets
11 the same cases to work on and comes up with the
12 same --

13 **MR. ELLIOTT:** I'm saying that we would give you
14 -- whoever you identify as needing access for
15 this purpose, we would put their -- we would
16 enable their access back --

17 **MR. PRESLEY:** I understand that.

18 **MR. ELLIOTT:** -- through the same portal. Now
19 -- now if -- let's say John said Joe, I want
20 you to do it, I want Arjun to do it, but we're
21 going to leave Ron out of it this time, for
22 example, just -- I don't -- I'm not advocating
23 that, but --

24 **MR. GRIFFON:** You don't want to just give open
25 access --

1 **MR. ELLIOTT:** -- but Ron wouldn't be able to
2 get in.

3 **MR. GRIFFON:** Right.

4 **MR. ELLIOTT:** On my side, you know, Brant's
5 going to go in, but if -- if the Board --

6 **MR. GRIFFON:** That's fine.

7 **MR. ELLIOTT:** -- member is Mark and it's -- and
8 it's Wanda but not Bob, Bob can't get in.
9 Okay?

10 **MR. PRESLEY:** That's fine, but what -- what I'm
11 saying, though, they're going to work on the
12 same cases.

13 **MR. ELLIOTT:** I'm saying you're --

14 **MR. PRESLEY:** Mark's not going to pick his ten
15 and Brant's not going to pick a different ten
16 and --

17 **MR. ELLIOTT:** I think you can work that out
18 among yourselves. I'm saying that once you get
19 into the NOCTS, you can pull up the DOE site
20 off the menu bar, hit Rocky Flats, and it'll
21 list all the cases. And from there, you're --
22 you're focused in on Rocky cases and you can --
23 you can look at whatever you want. Now if you
24 guys say pick 19 each and then we'll match up,
25 I don't care how you do that, but --

1 **MR. FITZGERALD:** I like the notion of
2 iterative, 'cause I think what we would say is,
3 you know, here are cases that we think
4 illustrates maybe some of the issues we're
5 talking about. Brant, do you see the same
6 thing we're seeing; and either he agrees or he
7 may -- may say no, actually we think this can
8 be explained. Then you'd have that
9 conversation. I mean I think -- you want to
10 have the conversation going back and forth to
11 get on the same page rather than have this
12 serial because it would take forever. I -- I --
13 -- I think -- you know, once you would say well,
14 the reason this person was not monitored is
15 this reason, I think Arjun or Ron would --
16 would say oh, okay, fine, that gap's explained.
17 It's not really a gap, it's unmonitored. I
18 think that would cut through a lot of this
19 time, and that's what we're trying to get past
20 is the time.

21 **MR. GRIFFON:** And I would say the action for
22 the first crack at it is -- is SC&A's --

23 **MR. FITZGERALD:** Yeah, it'd be ours.

24 **MR. GRIFFON:** -- and then you --

25 **DR. NETON:** Sampling (unintelligible) --

1 **MR. GRIFFON:** Yeah, you throw your strategy and
2 the case numbers you selected based on that
3 strategy over to Brant, and he can say agree or
4 disag-- or you know, here's why it's in -- in
5 error. You know, you're not going to get what
6 you want because these cases don't fall into
7 those categories, or whatever, I guess. Right?

8 **MS. MUNN:** Mark, I'd like to suggest that the
9 working group make a decision with respect to
10 parameters here before we turn SC&A loose to do
11 that, because I don't want to see SC&A come up
12 with a plan that gives us 19 more cases --

13 **DR. NETON:** Right.

14 **MS. MUNN:** -- for everybody to look at. That
15 does not move us where we need to be, and
16 unless --

17 **MR. GRIFFON:** Why not -- wh-- why not?

18 **MS. MUNN:** Well, because it takes too much time
19 and, regardless of whether it's an iterative
20 process or not, it drives us down the same road
21 that we've been many times if we aren't very
22 precise about what we want and -- exactly what
23 we want from this as the end result here. And
24 if -- if the -- if the sets of individuals who
25 are looking at these data are not looking at

1 the same data with the same goal in mind, then
2 we are reinventing the wheel. And -- we're not
3 reinventing the wheel, we're making the wheel
4 bigger. And it's not incumbent upon us to do
5 that. It's -- it's -- it's holding up the
6 process.

7 **MR. GRIFFON:** I don-- I don't -- I don't -- I
8 guess I don't understand what you're -- would
9 see as the goals. I thought I -- I stated my
10 goals pretty clearly, that it's -- it's to look
11 only at this data completeness question in the
12 records --

13 **MS. MUNN:** But -- but the --

14 **MR. GRIFFON:** -- and that's it. Not -- not
15 methods used for the individual DR, none of
16 that.

17 **MS. MUNN:** No, no, the -- the --

18 **MR. GRIFFON:** Right? So --

19 **MS. MUNN:** The completeness issue is one of --
20 we've kno-- we all know it's not going to be
21 100 percent complete. Everybody agrees to
22 that. And how complete is complete enough is
23 something that has never been identified here -
24 - ever. We've never said how complete is
25 complete enough. And we've indeed left our

1 contractor with the unpleasant task of trying
2 to --

3 **MR. GRIFFON:** Well --

4 **MS. MUNN:** -- identify for themselves how
5 complete --

6 **MR. GRIFFON:** But I guess we --

7 **MS. MUNN:** -- is complete enough.

8 **MR. GRIFFON:** I guess -- you know, we're
9 working from the premise -- or at least I am --
10 that, you know, the -- the -- two cases
11 required coworker models, so apparently these -
12 - the other cases are complete enough not to
13 require coworker patches, if -- if -- if I can
14 use tha-- it's sort of Jim's suggestion that if
15 you've got gaps you can patch them with
16 coworker models. My impression was, at least
17 so far, that there were two -- maybe -- I may
18 be mistaken with the numbers, but --

19 **DR. ULSH:** Now let me -- let me caution you --

20 **MR. GRIFFON:** -- you know, all along we've been
21 led to believe that the coworker model was --
22 was not going to be largely required for this
23 population. So then the radiation files
24 themselves have to be at least complete enough
25 that you can rely on them, along, you know,

1 with job information and -- and their previous
2 and later dose, maybe you can extrapolate in
3 between, but that -- that's the construct we're
4 looking at this within, I think. You know,
5 that -- that -- I don't see that they've used
6 coworker models in -- at least in the cases
7 you've done so far, I don't think coworker
8 models have been used to patch gaps in
9 individual --

10 **DR. ULSH:** That's why --

11 **MR. GRIFFON:** -- DRs.

12 **DR. ULSH:** -- I wanted to put out a word of
13 caution, Mark.

14 **MR. GRIFFON:** Okay.

15 **DR. ULSH:** In the past when we talked --

16 **MR. GRIFFON:** Maybe I'm wrong.

17 **DR. ULSH:** Well, no, no --

18 **MR. GRIFFON:** Yeah.

19 **DR. ULSH:** -- but before we had those coworker
20 models, OTIB-38 and OTIB-58, I told you that
21 there were maybe two that had been set aside
22 because they needed coworker models.

23 **MR. GRIFFON:** Right.

24 **DR. ULSH:** Now that OTIB-58 and OTIB-38 have
25 come out, they are being used a bit more,

1 simply because they've become not the method of
2 first resort, but perhaps in a particular case
3 the most efficient way to process a case. In
4 other words, if we've got a -- a case that is
5 probably going to be a -- you know, a non-comp,
6 just apply the coworker methods and we're done.
7 So I -- but that's not the same thing as saying
8 we couldn't have done this case without the
9 coworker models. So I think since those
10 coworker models have been issued, we've been
11 making more use of them. So I just want to
12 caution you there so --

13 **MR. GRIFFON:** Okay. Well, that's a little
14 clarification for me. I didn't know that, so -
15 -

16 **DR. ULSH:** Yeah.

17 **MR. GRIFFON:** -- but you know, I guess that
18 would be my mind set is to look at these for
19 completeness, and I guess the goal would be to
20 -- you know, if we had a large fraction of
21 large da-- I guess, you know, if -- if we
22 looked at SC&A's report, without knowing some
23 of the details that we found out today that we
24 didn't previously know, you know, it was kind
25 of striking to me the number with the -- with

1 those large numbers of yours missing for
2 external dosimetry. You know, for bioassay you
3 can always -- you know, if you've got some
4 sampling there you can always do -- or for the
5 most part you can pretty much do something with
6 it. But you know, when you're missing large
7 chunks of external dosimetry and the -- the --
8 the written TBD states that, you know, everyone
9 should have been badged, so you -- you know,
10 based on the facts that we had them -- at that
11 time, anyway, you know, it -- it struck me as
12 this could be a fairly significant problem, you
13 know, so we need to -- you know, we need to at
14 least chase this down. Now you know, maybe --
15 so I would say we need to do the same thing,
16 but we don't want to run into the trap again --
17 that's all I'm saying for the iterative -- you
18 know, we need that sort of iterative process is
19 to avoid us -- or SC&A reporting back something
20 that -- that really can be explained simply by
21 the fact that, you know, these people were not
22 prime contractor employees or whatever, you
23 know. We -- we don't want to give conclusions
24 -- don't want to put drafts out there with
25 conclusions on them that suggest something that

1 really isn't consistent with the facts and --
2 you know.

3 **DR. ULSH:** Well, what do you think about the
4 idea as -- you know, of -- okay. The first
5 step in the iteration here is for SC&A to
6 propose some cases for review. Can we agree
7 that we should perhaps look at cases where we
8 know they should have been monitored? I'm just
9 thinking back to what you said, John, about how
10 we should come to an agreement about what the
11 facts are. And I don't want to get into a
12 situation where you say -- you say gee, this
13 person wasn't monitored, and then we say well,
14 yeah, they shouldn't have been monitored.
15 Let's pick some cases that we all agree should
16 have been monitored so that if we find a gap we
17 know what it means. Does that sound like a
18 reasonable idea?

19 **DR. MAKHIJANI:** Mark, I -- I have to say that --
20 - I tried to make a little list of the things
21 that are being said in terms of monitor--
22 external monitoring. And I have to say at this
23 stage I -- I'm confused, because I -- I do not
24 know how one can come up -- how I would work
25 with Harry to come up with a sampling plan

1 based on what has been put on the table and so
2 I'll just read my little list. I thought we
3 could do this because I thought -- it was '51
4 to '63 and '64 to 1990s. That's been the basis
5 -- you know, when we first did it and I
6 realized maybe we shouldn't be treating this as
7 one pool. But now we have '51 to '63, and --
8 and we don't know whether there are any
9 subcategories in that. But we have '64 to
10 early 1990s, which was supposed to be universal
11 badging, but maybe not -- universal badging now
12 only for contractor -- main -- prime
13 contractor, but maybe among those some were not
14 monitored. Those were --

15 **MR. GRIFFON:** Yeah, in that -- in that last
16 class --

17 **DR. MAKHIJANI:** I'm not clear.

18 **MR. GRIFFON:** That last class is the hardest
19 one on me because --

20 **DR. MAKHIJANI:** So there's a subcategory among
21 those --

22 **MR. GRIFFON:** Yeah.

23 **DR. MAKHIJANI:** -- of low exposure potential
24 who may not have been monitored. Then there
25 are subcontractors who were sometimes in rad

1 areas and sometimes not, and so were sometimes
2 monitored and sometimes not, but we don't have
3 easy -- a sorting process to determine who they
4 were 'cause that's in the -- in -- in the
5 Department of Labor it's all written out.
6 Okay. So that's a different category. And
7 then there are people who were badged but whose
8 badges were not read, but we don't have a clear
9 idea of how long -- when this policy really
10 started and how long --

11 **MR. GRIFFON:** Or if it was intermittent or what
12 it was, right.

13 **DR. MAKHIJANI:** Or if it was intermittent. So
14 now I think we have -- I -- I see this as a
15 very difficult problem even to explain to a
16 statistician because it's not amenable to a
17 statistician's answer because we've got a
18 technically very messy description of what --
19 what we're trying to sample. And I'm -- I'm
20 not clear on what we're trying to sample.

21 **MS. MUNN:** Now let me ask a question. If we
22 have a hypothetical claim of an individual who
23 has some dose recorded, but one of these
24 notorious gaps that we've been discussing --
25 one or more of these notorious gaps. This

1 individual files a claim. What is done insofar
2 as the gap period in assigning any dose to that
3 person? What happens?

4 **DR. NETON:** Well, most often he'll receive
5 coworker --

6 **MR. GRIFFON:** Well, we know they assume that
7 the dosimeters were lost --

8 **DR. NETON:** Well --

9 **MR. GRIFFON:** -- according to this procedure,
10 but then -- then I think there's a -- different
11 methods, depending on --

12 **DR. NETON:** Well, it would almost always be the
13 coworker model. I mean contrary --

14 **MR. GRIFFON:** Well, I thought I saw some --

15 **DR. NETON:** -- to what you say about the nearby
16 approach, unless it's a very --

17 **MR. GRIFFON:** Oh, really?

18 **DR. NETON:** -- narrow focus -- two-year period
19 or something like that -- we would almost never
20 use --

21 **MR. GRIFFON:** I thought I saw some reference to
22 the nearby model.

23 **DR. NETON:** Well -- well, that's an option --

24 **MR. GRIFFON:** Sometimes?

25 **DR. NETON:** -- but in almost all cases the

1 claimant-favorable -- or the coworker model is
2 much more claimant-favorable, and if we can't
3 tell, we're going to use it.

4 **MS. MUNN:** And so even though this --

5 **MR. GRIFFON:** I guess what was throwing me --
6 I'm sorry, Wanda. I guess what was throwing me
7 was the fact that -- or -- or earlier
8 statements that the coworker model wasn't used,
9 and then we find these gaps --

10 **DR. NETON:** Well, that's my point, though, I --

11 **MR. GRIFFON:** -- but -- but now Brant's
12 clarifying that with me, too, that that -- that
13 that's changed --

14 **MS. MUNN:** But --

15 **MR. GRIFFON:** -- or that's -- as the TIBs came
16 out, that changed.

17 **DR. MAURO:** There -- there are too many degrees
18 of freedom.

19 **MR. GRIFFON:** Yeah.

20 **UNIDENTIFIED:** Well --

21 **DR. MAURO:** We can't do a statistical method.

22 **DR. NETON:** I think we're trying to slice this
23 in pieces.

24 **DR. MAURO:** I mean -- I mean as simple as that.
25 It was well-intended, but there are too many

1 degrees of freedom, but we're never going to
2 agree on that, I -- which leaves you in a place
3 where you have to just go randomly -- sample
4 from the population, and -- I mean if you have
5 -- if you have --

6 **DR. NETON:** I agree with you.

7 **DR. MAURO:** -- (unintelligible) degree of --

8 **MR. GRIFFON:** Yeah, yeah --

9 **DR. NETON:** Let's go back --

10 **MR. GRIFFON:** -- and just understand you're
11 going to get some process workers, you're going
12 to get some --

13 **DR. NETON:** Let's go back to previous analyses.
14 It's been sufficient for us to go through the
15 database and then say this percentage of the
16 work force was monitored -- statement of fact,
17 40 percent, 50 percent, whatever it is. We
18 accept that at face value. That's what we have
19 in -- available to us to ascertain, 50 percent.
20 Then we say okay, we've got some gaps; how are
21 we going to fill in those gaps. We have a
22 coworker model. You know, it -- it's one thing
23 to say you have one percent of the work force
24 monitored and you're going to use that coworker
25 model to reconstruct 99 percent. It's another

1 thing to say I've got 50 percent, and is that
2 coworker model sufficiently robust. I think
3 with (unintelligible) we're trying to slice the
4 salami way too thin and (unintelligible) --

5 **DR. MAKHIJANI:** This has now -- this has now
6 become too complicated --

7 **DR. MAURO:** Yeah, you can't do it.

8 **DR. MAKHIJANI:** -- for us now and so I think
9 that --

10 **MR. GRIFFON:** I think you -- I think you're
11 back to almost random selection pre- and post-
12 '64, but that's my opinion, but --

13 **DR. NETON:** So I think -- and let the chips
14 fall where they may, but then it's always going
15 to come back --

16 **DR. MAURO:** So --

17 **DR. NETON:** -- to the coworker model.

18 **DR. MAURO:** So -- and you know where we are, we
19 have --

20 **MR. GRIFFON:** It may come back to the coworker
21 model. I --

22 **DR. MAURO:** -- we have 12.

23 **MR. GRIFFON:** -- I just hope you appreciate the
24 history, though, Jim.

25 **DR. MAURO:** We agreed that it would have been

1 random sampling and you guys grabbed it -- so
2 we grabbed 12, sounds like the -- you know, the
3 --

4 **MR. FITZGERALD:** Twelve.

5 **DR. MAURO:** What's that?

6 **MR. FITZGERALD:** I said (unintelligible)
7 twelve.

8 **MS. JESSEN:** No, you only need seven.

9 **DR. MAURO:** (Unintelligible) seven?

10 **MR. GRIFFON:** I mean I do -- you know, I just
11 don't want to appear as unreasonable, although
12 probably some people do view it that way. I
13 mean the -- this -- the coworker stuff, believe
14 me, I went in, you know, full bore on that
15 stuff and I was ridiculed because it was two
16 out of 1,100 that needed the coworker model to
17 be used --

18 **DR. NETON:** Well, and that --

19 **MR. GRIFFON:** -- so -- so I'm just telling you,
20 Jim, that -- that's how this whole -- I mean --

21 **DR. NETON:** I understand how you feel, Mark.

22 **MR. GRIFFON:** Yeah, I mean --

23 **DR. NETON:** But I think we're at the point now
24 where --

25 **MR. GRIFFON:** -- it may seem odd that we're

1 here, you know, but here we are.

2 **DR. NETON:** I think we're at the point now,
3 though, where we have to not forget that, but
4 recognize that -- that there are more coworkers
5 being done -- in light of the fact that we have
6 the models, they're using them -- so now we
7 have -- now it seems to me the decision has to
8 be made is the coworker model that we're using
9 or proposing reasonable. And -- and --

10 **MR. CHEW:** Maybe the sampling should try to
11 answer that question.

12 **MR. GRIFFON:** And -- and you know, we've got
13 new -- we've -- we -- you know, we'll get into
14 that more later, but we've got some new
15 information to consider with -- with that
16 regard. I mean this question of CEDR and HIS-
17 20 ending up with the same result but looking
18 very different all along. I mean that's -- you
19 know, that's --

20 **DR. NETON:** Well, that's what I'm saying. I
21 think that's where the --

22 **MR. GRIFFON:** -- very interesting.

23 **DR. NETON:** -- the issues are.

24 **MR. GRIFFON:** Yeah.

25 **UNIDENTIFIED:** Mark, let's --

1 **MR. GRIFFON:** Okay, I think -- again, I think
2 we're still back to SC&A proposing a plan. I -
3 - I don't -- I hesitate with the -- I want to
4 get some process operators in that pool, I
5 agree, Brant, but I hesitate to -- to pick
6 people that we think were monitored only
7 because I -- you know, I think we should just -
8 - I'm leaning toward a more random selection.
9 I'll leave it up to you guys to consider, but -
10 - but I think you need to propose that along
11 with the cases, run it by NIOSH, and then maybe
12 NIOSH can help fill in parameters that we need
13 to know about these people so that -- you know,
14 such as were they a subcontractor, were they --
15 you know, I think tho-- that's the main
16 parameter. We want to at least, before you
17 produce a product -- I hate to make --

18 **MR. FITZGERALD:** You need the parameters to --

19 **MR. GRIFFON:** -- summary conclusions about a
20 lot of people that -- that they can demonstrate
21 should not have been on -- you know, were not
22 monitored at all.

23 **DR. ULSH:** How many are we talking about, Mark?
24 Do we have a feel for (unintelligible) --

25 **DR. MAKHIJANI:** Could I propose a sort of a --

1 **MR. GRIFFON:** I don't want to pin them down to
2 a number 'cause --

3 **DR. MAKHIJANI:** -- two-set pro-- two-step
4 process for this that may make it
5 (unintelligible) --

6 **MR. GRIFFON:** Less than -- less than 19, yeah.

7 **DR. MAKHIJANI:** -- simpler, because I'm -- I'm
8 -- because of these confusions, what -- what
9 perhaps one -- we could do is SC&A could draft
10 a proposed plan, given these complexities, and
11 send -- and have -- send it to the working
12 group and NIOSH, and then we could have one of
13 these technical phone calls that -- that --
14 that (unintelligible) --

15 **MR. GRIFFON:** Yeah, not a workgroup call, just
16 a --

17 **DR. MAKHIJANI:** -- not a work-- not a full --
18 and document it and do the summary, and those
19 have worked pretty well to sort -- sort these
20 questions of detail out in the past, and
21 decide, you know, how many -- and I could
22 consult with Harry in the meantime and decide
23 how many -- and -- and I do agree with Brant to
24 some extent that we do need some workers --
25 process workers who we think should have been

1 completely monitored because it would be bad to
2 not have a sampling of that group 'cause we
3 didn't -- we certainly did not sample it that
4 way. And -- and how many -- maybe less than
5 19?

6 **MS. MUNN:** Way -- way less than 19. Arjun and
7 Joe, John, how many categories of individuals
8 in your list that you're making there -- you
9 know, in your minds, how many categories of
10 individuals do you feel we should do this
11 excess sampling for? Because I see it as
12 excessive; nevertheless, if that's our chair's
13 determination that that's what we're going to
14 do, then tell me how many different types of
15 categories are you looking at here? If you're
16 going to look at eight categories, then you
17 ought to have how many people out of which
18 category? You know, I -- it seems to me you
19 don't need three weeks to put a proposal
20 together. You only need a day to put a
21 proposal together. You know in your heads what
22 you think he's talking about now. Tell us.

23 **MR. GRIFFON:** But the --

24 **DR. MAKHIJANI:** Especially with the confusion,
25 you know, it would be very difficult for me,

1 Ms. Munn, but I have just made it, so I -- I
2 actually don't -- these are -- these are not
3 very clean categories and so I actually don't --
4 - I -- I agree with Mark is that I think given
5 the complexity of how many ways you can slice
6 this thing and how fuzzy these boundaries are,
7 that it may be good to do a set of -- that are
8 random, but with a focus -- to some extent to
9 make sure we have enough process operators to
10 make sure that the process operators were all
11 sampled and their records are reasonably
12 complete or -- or if they're not complete, to
13 make some judgment about that --

14 **MR. GRIFFON:** And cover those time periods,
15 those --

16 **DR. MAKHIJANI:** -- and to cover --

17 **MS. MUNN:** Tell me how --

18 **DR. MAKHIJANI:** -- and to slice it --

19 **MR. GRIFFON:** -- yeah, yeah.

20 **DR. MAKHIJANI:** -- according to
21 (unintelligible).

22 **MS. MUNN:** Tell me how you randomize, because
23 you know, I'm -- I can't see you doing a Monte
24 Carlo here, but if -- what are you doing?

25 **DR. MAKHIJANI:** I -- I have -- I have a sort of

1 an -- a description of that from Harry,
2 actually, I can -- I can certainly share with
3 you or forward his memo to you. He's -- he's --
4 - he's told us how -- how we could do that. If
5 you have access to all the numbers, there's a
6 way to randomize that, pick a random number
7 generator and go through it.

8 **MS. MUNN:** And so --

9 **DR. MAKHIJANI:** You can do that.

10 **MS. MUNN:** So you -- you still, since we're
11 clearly not going to give them any direction --
12 right, Mark, we're not going to give them
13 direction?

14 **MR. GRIFFON:** I think we've given them as much
15 direction as we can. They draft from here,
16 Wanda. That's -- that's it. They draft from
17 here.

18 **MS. MUNN:** So we're not --

19 **MR. GRIFFON:** I mean we've got the dir--

20 **MS. MUNN:** -- we're not giving you any
21 direction, just out of the clear blue sky
22 you're going to go off here and you're going to
23 send me Harry's memo; we're all going to know
24 how Harry's going to randomize this -- and I
25 don't know Harry, I don't think, but --

1 **MR. GRIFFON:** Well, Wanda --

2 **MS. MUNN:** -- and I don't need to, but --

3 **DR. MAKHIJANI:** You've seen his work.

4 **MS. MUNN:** -- but -- yeah, I'm sure I have.

5 But no -- no, I just want to try to clear -- I
6 want to go to lunch with two things in mind.

7 One, that somebody is going to do some

8 randomization here that may or may not be

9 biased in any direction that we can't control,

10 and that -- that there's going to be an

11 iterative process and we have some idea of how
12 many cases we're going to be looking at.

13 Because I see this as not only thousands of

14 hours, but I see this as hundreds of thousands

15 of dollars that we're doing here in -- in an

16 effort to try to get to the point that John is

17 absolutely correct we have to reach, or else

18 we're not going to go anywhere. So I -- I just

19 want to -- if -- if we can go to lunch with

20 those two things, then I'm hungry and I'm ready

21 to eat, and I'm a lot nicer after I've eaten.

22 **MR. GRIFFON:** Let's -- let's hope so.

23 **DR. MAKHIJANI:** Ms. Munn, first -- first so

24 there's no misunderstanding about what we did -

25 - 'cause Brant brought this up a little earlier

1 and made me sit up in my chair. The first four
2 cases that we looked at out of these 12 were
3 random in -- to the extent that NIOSH provided
4 random samples to SC&A for review. So that was
5 something that was done by the Board, and so
6 when --

7 **DR. NETON:** It was five.

8 **DR. MAKHIJANI:** -- we started -- with five. So
9 when we started with the five Rocky Flats
10 cases, this was a randomization that was done
11 by NIOSH, not by us, and -- and by the Board.
12 And so we started there. The other seven --
13 Ron, correct me if I'm wrong -- were -- we did
14 not cherry-pick these in any way. They were
15 the first seven -- there were seven numbers
16 that came up. We didn't open a file and say
17 oh, that one's complete and so we're going to
18 put that -- and we're going to find some where
19 there are gaps -- this -- this is -- this --
20 this was simply 12 cases that we looked at,
21 because otherwise we would be presenting you
22 with a biased --

23 **MR. GRIFFON:** Was this --

24 **DR. MAKHIJANI:** -- result, and that --

25 **MR. GRIFFON:** -- sort of a random number --

1 **DR. MAKHIJANI:** -- that would be wrong.

2 **MR. GRIFFON:** -- generator approach, or --

3 **DR. MAKHIJANI:** No, we did not use a random
4 number generator --

5 **MR. GRIFFON:** But so-- okay.

6 **DR. MAKHIJANI:** -- but there were seven more
7 cases that were picked, in a similar way to
8 what NIOSH would have given these five cases.
9 Ron?

10 **MR. BUCHANAN:** Yeah -- yeah, this is Ron.

11 Yeah, those other cases I -- I went into the
12 files and I found ones that -- that fit the
13 period that we were concerned with and I would
14 go to like (unintelligible). I'd search for --
15 for ones -- I didn't want to find ones that
16 just worked there a year or two. I mean that
17 wouldn't tell us anything. But I want
18 something that was a reasonable amount of years
19 they worked there. I didn't look for how many
20 periods that they were missing or anything,
21 because I didn't know that information to begin
22 with, that looked like one that provided a
23 number of years of employment, then I would
24 select that, regardless of what period that
25 was, early '50s or '70s or whatever. And then

1 I would go to the next number -- say that was
2 1,000, I'd go to 2,000 and search for that,
3 then 3,000 case number and search for that and
4 find ones that, like I say, had a reasonable
5 number of years, but I did no searching as far
6 as their occupation, how many dose records they
7 had or anything 'cause I didn't know that until
8 -- I set that aside, said I (unintelligible)
9 investigate that one. Then I went back and
10 investigated it to see how many -- what the
11 gaps were and stuff.

12 **DR. MAKHIJANI:** Okay. The -- the second part
13 of the answer to your question is, you know, I
14 don't -- if the Board's direction or working
15 group's direction is don't do anything, it's a
16 zero, we're on as tight a leash as you want to
17 keep us. There's no -- there's no intent to go
18 out on fishing expeditions. And if there's a
19 direction to do zero or one or ten more -- or
20 do something else altogether to settle this
21 question, or stop here -- this is of course
22 entirely your prerogative. This -- if you --

23 **MR. GRIFFON:** No, I -- I think based --

24 **DR. MAKHIJANI:** -- (unintelligible) consult
25 with a statistician and give you a number and

1 then you can decide on a greater or lesser
2 number, this is -- this is also your
3 prerogative.

4 **MR. GRIFFON:** I mean we've got new information
5 on the Board about -- about the monitoring
6 procedures over time. I think the sample's
7 definitely less than 20. I think it's probably
8 closer -- you know, between ten and 15 is
9 probably going to do it, and -- and you do it
10 on these parameters that now we've -- you know,
11 we -- we've -- there -- there's one part that's
12 -- makes me uneasy, which is that -- this
13 question of apparently -- and it's not clear to
14 me if it was ever a policy or if it was a --
15 you know, but this notion that people were
16 badged but sometimes we, due to manpower,
17 didn't read some of them or things like that,
18 that's -- that's going to be a very fuzzy sort
19 of line there. That -- that worries me because
20 if you come back with a conclusion and then --
21 are we going to be in a position of trying to
22 find some more quarterly memos that defend that
23 during that time period, you know, they
24 actually didn't read everybody or something,
25 you know. That's -- that's the one I'm real

1 uneasy about. But other than that, I think a
2 fairly random sample with those main time
3 periods of concern, and -- and it has to be --
4 and -- and I think we should make sure -- we
5 might want to look at -- and you need job tit--
6 you need some process operators in there, so I
7 guess it's not truly random, but you need to
8 have something -- some -- some people that were
9 definitely -- that, as Brant said, definitely
10 should have been monitored, you know, those
11 folks.

12 **MR. MEYER:** Is it possible when we get done
13 with this, almost a matter of how many cases we
14 sample and what the results are, we're still
15 going to come back to the coworker model
16 evaluation? Is this -- is this necessary, in
17 that -- in that sense?

18 **DR. MAURO:** In other words, are we going to --
19 then okay, we've got our cases. We understand
20 there are holes, and are we basically doing a
21 Task IV analysis? I mean stay with me for a
22 minute. Is that what we're really asking? All
23 right, here's our -- here's our sample, whether
24 it's 15 or ten or five. And we're going to go
25 is okay, we see the holes -- all right? And

1 then there's -- you know, it's a case that was
2 done. Right? And we're going to look at it,
3 did they fill the holes in right, and how did
4 they do it, and it was a coworker model -- and
5 in a funny sort of way, aren't we back in Task
6 IV?

7 **MR. GRIFFON:** No, I don't think so, I -- I
8 don't -- I don't view it that way 'cause first
9 of all I don't even think we need to have
10 adjudicated cases for this review. It doesn't
11 have to be completed cases, so we wouldn't want
12 to look at methods. But I would -- I would
13 look at the data only, data gaps only. Now --
14 now there is --

15 **DR. MAURO:** So we stop there now. Okay.

16 **MR. GRIFFON:** There is a good point, but I --
17 you know, the point raised that if -- if it's
18 going to be a coworker model filling that gap
19 anyway, but I think we still have to answer
20 this question of -- you know, if -- if we find
21 -- if we do this sample and find that several
22 process operators have large gaps in the
23 external monitoring, that may raise a question
24 about the validity of the -- of that external
25 data for even a coworker mod-- you know, so I

1 think that's the only reason -- otherwise, I
2 agree with Bob's point that, you know, do we --
3 are we going to just end up in the same place
4 and the coworker's going to fill it in anyway,
5 then we're back to reviewing the coworker. But
6 I think we have to take this to an end, but I
7 want this to be the final sample. I really
8 think this has to be the final sample.

9 **MS. MUNN:** Thank you.

10 **DR. MAKHIJANI:** Mark, then why not take Brant's
11 suggestion and stick to process operators?

12 **MR. CHEW:** I got a question here. While we
13 have an advantage of having Roger and Jim and
14 Gene on the phone here, I'm going to ask a
15 question -- I'm basically following up what
16 John Mauro was saying -- if -- I feel that his
17 expectations for process workers you're going
18 to see a fairly complete, you know, information
19 on dosimetry. That may -- I want to make sure
20 that they take a look at that. That scenario
21 may not necessarily always be true because
22 you're looking at a person who was categorized
23 a process worker, and he or she may be taken
24 out of the area to go do something else that
25 may not necess-- necessitate them being

1 monitored. You --

2 **MR. GRIFFON:** But see, that's -- that's --

3 **MR. CHEW:** -- don't have to answer that
4 question, but that's a -- that's just a thought
5 here and I'm (unintelligible) --

6 **MR. GRIFFON:** See, if that -- that's the case,
7 that would really surprise me 'cause if -- if --
8 -- well, if they -- I -- I understand what
9 you're saying 'cause the job categories
10 sometimes don't track the details of what
11 people were doing.

12 **MR. CHEW:** Right, that was -- that was my
13 point.

14 **MR. GRIFFON:** I -- I agr-- I agree with that.
15 Maybe I should just leave it at that.

16 **MR. CHEW:** Yeah.

17 **MR. GRIFFON:** I'm just trying to tie those kind
18 of details with the policies. I mean, you
19 know, it seems to me that sometimes in the
20 workgroup process we get the policy as the
21 answer. Well, Mark, here, you know, this is
22 the stated policy; this is what they did.
23 We've got this for -- you know, this -- for
24 '72, we've got it for '81, we've got it for
25 '90, you know, what more do you want? This is

1 what happened, you know. And now it -- it's --
2 it's flipping a little. You know, well, this
3 is the policy, but you found this because oh,
4 here, we found this memo that said in 1969 they
5 -- they didn't read everybody's. Now did that
6 everybody include this person we're looking at?
7 We're not sure, but that's an answer anyway, at
8 least that we can say there -- there's good
9 reason to believe that they could have been one
10 of the people 'cause they had a low -- and I
11 don't disagree with that part of it 'cause, you
12 know, they were in an administrative position
13 or whatever. You know, intuitively you say
14 yeah, there's a good reason for them not to be
15 monitored, but when the -- when the policy on
16 the book says all these people should be
17 monitored, I guess that's why that would cause
18 me -- that would cause me concern if I saw
19 several of the process operators coming up that
20 way.

21 To go back to Arjun's question, I think it's
22 got to be -- I guess I don't mind focusing on
23 pro-- on -- on -- I guess on operational
24 workers --

25 **DR. ULSH:** It doesn't have to be process

1 operators, just people that we know --

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

3 **DR. ULSH:** -- should have been monitored.

4 **MR. GRIFFON:** Right, right, 'cause I think you
5 need maintenance, you need out-- it's got to be
6 broader than just process operators, certainly.
7 I mean lab people most likely should have been
8 on monitoring programs all the time, you would
9 think.

10 **MR. FITZGERALD:** And I think it's going to get
11 a little fuzzy in the D and D era, we can take
12 this up when we get to D and D, but --

13 **MR. GRIFFON:** Yeah, let's --

14 **MR. FITZGERALD:** -- you know --

15 **MR. GRIFFON:** Whole 'nother topic.

16 **MR. FITZGERALD:** -- those -- those job
17 categories get fuzzy and the whole notion of
18 validating, you know, what -- how complete the
19 record is, so...

20 **MR. GRIFFON:** Okay. So -- so --

21 **DR. MAKHIJANI:** Mark, do you -- do you want to
22 include D and D in this -- because we know that
23 there are people who were not monitored in D
24 and D, so I -- I'm wondering whether --

25 **MR. FITZGERALD:** That's why I'm raising it,

1 right.

2 **DR. MAKHIJANI:** -- D and D should be a separate
3 exercise because this -- this is going to
4 multiply the number.

5 **MR. GRIFFON:** It's a separate action item. I
6 think we should keep it separate.

7 **DR. MAKHIJANI:** Okay, so we only go up to --

8 **MR. GRIFFON:** I don't know --

9 **DR. MAKHIJANI:** -- the early '90s.

10 **MR. GRIFFON:** Let me ask. I mean I don't think
11 -- I'm learning new things about coworker
12 models as we speak. I mean are coworker models
13 applied all the way through the years at Rocky?
14 Would they be applied into the D and D phase --

15 **DR. ULSH:** Well, I know that --

16 **MR. GRIFFON:** -- if someone --

17 **DR. ULSH:** -- OTIB-38 currently only goes up to
18 -- what is it, Buddy, late '80s, maybe early
19 '90s?

20 **MR. GRIFFON:** So the da-- the database runs
21 that far. Right? Yeah, yeah.

22 **DR. ULSH:** Now that was the CEDR database.
23 Right?

24 **MR. FITZGERALD:** CEDR database.

25 **MR. GRIFFON:** But would the model -- right,

1 right --

2 **DR. NETON:** We don't -- I don't think we
3 currently have a coworker model for D and D
4 workers right now --

5 **MR. GRIFFON:** No, I don't think you do, either.

6 **DR. NETON:** -- but we would. I mean I --

7 **DR. ULSH:** Wait, wait, wait, wait, wait --
8 that's not true.

9 **DR. NETON:** I'm sorry.

10 **DR. ULSH:** We have an external coworker model.

11 **DR. NETON:** Sorry, we have an external coworker
12 model.

13 **MR. GRIFFON:** Okay.

14 **MR. FITZGERALD:** This is a issue that we've
15 already --

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

17 **MR. FITZGERALD:** -- taken to ground on the D
18 and D, so maybe we should wait till D and D --

19 **MR. GRIFFON:** I think we should take that up
20 separately, though, outside of this effort.

21 **DR. MAKHIJANI:** So we leave out the D and D.
22 We may have a worker who went into that period,
23 but we would leave out data from -- I just want
24 to make more precise notes about what we're
25 doing just --

1 **DR. ULSH:** Yeah, actually I'd like to get a
2 little more clarification, too. You know, the
3 first step is SC&A proposes --

4 **MR. GRIFFON:** Right.

5 **DR. ULSH:** -- a certain number of cases and
6 gives them to the working --

7 **MR. GRIFFON:** That's why I did want this
8 iteration so there's no confu-- I mean, you
9 know, it's --

10 **DR. ULSH:** Right. And I guess NIOSH will
11 supply some information on those cases. I'm
12 not sure what -- exactly what parameters you're
13 interested in us supplying, but --

14 **MR. FITZGERALD:** So the key -- the key issue is
15 --

16 **MR. GRIFFON:** Mainly the contractors, prime and
17 -- and sub. Right?

18 **MR. FITZGERALD:** Yeah.

19 **DR. ULSH:** Okay.

20 **MR. FITZGERALD:** Well, some agreement on who
21 these people are, but then some agreement on
22 whether we're looking at -- at missing or
23 unmonitored, I think, making sure there's
24 agreement that, you know, that's clear -- which
25 I think is part of the --

1 **DR. ULSH:** That's kind of where I was going.
2 Once we agree okay, these are the cases we're
3 going to look at --

4 **MR. GRIFFON:** Right.

5 **DR. ULSH:** -- what happens? Does SC&A do an --
6 a review similar to this 12 and --

7 **MR. FITZGERALD:** Yeah.

8 **DR. ULSH:** -- we reply?

9 **MR. FITZGERALD:** And -- and --

10 **MR. GRIFFON:** Well, I think maybe -- maybe Joe
11 -- I don't know if you're offering this, but
12 maybe there can be a in-between step because
13 any final report SC&A produce, we heard from
14 Larry, has to go through --

15 **MR. FITZGERALD:** We have to go through...

16 **MR. GRIFFON:** -- so maybe we can get on the --
17 you know --

18 **MR. FITZGERALD:** Well, what Larry was saying
19 before, we can have this interactive process --

20 **MR. GRIFFON:** Right.

21 **MR. FITZGERALD:** -- before we get to a report -
22 -

23 **MR. GRIFFON:** Before, right.

24 **MR. FITZGERALD:** -- and if you're going to tell
25 us well, this isn't really missing, this is --

1 frankly, these people are unmonitored.

2 **MR. GRIFFON:** Right.

3 **MR. FITZGERALD:** Well, that's -- that's
4 important. I think --

5 **MR. GRIFFON:** Right.

6 **MR. FITZGERALD:** -- that becomes a --

7 **MR. GRIFFON:** And they should have been
8 unmonitored or whatever, yeah, yeah, so before
9 we write that all out -- right.

10 **DR. ULSH:** So the process is fairly similar to
11 what we've done here.

12 **MR. GRIFFON:** Except maybe --

13 **MR. FITZGERALD:** But more --

14 **MR. GRIFFON:** -- maybe a --

15 **MR. FITZGERALD:** -- more iterative.

16 **MR. GRIFFON:** -- step in between before our
17 prod-- prod-- product's produced, right.

18 **DR. ULSH:** Okay.

19 **MR. FITZGERALD:** I mean if you say it's -- if
20 they're unmonitored, then I don't think you
21 need to have the ORAU team spend a lot of time
22 trying to document -- I mean okay, fine, you
23 know --

24 **DR. ULSH:** Probably going to have to do that to
25 determine whether or not --

1 **MR. FITZGERALD:** Okay, fair enough --

2 **DR. ULSH:** -- they were unmonitored.

3 **MR. FITZGERALD:** -- fair enough.

4 **MR. GRIFFON:** That's -- does that make a little
5 more sense, Brant?

6 **DR. ULSH:** Yeah.

7 **MR. GRIFFON:** Yeah.

8 **MR. FITZGERALD:** 'Cause I think what we're --
9 this is a confirmatory exercise, so we're
10 trying to --

11 **MR. GRIFFON:** Right.

12 **MR. FITZGERALD:** -- confirm that the -- those
13 who were monitored, the production workers or
14 whatever, were in fact -- the data's complete,
15 and those who were not production workers,
16 there are categories of workers where we would
17 expect to see unmonitored periods. So the
18 gaps, whether they're ten years, eight years,
19 six years, five years, that's fine. I mean
20 that -- that makes sense.

21 **DR. WADE:** And of the population that you look
22 at and move forward together, 80 percent of
23 it's going to fall off the table. Twenty
24 percent will be left --

25 **MR. FITZGERALD:** Right.

1 DR. WADE: -- and these will be --

2 MR. FITZGERALD: Right --

3 DR. WADE: -- the gaps.

4 MR. FITZGERALD: -- and that's what --

5 DR. WADE: And then the workgroup will have to
6 start to say okay, now these are potential
7 gaps.

8 MR. FITZGERALD: Right.

9 DR. WADE: Are the coworker models adequate --

10 MR. FITZGERALD: Right.

11 DR. WADE: -- to deal with them, leading up to
12 their vote on an SEC petition.

13 MR. GRIFFON: I agree with that part of the
14 path forward, yeah.

15 DR. WADE: So that's -- that's what you need to
16 do.

17 MR. FITZGERALD: Right.

18 MR. GRIFFON: Okay.

19 DR. WADE: But what you --

20 MR. GRIFFON: But now --

21 DR. WADE: -- really need to do is go to lunch.

22 MR. GRIFFON: Yeah, and now I think I need to
23 buy -- buy Wanda some chocolate.

24 DR. MAKHIJANI: Did I read out what I had as
25 notes so -- so I'm clear on -- you know, you

1 need to define the length of the leash here.

2 **MR. GRIFFON:** Sure, I think we were --

3 **DR. MAKHIJANI:** The -- the -- okay. You would
4 like to get process operators and other
5 operational workers who should have been mon--
6 monitored, including maintenance, but also a
7 random sample component. You want to split
8 this into the two time periods of concern, '51
9 to '63 and '64 to '92. I'd like some clarity
10 on what early '90s means, but I'm assuming for
11 now it's '92, but if you could -- Brant, if you
12 could clarify that, that would help.

13 **DR. ULSH:** Sure.

14 **DR. MAKHIJANI:** A brief -- okay, then we would
15 leave out the D and D period --

16 **MR. GRIFFON:** Yeah.

17 **DR. MAKHIJANI:** -- out of this, and we would
18 confine it of course only to the data
19 completeness problem and -- and we would --
20 SC&A would propose some cases and then have an
21 interaction with the working group and NIOSH --

22 **MR. GRIFFON:** The only other step I would --

23 **DR. MAKHIJANI:** No, no -- on a technical call
24 to sort out what the workers were doing,
25 whether they were subcontractors, missing,

1 unmonitored and so on before proceeding to an
2 analysis of those cases.

3 **MR. GRIFFON:** Right. And the only other step
4 prior to that might have been to -- in your
5 selection of cases I think, as Ron stated, look
6 for people with a lar-- fair number of years of
7 employment, you know -- yeah, not just one year
8 or six months or whatever.

9 **DR. MAKHIJANI:** You want to define the
10 criterion? Ten or more?

11 **MR. GRIFFON:** That seems reasonable, I guess.
12 I don't know.

13 **DR. MAKHIJANI:** Or five or more?

14 **DR. NETON:** I'd say five or more.

15 **MS. MUNN:** Five or more.

16 **DR. NETON:** That'll make the pool bigger for
17 (unintelligible).

18 **MR. GRIFFON:** Yeah.

19 **DR. NETON:** You've got five years and you're
20 missing five years worth of data, that's
21 (unintelligible).

22 **MR. GRIFFON:** Yeah.

23 **MR. PRESLEY:** That's (unintelligible) right
24 there.

25 **MR. GRIFFON:** Yeah.

1 little more quickly, applying our new Board
2 efficiency process. And let's see, the next
3 topic is other radionuclides, and I think --
4 much like the last item -- we had a response
5 from SC&A and then you -- you returned in the
6 last week or so, I don't know exact--

7 **DR. ULSH:** Actually worse than that --

8 **MR. GRIFFON:** Worse than that.

9 **DR. ULSH:** -- worse than that,
10 (unintelligible).

11 **MR. GRIFFON:** So that was real -- yeah, that
12 was real recent, right. But at least we should
13 get an update of where we are, maybe from SC&A
14 and NIOSH, and see what remains in that topic.

15 **MR. FITZGERALD:** Yeah, I think -- just think
16 that -- had this discussion along, it was a
17 issue we raised in the site profile review, but
18 what's -- I think has developed is NIOSH has
19 developed two documents that we were given back
20 in the August/September time frame, I think, on
21 thorium in terms of maximum credible intake,
22 maximum organ dose and some of the assessments
23 that went into that as a basis, and as well as
24 some workup on some of the other radionuclides
25 that we can discuss. And this is also on the

1 heels of a classified meeting we had in Las
2 Vegas that resulted in the Freiburg interview
3 notes being given, too, so a lot of things have
4 been moving in the last I'd say couple of weeks
5 in -- in earnest, and so we gave NIOSH in a
6 sense some reaction to the two documents that
7 we received earlier, some comments. And they,
8 on -- let's see, it'll be Friday -- gave us
9 their response in turn to -- to our comments,
10 so there's been a lot of interchange. I would
11 guess we haven't really had a chance to sort of
12 weigh what we have given each other very much,
13 so that's where we are right now. And as you
14 know, Arjun has been on point on this issue,
15 and before that Y-12 as well, so he's become
16 sort of like with Mel -- sort of Mel's
17 counterpart now, sort of the -- the other
18 nuclides team here.

19 **MR. CHEW:** (Unintelligible)

20 **MR. FITZGERALD:** So --

21 **MR. GRIFFON:** Sort of like (unintelligible).

22 **MR. FITZGERALD:** So to the extent that we can
23 actually maybe share what we can share, given
24 all the lateness of the exchanges, I would
25 leave it to the two of them actually to see if

1 there's anything they can illuminate the
2 working group with. I don't know if you wanted
3 to --

4 **DR. MAKHIJANI:** Well, sure --

5 **MR. FITZGERALD:** This is one of these issues
6 where there's so much you could spend a day
7 talking about other nuclides, but I guess the
8 alternative would be to spend a few minutes --

9 **MR. GRIFFON:** Ten minutes.

10 **MR. FITZGERALD:** -- ten minutes.

11 **MR. CHEW:** Arjun, I would acknowledge that
12 Bryce did quite a bit of the work, that he
13 brought us some of the issues with thorium and
14 things like this, so please address it if you
15 want to.

16 **DR. MAKHIJANI:** Yeah, I -- I took a quick look
17 at -- at what you sent us, and basically we --
18 we do have somewhat of an issue with the
19 compilation that Mel's group did on the data.
20 There's a question of whether the documents
21 that were reviewed were complete, whether all
22 the production was captured, and there's an
23 issue for the working group as to whether that
24 -- the completeness of the source term
25 description is a second question or not. I --

1 I was a little -- I just finished doing some
2 work on Fernald and was surprised that a lot of
3 thorium-related production documents had been
4 destroyed, according to the TBD, and obviously
5 the production-related information was
6 incomplete. And so just -- the thorium
7 question just kind of raised a question in my
8 mind as to how complete it is. I don't know if
9 the working group wants to do -- and I think we
10 agree that this is something for the working
11 group to decide as to whether they want for
12 their investigation or whether we live --
13 whether we settle with the source term that --
14 that we have. We -- we didn't find any gaps or
15 problems in terms of internal consistency or
16 anything like that in what -- what you put
17 forward in that as the source term in that
18 memo, so we don't have an issue with that table
19 that we identified.

20 As regards new Reg. 1400, we have more issues
21 with that, and I -- as I said, I took a quick
22 look at -- at the response and I tried to just
23 be brief in characterizing them. One is I
24 still feel that NI-- NIOSH has said that the
25 working conditions over there were well-

1 ventilated, that they were -- there were hoods
2 in the -- essentially the equivalent of what --
3 modern industrial hygiene condition. And I
4 think, other than -- there's a -- there's a
5 personal communication from June 26th. I don't
6 believe I have seen that, and -- and so I'd
7 like to -- we'd like to see that --

8 **UNIDENTIFIED:** Is that the interview from
9 REDACTED?

10 **DR. MAKHIJANI:** -- if we have copies of that
11 which says that --

12 **MR. CHEW:** That's the interview with REDACTED
13 he's (unintelligible)?

14 **DR. MAKHIJANI:** Right, how do you pronounce the
15 name?

16 **MR. CHEW:** REDACTED (ph.).

17 **DR. MAKHIJANI:** REDACTED, I'm sorry, REDACTED -
18 - I -- that's why I didn't say the name because
19 I didn't know how to pronounce it. The -- so
20 that's -- that's kind of -- that -- there's
21 supposed to be a report in the -- in the
22 REDACTED-- REDACTED memora-- interview it says
23 that there was a report that REDACTED --

24 **UNIDENTIFIED:** Uh-huh.

25 **DR. MAKHIJANI:** -- that there was a report on

1 working conditions at the time. That would be
2 very helpful.

3 **DR. ULSH:** I think -- Arjun, I'm trying to
4 reach back in my head what that was. Didn't
5 REDACTED talk about some kind of history of the
6 uranium operations at --

7 **MR. RICH:** No, he -- he referred to a couple of
8 documents. One of the was -- the document
9 referred to the curium operation, but -- and
10 there -- there was another one that -- I think
11 he referred to one -- an historical document by
12 REDACTED again on waste (unintelligible).

13 **DR. MAKHIJANI:** Okay, so --

14 **DR. ULSH:** All right. Well, we'll --

15 **MR. GRIFFON:** And --

16 **DR. MAKHIJANI:** -- because REDACTED mentions
17 that -- that the machines were not completely
18 enclosed. They were plastic, good ventilation
19 -- I'm not sure, this isn't like a complete
20 sentence. It's a little bit hard to decode.
21 But that there are pictures of it -- of the
22 working conditions, maybe just relating to the
23 thorium strikes. It's not clear what all it --
24 what all of the processes were covered that you
25 talked about in your -- in your report. And

1 basically in regard to working conditions that
2 there was some documentation of the working
3 conditions as to how the production was carried
4 out, and we have a difference about whether
5 there was production or not. And in my
6 opinion, if you are doing some machining, then
7 in the engineering sense it's production. Now
8 you've said that it was light machining, and
9 again there's no documentation of what that
10 might mean. And one large and -- sort of
11 difference is even if you're doing light
12 machining, the transient air concentrations
13 could be significant if the industrial hygiene
14 conditions are not good. And so borrowing from
15 other thorium data which we did showed that if
16 your industrial hygiene is not good, you could
17 have large intakes in a short period of time.
18 I don't think we'd disagree with that. The
19 question is, what were the industrial hygiene
20 conditions; and in my mind, that's not --
21 there's some more evidence in terms of the
22 interview that came in your -- in your report
23 or your reply, but -- but no documentary
24 evidence about working conditions.
25 Then there-- there's a question of -- we all

1 understand we're dealing with 50-year -- 50-
2 year committed doses, not as how IREP
3 calculations are done, but just for the --
4 studying importance of the radionuclides, and
5 that's how we have been doing it and that's
6 fair for quite some time, so that's how our
7 calculations were done. I rechecked our
8 calculations and we used Federal Guidance
9 Report 13 for the thorium calculation. I came
10 up with the same numbers. I think there's
11 nothing wrong with our calculation. The -- I
12 talked about -- I exchanged e-mails about this
13 with Joyce, because you said that our
14 calculation was incorrect or some words to that
15 effect, and I arithmetically verified it and
16 then I exchanged notes with Joyce as to whether
17 it was appropriate to use FGR 13, which has a
18 one-micron assumption, and she said that under
19 the circumstances, it was -- it seemed okay. I
20 mean there may be one -- more than one approach
21 that's okay, and so I think that our calcu-- we
22 just want to reaffirm, at least tentatively,
23 that our calculations -- somebody will have to
24 check my -- all my computer musings here before
25 -- so this is an informal account of -- of just

1 my own personal in-- personal kind of reading
2 of this.

3 A large part of the difficulty with -- with the
4 new Reg. 1400 approach is -- is whether such a
5 thing -- which is based on a 1980 exploratory
6 health physics paper that was applied by the
7 Nuclear Regulatory Commission to determine
8 whether air mon-- whether and how air
9 monitoring should be carried out -- can be
10 applied to dose reconstruction. And I'm a
11 little bit confused as to what NIOSH said it
12 did, because as I read the paper NIOSH applied
13 a factor of ten to the minus ten to the
14 estimated annual production of 60 kilograms.
15 But in the response NIOSH said that it applied
16 a factor of ten to the minus six, so now I'm a
17 little confused as to what was actually done.
18 I know what was done in the paper, or at least
19 I think I know what was done in the paper, but
20 I'm confused about the difference between the
21 reply that we got from NIOSH and my reading of
22 the original paper. And I think -- I -- I do
23 not feel that new Reg. 1400 was -- is
24 appropriate to apply in this kind of context
25 where the rule for dose reconstruction says

1 you're going to give the benefit of the doubt,
2 no -- that in no case uncertainties would harm
3 -- I -- I have -- I have the text of the
4 regulation somewhere in my notes, but in no
5 case uncertainties will harm the claimant. I
6 think the kind of factors that go into the new
7 Reg. are rules of thumb and back-of-the-
8 envelope, not meant for this kind of
9 application. And if it is applied in this
10 case, and this -- I didn't find any response
11 from NIOSH, maybe I didn't fin-- read it and it
12 is there -- correct me, Brant, if I'm wrong --
13 is that if new Reg. 1400 is applied in this
14 context, it definitely will raise a very large
15 consistency question for the Board as to why it
16 was not applied in Y-12. Because new Reg. 1400
17 has no limitations on the production level.
18 The production level should be small and then
19 you apply new Reg. 1400 -- 'cause not a dose
20 reconstruction guidance, in any case. So that
21 will raise a very, very large question. We're
22 not saying that intakes were high or low, but a
23 lot of questions in there.

24 That's the summary of an initial response.

25 **MR. GRIFFON:** Can -- just -- just to follow up

1 on Arjun's before you respond, are the -- in
2 terms of -- we know we -- we had the meeting in
3 -- in Las Vegas -- Las Vegas where we went over
4 the classified data and stuff and the materials
5 balance logs, we understand that. As far as
6 the operations, especially for thorium I guess,
7 but -- but for -- for all these things, is it
8 mostly based on inter-- 'cause I've seen like
9 REDACTED I guess and this other person, who I -
10 -

11 **MR. CHEW:** It's REDACTED as we --

12 **MR. GRIFFON:** REDACTED, okay, I'm sorry -- and
13 -- and another individual that you mentioned,
14 was it -- was it a set of interviews that you
15 did with several past production supervisors or
16 whoever and -- and were there any other
17 documenta-- you know, of these early documents,
18 have you found any of those to support sort of
19 their statements?

20 **MR. RICH:** Yeah, there -- there are some
21 documents related to several of them. For
22 example uranium-233, thorium strike has a --
23 has a paper that describes that operation and
24 then --

25 **MR. CHEW:** I have that here, by the way.

1 **MR. RICH:** Yeah. And -- and there are some
2 other documents, but fundamentally in
3 relationship to the monitoring, it -- it has
4 come somewhat from interviews with --

5 **MR. GRIFFON:** Based on their --

6 **MR. RICH:** -- responsible -- professionals
7 responsible for the monitoring program.

8 **MR. GRIFFON:** All right, just wanted to be
9 clear on that.

10 **DR. MAURO:** I -- I've got a query for you. I
11 was reading the correspondence and turns out --
12 I've been doing Chapman Valve while I was
13 reading your correspondence and that -- and
14 looking at some of the -- the ten to the minus
15 six rule of thumb, and I just may have been
16 (unintelligible), but I come up with that if a
17 person were machining the material and you're
18 doing about 60 kilograms a year, so six
19 kilograms a month, anyway I came up with -- the
20 person doing the machining of this would be
21 exposed to micrograms per cubic meter -- micro,
22 as opposed to milligrams. I'm used to -- when
23 I'm -- when I'm looking at that kind of
24 operation and I'm talking about whether we're
25 talking uranium, steel, machining anything --

1 especially if you're generating sparks, even
2 though you may even be soaking the material to
3 keep it cool -- we're talking about dust
4 loadings that are not in the microgram range.
5 I mean the microgram range is what we have in
6 this room. This may be around a microgram or
7 two per cubic meter.

8 **DR. MAKHIJANI:** Tens of -- ten -- tens of
9 micrograms.

10 **DR. MAURO:** Yeah, so I'm used to milligrams.
11 And the number I came up -- unless I skipped a
12 couple of decimal points -- was micrograms, so
13 that just got -- the antennae went up, so
14 there's something about that ten to the minus
15 six number that doesn't look right. I guess
16 that's my contribution to this.

17 **MR. GRIFFON:** Yeah, Brant, go ahead I guess.

18 **DR. ULSH:** Well, first -- before we get into
19 the nitty-gritty and talk about whether we can
20 or cannot apply new Reg. 1400 or what factor we
21 should apply, I think it's worthwhile to step
22 back and get a little perspective on what they
23 did with thorium at Rocky Flats.

24 Now one operation was the thorium strikes, and
25 that was the removal of thorium-228 from

1 uranium-233 metals. And I'll let Mel may-- or
2 sorry, let Bryce maybe tell you little bit more
3 about that in a minute. I'm primarily going to
4 talk about the handling that they did of
5 thorium metal.

6 And one of the big problems that we saw, or
7 areas that we might disagree with -- with SC&A
8 on this issue is that you cannot take the
9 experience at Y-12 where they produced metric
10 tons of -- of thorium, or at Fernald where they
11 also produced tons of thorium metal, did things
12 like arc welding, you know, producing thorium
13 metal, warehousing -- serving as a warehouse
14 for the thorium for the entire DOE complex and
15 compare it to Rocky Flats. And the reason is
16 that because at Rocky Flats primarily what they
17 did is they received metal parts from Y-12,
18 parts were pre-formed at Y-12 and they were
19 used at Rocky Flats as a substitute for
20 plutonium in their weapons mockups. 'Cause
21 they would take the part they received from Y-
22 12, take it out of the box or whatever it was
23 it was shipped in, put it into the model.
24 That's pretty much it.
25 Now if there was a high spot or a burr or

1 something, you know, that made it not quite fit
2 right, they would take it out into the hood --
3 which was shrouded and ventilated, the hoods
4 that they used for processing EU -- they would
5 take off that high spot. They would maybe take
6 off that burr, take it back in, put it in a
7 model. That is in no way comparable to the
8 operations that occurred at Y-12 and Fernald.
9 It's just not.

10 So that was one fundamental difference that we
11 had between the fin-- you know, whatever
12 conclusions you might make at Fernald or Y-12
13 to Rocky Flats.

14 The other thing is I think it's worthwhile to
15 get some perspective here. When we heard, you
16 know, from our interviews -- REDACTED and
17 REDACTED and others -- about how many people
18 were involved in these processes at Rocky, they
19 said oh, maybe a dozen at most. So I -- this
20 occurred to me to do this on Friday, to try to
21 find out just how many workers were ever
22 employed at Rocky Flats. The best I could come
23 up with was from an epi study that had data up
24 through 1989, and they had about 16,000 workers
25 through '89. Now we know that that's a low

1 estimate. There were more than that. But
2 let's just go with 16,000.
3 So if you talk about 16,000 workers, a dozen of
4 whom might have been exposed -- might have been
5 involved with handling thorium at -- at Rocky
6 Flats, that's one parameter you have to keep in
7 mind. The other is, what kind of cases would
8 this make a difference, would it have the
9 potential to make a difference? Primarily it's
10 going to be lung cases.
11 Now I know, Arjun, you know, you're concerned
12 about bone doses, and there's a particular
13 vagary of IMBA where it overestimates the
14 amount of dose that goes to the bone surf--
15 because it puts it all at the bone surface
16 instead of distributing it throughout the bone.
17 Primarily we're talking about lung doses here.
18 So if you talk about 12 out of 16,000 workers
19 might have been exposed to thorium, and I ask
20 myself well, okay, how many non-comp lung cases
21 from Rocky Flats are there, and there are 34.
22 And if you even narrow it down more -- and you
23 know, I'll back off if you guys don't like this
24 narrowing down. I contend that it would only
25 really have a potential to make a difference in

1 the best estimate lung cases, the ones that are
2 fairly close to 50 that, you know, a little
3 extra thorium dose might push it over. Well, I
4 looked at how many best estimate non-comp lung
5 cases there are at Rocky; there are zero. So I
6 said well, that's going to give me a zero
7 probability so I'll just say there's one, one
8 out of 16,303 approximately, multiplied by a
9 dozen workers who might have handled thorium at
10 Rocky Flats out of 16,000. That leaves you
11 with a probability of having one of these
12 people in a situation that might have handled
13 thorium and it might make a difference in their
14 dose reconstruction -- about 4.5 out of a
15 billion. And so my question is why are we
16 spending all this time on this? It's not going
17 to make a difference -- 4.5 out of a billion.
18 Now if you want me to back off and say okay,
19 it's all the non-comp lung cases, you can't
20 really buy that it's the best estimate, now
21 you're talking 34 -- 1.5 out of a million, one
22 in a million, essentially. We're spending a
23 lot of time and effort on this issue when it
24 just doesn't make a difference for maybe one
25 person out of a million. And I know that this

1 is a low-ball estimate because I know that
2 there's more than 16,000 people that worked
3 there, so I mean that's something that I think
4 we need to talk about and perhaps consider. As
5 Arjun mentioned, you know, if there's
6 conclusions between Y-12 and Fernald and Rocky
7 Flats, we have a problem with that.
8 The other is new Reg. 1400 and that -- Arjun, I
9 think you're accurate in the areas that we
10 still have issues, you know, that we're not --
11 haven't achieved closure. One is the
12 applicability of new Reg. 1400. I find nothing
13 in new Reg. 1400 that says it can only be used
14 in particular situations that would lead me to
15 believe it is not applicable to Rocky Flats.
16 The purpose of new Reg. 1400 is to be extremely
17 conservative to determine whether or not air
18 monitoring -- an air monitoring program was
19 called for. It was not limited to only
20 facilities that had monitored industrial
21 hygiene, although I would contend that the
22 measures that were taken at Rocky Flats doing
23 what minimal handling of thorium metal they did
24 inside shrouded hoods with heavy health physics
25 monitoring, although we don't have air

1 monitoring that's explicitly identified as
2 thorium, it's most likely gross alpha. But
3 those would constitute normal precautions, or
4 even greater than normal precautions. But at
5 any rate, I don't find anything in new Reg.
6 1400 that would preclude us using that at Rocky
7 Flats.

8 And one other thing I want to clear up is we're
9 not proposing to use new Reg. 1400 to do dose
10 reconstructions. We're not. What we're doing
11 is we're using new Reg. 1400 to show that there
12 is no credible intake scenario that would
13 result in an appreciable organ dose from
14 thorium at Rocky Flats. That's fundamentally
15 different.

16 **MR. GRIFFON:** It -- I -- you know, it's very
17 different. I didn't understand that point, and
18 you're right, I thought -- I thought you were
19 proposing to use that.

20 **DR. ULSH:** No, that's why I thought --

21 **MR. GRIFFON:** Yeah.

22 **DR. ULSH:** -- that's why I thought I'd better
23 point (unintelligible) --

24 **MR. GRIFFON:** Uh-huh.

25 **DR. MAKHIJANI:** Can I ask a question about

1 that, which is -- suppose this argument is
2 accepted and the SEC is denied, and you have a
3 worker who worked with thorium. What dose --
4 as I understand it, you're proposing under 42
5 CFR 83 an upper bound intake estimate. This
6 estimate, if an SEC is denied, would be applied
7 in dose reconstruction, unless you can find a
8 more accurate way to reconstruct, which doesn't
9 seem to be on the table. So I think actually,
10 in my mind, what you are proposing is an intake
11 estimate that would -- not the actual intake.
12 Of course none -- none of the work being done
13 is actual intake estimates, or not much of it,
14 anyway. Mostly it's maximum and minimum and
15 upper bound and worst case, things like that.
16 And so what you would wind up applying, it
17 seems to me, is exactly new Reg. 1400 for a
18 thorium worker. So you are proposing an upper
19 bound estimate of intake.

20 **DR. ULSH:** Keeping in mind what I -- what I
21 started out with, that we're talking about four
22 -- a chance -- 4.5 out of a billion chance -- I
23 know, Mark, you're going to take issue with
24 that. Right?

25 **MR. GRIFFON:** Yeah, I mean it's just -- it's

1 just numbers, you know, it's -- I mean we also
2 -- let's just reflect on where we've been. You
3 know, I'm sorry, I can't -- I mean I remember
4 some Cyclotron workers that I was told this was
5 a very restricted process, only limited numbers
6 of people worked in there, da, da, da. Now if
7 -- if you can give us a listing, then I think
8 we're done, you know. I mean I -- I -- but
9 when -- when we start to say small ma-- you
10 know, we've got a lot of qualitative
11 information out here and if we can figure out
12 who these people are, if it was a very limited
13 operation, limited set of people and somehow we
14 can figure out who they were and who they
15 weren't, then -- then all that is very goo--
16 very useful, you know, but --

17 **DR. ULSH:** I think we can tell you probably who
18 was involved in the other radionuclides.
19 Thorium's going to be more problematic because
20 they simply didn't do thorium bioassay at
21 Rocky. I think similar to at Y-12, if we
22 discover more information down the line that
23 leads us to conclude that we've been in error
24 and in fact this was a big operation, well,
25 then we'll change. But we haven't seen any

1 information like that.

2 **DR. MAURO:** Are you saying then that 60
3 kilograms a year, let's say we -- that --
4 that's your number, and then you assume ten to
5 the minus six of that is inhaled per year as an
6 upper bound --

7 **MR. RICH:** No, no, (unintelligible) --

8 **DR. MAURO:** What am I -- what am I hearing
9 then?

10 **MR. RICH:** No, new Reg. 1400 is a -- is a
11 process using -- using a number of different
12 assumptions for release fractions and -- and
13 overall intake, given a -- a pile of material
14 in any form and you -- the assumptions are
15 given for material in various forms, whether
16 it's used in a hood or in a glovebox or -- and
17 it comes out with a probability of intake given
18 various things, and it's a -- it's an accepted
19 -- scientifically accepted approach to defining
20 the upper limit of intake, given a certain
21 amount of material in a given location with
22 additional -- given facilities, and -- and then
23 that drives whether use of an air sampling
24 program or not --

25 **DR. MAURO:** Okay, then there's some missing --

1 'cause I have this model. There's some
2 through-put of thorium that's going -- that's
3 being processed.

4 **MR. RICH:** Now there's a Q value that defines
5 the amount of material involved.

6 **DR. MAURO:** That -- yeah, that's -- and it
7 moves through the system -- right? -- whether
8 it's a -- you know, it's incrementally brought
9 -- it's brought in, put in a hood, it's worked
10 on, moved out. Now -- but it was my
11 understanding that that -- the fundamental
12 approach was to take that through-put -- mass
13 through-put, which I believe was 60 kilogram a
14 year, and apply some factor which says -- the
15 magic number --

16 **UNIDENTIFIED:** Bronski's* number.

17 **DR. MAURO:** -- Bronski's number that says
18 there's a certain -- there's -- there's good
19 reason to believe that if you're -- for -- you
20 know, that the amount that might be inhaled is
21 ten to the minus six of the mass of material
22 that's been pushed through. Now, that might be
23 under conditions where there are no controls
24 whatsoever, I'm not sure; I haven't looked at
25 it.

1 **MR. RICH:** That's true. What Arjun was talking
2 about, ten to the minus ten, would apply some
3 other factors like whether it was in a
4 glovebox, in a -- in a hood or some other
5 factors where the assumptions for it being a
6 release fraction would be additive as opposed
7 to just a single release fraction.

8 **DR. MAURO:** But where I'm going with this is
9 the common sense approach. Say okay, let's say
10 that's all true. If you go to -- you do the
11 calculation, you say well, what is the
12 concentration of the thorium that would be in
13 the air that this person is breathing, and it
14 turns out to be -- if you go -- you start to
15 put in some of these reduction factors -- a
16 fraction of a microgram per cubic meter.
17 Intuitively that does-- unless you've got
18 yourself a very tightly-controlled glovebox,
19 negative flow, all the good things going for
20 you -- which basically says nothing's coming
21 out of that glovebox --

22 **DR. NETON:** Well, wait a second, though, that -
23 - that fraction -- is that a -- an annual
24 intake per cubic meter?

25 **DR. MAKHIJANI:** Annual average, yes.

1 **DR. NETON:** Okay, so -- so -- so it's -- I
2 agree with you, but if you're -- if you -- if --
3 -- that's assuming it's an annual average over a
4 whole year --

5 **DR. MAKHIJANI:** No, no --

6 **DR. MAURO:** That's --

7 **DR. MAKHIJANI:** -- no, no, this is assuming the
8 work is done over a week.

9 **DR. MAURO:** All over a week.

10 **DR. NETON:** Okay, over a week, but what I'm
11 saying is --

12 **DR. MAURO:** (Unintelligible)

13 **DR. NETON:** I agree with you, but if you're
14 grinding, you can certainly get much higher
15 concentrations. We know that. We've seen that
16 in --

17 **DR. MAURO:** And I'm -- and I'm --

18 **DR. NETON:** -- many other sites.

19 **DR. MAURO:** -- okay with that, too, if there's
20 -- if you know you've got it in a box, so if
21 there's no way it's coming out of that box.

22 **DR. NETON:** But as an average of a microgram
23 per cubic meter --

24 **DR. MAURO:** Yes.

25 **DR. NETON:** -- there could certainly be spikes,

1 if you're grinding, that go much higher. I
2 guess that's what I'm trying to say.

3 **DR. MAURO:** Well, all I'm saying is that what I
4 -- what I'm hearing is, though, the -- the
5 model you have is effectively saying that the -
6 - the amount of thorium that's airborne and
7 that's being taken in -- if you calculate --
8 you go through the calculation, I come up with
9 on the order of perhaps a fraction --

10 **MR. RICH:** That's a disconnect, as Jim pointed
11 out.

12 **DR. MAURO:** Well, but wouldn't that -- but --
13 well, even if you collapse it down to a week,
14 let's say all the thorium was processed in --
15 'cause you know -- all the thorium was
16 processed in a short period of time, we're
17 still talking in the microgram per cubic meter
18 range, which might be right -- don't get me
19 wrong. It might be right, but -- but my
20 experience is if -- unless you have wicked
21 controls at work that are containing that
22 material, your -- your dust-loading associated
23 with mechanically handling any kind of metal is
24 going to be a lot higher than the microgram per
25 cubic meter range.

1 **DR. NETON:** Inside of a hood.

2 **DR. MAURO:** Yeah -- well, that's what I'm
3 saying --

4 **DR. NETON:** That's what I'm saying, you've got
5 -- you've got to take -- they took into account
6 I think a shrouded hood.

7 **MR. RICH:** Of course, you bet.

8 **DR. NETON:** Now one could argue whether that
9 was appropriate or not, but --

10 **DR. MAURO:** That's all I'm coming from.

11 **DR. NETON:** Yeah, and that's -- I think that's
12 probably on the table for discussion, but I
13 think your calculation -- they got the ten to
14 the minus tenth by using all these other
15 modifying factors that account for decreasing
16 the dispersibility of the material.

17 **DR. MAURO:** But even at ten to the minus six
18 you're in the microgram range, so you're
19 bringing it down to the --

20 **DR. NETON:** Right.

21 **DR. MAURO:** -- ten to the minus three microgram
22 range, and that's kind of the -- that's the
23 kind of number -- and I -- you know, when I
24 look at a number I just say just sort of step
25 back and say does this sort of ring true. I

1 say -- in my mind I say well, it's -- it's
2 possible, but you've got to have a really well-
3 designed hood that's going to seal this thing
4 off and there's nothing coming out.

5 **DR. NETON:** I agree, and I think that's worth
6 exploring. On the table, though, is -- is
7 fundamentally is new Reg. 1400 even appropriate
8 to use, and I think Arjun is basically saying
9 he's not sure, he doesn't think so.

10 **DR. MAKHIJANI:** I'm uncomfortable with it. I
11 mean this is of course a decision that the --
12 that the -- to the Board. I think there are
13 two questions. I -- I -- I think that new Reg.
14 1400 is not designed for this kind of
15 application. It may be conservative in terms
16 of where you -- where you put your air monitors
17 -- I mean it has great detail about all of
18 that. But as a method of dose reconstruction,
19 it does raise a lot of questions. And then I
20 think it would at least merit some more stern
21 tests as to what you'd come up with if you
22 applied it in other circumstances.
23 And the second question it does raise is -- is
24 consistency.

25 **DR. NETON:** Well, I want to -- I want to

1 address that briefly is we did apply new Reg.
2 1400 at Y-12, if you remember. At the end of
3 the day, when we got down to those couple of
4 laboratories where there were small kilogram
5 quantities of thorium, we proposed new Reg.
6 1400 and we got agreement that that was a
7 reasonable thing to do for those small
8 laboratory operations that probably handled
9 them in a hood and did very minimal processing
10 and that sort of thing. So there is a --

11 **DR. MAKHIJANI:** Your memory is better than mine
12 --

13 **DR. NETON:** Well, I remember this very
14 distinctly because I was very happy that we got
15 an agreement, yeah. And we can pull a
16 transcript and pull out the record if we want
17 to, but it's there.

18 **DR. MAKHIJANI:** No, no --

19 **DR. ULSH:** It's there, it's there.

20 **DR. NETON:** It's there, and so my point is the
21 inconsistency argument is really not there.

22 **MR. GRIFFON:** But what about the larger -- you
23 didn't see it appropriate for -- yeah.

24 **DR. NETON:** Now the larger issues -- now I'll
25 grant you that we didn't apply or propose new

1 Reg. 1400 for the larger processes at Y-12, for
2 the very reason that we didn't know what they
3 did. And we -- we ran across those articles,
4 like you did, that said they dropped 600
5 kilograms out of the machine somehow. Well,
6 how are we going to model that? We have no
7 idea -- you have to have some idea of what they
8 were doing. We didn't. And they were starting
9 with essentially powders and materials that
10 were very easily dispersed. In this particular
11 operation it seems to me you've got a hunk of
12 metal, and there was some grinding to do some
13 burrs, and I think that there -- it's a -- it's
14 a limited operation and limited scope, that one
15 -- (unintelligible) that one could come up with
16 a bounding scenario, and whether this exact
17 analysis is appropriate or not I think is up
18 for debate, but I think there is a way to move
19 that forward somehow, and so that's --

20 **MR. RICH:** And by the way, I want to say, too,
21 that based on our interviews, you know, six
22 kilograms per operation was (unintelligible)
23 and that's -- that's -- that's modeled on the -
24 - on the high side. A lot of the operations
25 were in 500 grams or -- or so, so they -- there

1 were a lot of small parts as opposed to your
2 large parts. And then when you're handling a
3 chunk of -- of course, you know, doesn't take a
4 very big chunk of thorium to weigh a lot, but -
5 - but the fact that it wasn't put into a
6 process, it wasn't tumbled and stirred up, per
7 se, it was handled as a chunk that was -- that
8 was trimmed. And when it was when it was
9 chunked up in the machines a little bit -- and
10 by the way, the other things, too. We used a -
11 - a -- an outside limit of ten percent waste,
12 which was -- according to the interviews again
13 -- was on the high side, precious little waste.
14 And then that was boxed up and -- and shipped
15 back to Y-12.

16 **MR. GRIFFON:** So I -- I guess really the -- the
17 things that we have to have concurrence with is
18 the -- the -- the how much, the -- what process
19 and controls, to the best we can substantiate
20 them, what was going on. And then, dependent
21 on those two factors, the who may or may not
22 matter, as Brant just described. The -- the
23 numbers -- I mean it -- it may be important if
24 we had some question about -- you know, if the
25 processes -- if we see any information that

1 says the processes were more extensive or
2 weren't controlled as well as described here --

3 **DR. NETON:** I agree.

4 **MR. GRIFFON:** -- but otherwise, you might --
5 you -- we might be right. We might say we
6 don't need to really know the who is it. And --
7 - and would there be a position -- I mean it
8 seems like the doses are -- are fairly trivial
9 if you use your current equation, so you
10 wouldn't apply this across --

11 **MR. RICH:** No, we really wouldn't.

12 **MR. GRIFFON:** -- you wouldn't apply it at all
13 to anyone, no --

14 **MR. RICH:** Wouldn't apply it --

15 **MR. GRIFFON:** -- thorium dose at all.

16 **MR. RICH:** -- you wouldn't apply it to the
17 thousands of metric tons at Fernald. You know
18 that's not inappropriate.

19 **MR. GRIFFON:** Yeah. Oh, no, no, no, no, I
20 meant would you apply -- it seems like they're
21 trivial doses so you probably wouldn't add in a
22 thorium --

23 **DR. NETON:** We've adopted --

24 **MR. GRIFFON:** -- dose --

25 **DR. NETON:** -- a policy where any dose of -- I

1 think it's less than one millirem, is that
2 right?

3 **MR. RICH:** Well, three is what Liz takes care
4 of, if it's less than three --

5 **DR. NETON:** Is it three committed or is it
6 three --

7 **MR. RICH:** It's (unintelligible) dose, I think.

8 **DR. NETON:** -- annual?

9 **MR. RICH:** Yeah.

10 **DR. NETON:** In general if it's less than one
11 millirem per year, we -- we call -- we consider
12 that a de minimis dose calculation and don't
13 add that into (unintelligible) --

14 **DR. MAURO:** And -- and --

15 **MR. GRIFFON:** So then we -- you know, we might
16 just consider, you know, that question of is --
17 is the 14-- is the new Reg. 1400 approach
18 appropriate; do we agree with the sort of
19 control factors that were put into the
20 equation.

21 **DR. MAURO:** Uh-huh. See, then --

22 **MR. GRIFFON:** And if we do, then -- then the
23 question becomes is it even over the three
24 millirem. If it is, maybe you apply it to
25 everybody if -- you know.

1 **DR. NETON:** Well, right, yeah. I mean --

2 **MR. GRIFFON:** Yeah.

3 **DR. NETON:** -- if -- if one would not buy into
4 the argument that there was a shrouded hood but
5 no protection -- I don't know, what is there, a
6 factor of ten difference there or something
7 probably?

8 **MR. RICH:** Yeah.

9 **DR. NETON:** So then you're up to 30 millirem
10 and then you back off somewhere else, you get
11 to 300. It seems from --

12 **MR. GRIFFON:** Yeah.

13 **DR. NETON:** -- I haven't looked at this in
14 detail, but it seems to me there's some
15 bounding analysis (unintelligible) --

16 **MR. GRIFFON:** Well, that's what I'm saying. If
17 it gets -- if it gets to those higher
18 increments, then I think you need to start
19 considering the who --

20 **MR. RICH:** And let me -- let me just add --

21 **MR. GRIFFON:** -- and can you identify them,
22 that's my -- you know, we've been down that
23 before, yeah.

24 **MR. RICH:** Let me -- let me add just one more
25 caveat if I -- if I could. The reason for

1 using 1400 is because it -- because of the
2 design. It was designed to be grossly
3 conservative, grossly conservative. And so we
4 -- we felt like using this would at least bound
5 a -- a -- an operation that was clearly minimal
6 in -- in nature, both from a quantity
7 standpoint and in what they physically did to
8 the material itself. There was no processing
9 of powders. There was no chemical extraction,
10 fluorination or -- or metal forming and things
11 like that. We see a note in a couple of the
12 reports that they may have done a -- a little
13 forming on very small chunks and shearing of
14 them. You know, the quantity of material
15 becomes so low that it's like dealing with a
16 Coleman lantern mantle and -- and so we felt
17 like it was bounding on the high side. And
18 functionally, just to see if -- if the logic of
19 the minima exposure potential was real and --
20 and we're satisfied that indeed the reason why
21 there is no data in the claimant file rela-- or
22 incidents and the like is because there was no
23 exposures.

24 The -- the other thing of course is that these
25 were special order or special projects. They

1 attracted a lot of attention. Now if --
2 realizing that we don't take a lot of credit
3 for our functioning comprehensive program, but
4 nonetheless, there was -- we are assured that
5 there was air monitoring, contamination control
6 and everything that would go along with that,
7 and there's nothing to indicate anything more
8 than what our logic would present to us.

9 **MR. GRIFFON:** So there's -- was air monitoring,
10 you just haven't uncovered those results.

11 **MR. RICH:** It's not identified as a thorium air
12 monitoring.

13 **MR. GRIFFON:** Oh, it's gross alpha air
14 monitoring.

15 **MR. RICH:** It's gross alpha.

16 **MR. GRIFFON:** Okay.

17 **MR. RICH:** And so --

18 **MR. GRIFFON:** Right.

19 **MR. RICH:** -- with that, we just -- we -- we
20 have been reassured that there was --

21 **MR. GRIFFON:** Controls, right.

22 **MR. RICH:** -- an excess of controls because it
23 was a special project.

24 **DR. MAKHIJANI:** Now -- now you have gross alpha
25 monitoring from the time that you did --

1 because that would solve --

2 **MR. GRIFFON:** For that area or that --

3 **DR. MAKHIJANI:** -- a lot of problems. We could
4 cut this short very easily.

5 **MR. RICH:** The problem, Arjun, is that to -- we
6 -- we have air monitoring data, but to go
7 through 17 years of operation and pick out air
8 monitoring data -- you can pick out air
9 monitoring data in '80/'81, for example, and
10 that would -- you know, that will give you
11 uranium, primarily, 'cause they came in for an
12 hour and a half Tuesday afternoon and did this
13 piece and then -- and then went away, and so --

14 **MR. GRIFFON:** So you can't --

15 **MR. RICH:** -- that's the kind of special
16 project --

17 **MR. GRIFFON:** -- pinpoint when it would have
18 been the thorium process going on --

19 **MR. RICH:** -- and that's the reason why they
20 weren't identified as thorium samples, I
21 suspect.

22 **DR. MAKHIJANI:** But wouldn't it be indicative
23 of the industrial hygiene conditions in that
24 area anyway if you -- if you got your -- you
25 know, if you got -- thorium is not that

1 different, in terms of specific activity, from
2 uranium. You know, I guess highly enriched
3 uranium is much more --

4 **MR. RICH:** A factor of --

5 **DR. NETON:** Dose per unit intake is much
6 higher.

7 **DR. MAKHIJANI:** Sorry?

8 **DR. NETON:** The dose per unit intake is much,
9 much higher.

10 **MR. RICH:** Yeah.

11 **DR. MAKHIJANI:** Yeah, but -- but if you have --
12 if you have gross alpha air monitoring data it
13 at least will give you some idea of industrial
14 hygiene (unintelligible) --

15 **MR. RICH:** Again -- again, the other problem is
16 when you're -- when you're processing even
17 enriched uranium, you're dealing with
18 quantities that are way over what they handled
19 with the thorium, so you know, the -- the ratio
20 of material and the -- and then the
21 proportionate release, if any, would be -- be
22 (unintelligible) --

23 **MS. MUNN:** It would be small, wouldn't it?

24 **MR. RICH:** Yes, it would be.

25 **DR. NETON:** (Unintelligible) on this, was there

1 some -- I'm sorry --

2 **MS. MUNN:** (Unintelligible)

3 **DR. NETON:** -- some way to sort of semi-
4 empirically validate this model. That is, we
5 know -- like John said, we've got a pretty good
6 history of what grinding operations generate.
7 And if you adjust for the specific activity of
8 the materials, you could take a lot of uranium
9 grinding -- we know (unintelligible) grinders,
10 we know about hand grinding and we know the --
11 the MAC air concentrations.

12 **DR. MAKHIJANI:** Right, yes.

13 **DR. NETON:** And my thought was if we would take
14 some of those comparable values and apply some
15 usage factors, you know, whatever -- they
16 inserted ten minutes at a time, this or that,
17 apply some control factors and see if this is
18 in the right ball park to sort of validate
19 that.

20 **DR. MAKHIJANI:** I think that this would be --

21 **MR. GRIFFON:** That'd be useful, yeah.

22 **DR. MAKHIJANI:** -- this -- this would -- I --
23 I'm not saying that this is right or wrong.
24 I'm just saying when I look at this, this
25 number is so small --

1 **DR. NETON:** It seems pretty small.

2 **DR. MAKHIJANI:** -- that any --

3 **DR. ULSH:** 'Cause it is.

4 **DR. MAKHIJANI:** I think we'd agree
5 (unintelligible) .02 becquerel per year is a
6 very minuscule number.

7 **MR. CHEW:** Well, that's because of low
8 activity, you know that.

9 **DR. MAKHIJANI:** We settled that, I know.

10 **DR. NETON:** But -- but again, I think as some
11 sort of semi-empirical -- I don't know what
12 word to use -- validation, using first, you
13 know, real data from similar operations, one
14 could say this is in the right ball park -- or
15 if it's not, maybe rethink and -- and back up
16 and, again, move it up.

17 **MR. GRIFFON:** Only as a means to validate.
18 We're not using other site data to reconstruct
19 dose.

20 **DR. NETON:** Oh, no.

21 **MR. GRIFFON:** Right.

22 **MS. MUNN:** No.

23 **DR. MAKHIJANI:** But some validation exercise,
24 for this number that doesn't look credible, is
25 necessary.

1 **DR. MAURO:** Do you have information on the
2 types of controls that were in place when they
3 were doing these minor machining operations
4 that is (unintelligible) inside?

5 **MR. RICH:** What -- what they described, yeah.
6 I mean --

7 **DR. MAURO:** Because we know the pro-- you know,
8 the effectiveness of a hood in terms of --

9 **MR. RICH:** Yes.

10 **DR. MAURO:** -- back-flow out of a hood.

11 **MR. RICH:** And that's -- that's the factor we
12 used.

13 **DR. MAURO:** Okay.

14 **MR. GRIFFON:** I was thinking a -- of --

15 **MR. CHEW:** (Unintelligible) a hood like you
16 think, like in a bench hood, John.

17 **MR. RICH:** It's a shrouded --

18 **MR. CHEW:** These are -- remember, this is --
19 think -- picture a lathe, put a coffin over it.

20 **DR. MAURO:** You put something over it.

21 **MR. CHEW:** Yeah.

22 **DR. MAURO:** But there's data on how effective
23 that is --

24 **MR. CHEW:** Oh, yeah, yeah, and -- or -- or a
25 nozzle right up because (unintelligible) --

1 **MR. RICH:** The -- the face -- the loss of
2 (unintelligible) --
3 (Whereupon, Dr. Mauro, Mr. Chew and Mr. Rich
4 spoke simultaneously.)

5 **DR. MAURO:** There's a -- there's a ton of
6 literature just on that subject that supports
7 the Chapman Valve work. There's an incredible
8 amount on machining operations, but of course
9 these were larger scale operations. This
10 wasn't just chipping off a little
11 (unintelligible). These things were -- but the
12 data's out there on the effect 'cause what they
13 did was -- Harrison Kingsley and others, they -
14 - they said okay, this is -- this is 1940s --
15 this uranium milling operation is a disaster in
16 terms of the dust it generated, and then they
17 started to experiment with different types of
18 controls in terms of -- especially different
19 types of ventilation systems, kinds of hoods
20 you're talking about, and you could see the
21 nosedives -- the dust loading just nosedived
22 and you could start to get protection factors
23 out of that.

24 **MR. GRIFFON:** Can I propose a few action items
25 for this item? At this point I think if NIOSH

1 -- if you're in agreement, Brant, maybe NIOSH
2 can come up with a --

3 **DR. ULSH:** I think I am because
4 (unintelligible) --

5 **MR. GRIFFON:** Jim just nominated you to --

6 **DR. NETON:** It's the appropriate thing for us
7 to do.

8 **MR. GRIFFON:** -- yeah, look at the semi-
9 empirical approach to validating --

10 **MS. MUNN:** Suggested.

11 **MR. GRIFFON:** -- validating these numbers,
12 right, that -- that's item one. The other
13 things I was going to ask for is -- to the
14 extent you already have them available, I'm not
15 looking for necessarily new research or work,
16 but you have some of these references, if they
17 could be posted. Or Brant, you said these two
18 individuals and others have been interviewed.
19 If you have any of those interview notes --

20 **DR. ULSH:** REDACTED and REDACTED we
21 (unintelligible) --

22 **MR. GRIFFON:** -- they might be useful, and it
23 might be good for us as a workgroup to go back
24 and say --

25 **UNIDENTIFIED:** I thought we'd (unintelligible)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

--

MR. GRIFFON: -- several indi-- individuals involved were interviewed and -- and to -- you know, to a person they all agreed that this was the production, this was the -- yeah.

MR. CHEW: I have a question for Bob. Bob --

MR. MEYER: Yes, sir.

MR. CHEW: -- when -- when you -- when you were -- folks there at Y-12, when you put a thorium part that you were getting ready for a finished part for a weapon or a device, when you -- you -- didn't you chuck it and actually put it on a lathe? I mean you didn't actually put a grinder inside of it to trim things like that. I'm just asking the question because, to me, I think that in order to get a finished part you don't actually use a grinder as we think that -- you know, (unintelligible) stuff -- yeah, it's much more of a chuck, isn't it, and then you trim it.

MR. RICH: It all depends on how close it fits. You may -- you may just trim it just a little bit with (unintelligible) --

MR. CHEW: And cut it. Matter of fact, one of the operations they describe was kind of a

1 shearing operation by just putting the shear
2 and just trim it off.

3 **DR. NETON:** We know what shearing generates,
4 too.

5 **MR. CHEW:** Yeah, and so I want to make sure
6 that we apply the right factor here of release
7 factor, and that's my point.

8 **DR. MAURO:** Yeah, and I think the --

9 **MR. CHEW:** The model.

10 **DR. MAURO:** -- (unintelligible) is out there,
11 the information is out there.

12 **MR. GRIFFON:** Are there other actions on -- on
13 the -- this is mainly related to thorium, I
14 take it. Are there other actions related to
15 the other radionuclides, other?

16 **DR. MAKHIJANI:** Mark, there are two action
17 items for us, I think, something that I -- a
18 little bit of a disconnect in that. I did not
19 know that the neptunium and curium information
20 is in a special order log book. I have to go
21 back and check on that. I think on americium
22 we're in basic agreement that there's a lot of
23 data. We're also in agreement that the number
24 of samples went up from '63 to '67. I have
25 only one question about that, is did the number

1 of samples go up because some workers were
2 monitored or because the operations were being
3 -- more and more workers, and that's not clear.
4 **MR. RICH:** Yeah, yeah, the -- in -- in -- in
5 the '63 to '65 time frame, that's when the
6 weapons from the -- the stockpile started to
7 come back, americium-2-- plutonium-241 and
8 americium build-up started to create some
9 problems so they reprocessed that material.
10 That's the same time when they decided to make
11 americium-241 processing as a product a part of
12 a Rocky Flats operation, and that's the time
13 when they -- prior to that time the americium
14 was low enough that they couldn't -- as
15 REDACTED said, either -- they couldn't even
16 find enough americium to prove out the
17 analytical process. It was very, very low and
18 not separated per se because it was special
19 material for the weapons program itself. After
20 they started getting it back and then they got
21 some reactor grade plutonium where the
22 americium was higher to feed the americium
23 production program, and as a consequence then
24 that's when the americium analytical process,
25 the bioassay process and the (unintelligible)

1 americium bioassay (unintelligible).

2 **DR. MAKHIJANI:** Okay. So there's some kind of
3 documentation about the phases and the number -
4 - number of bioassays that were being done,
5 because that was not in the (unintelligible).

6 **MR. RICH:** Well, I think we -- we indicated
7 that the bioassay -- I think we have a chart of
8 the number of bioassays by year.

9 **DR. MAKHIJANI:** Yes, I've seen that.

10 **MR. CHEW:** What are you looking for, Arjun?
11 I'm not sure -- sure. You aren't asking me --
12 'cause --

13 **DR. MAKHIJANI:** I'm just wondering whether --

14 **MR. CHEW:** -- Bryce is saying it's a direct
15 function of the number of weapons returns and
16 also the amount of people that would be working
17 on that return.

18 **DR. MAKHIJANI:** Yes, that's the only question.
19 If that is the case, then americium would be a
20 settled question. And obviously you -- I'm
21 just asking whether you have verified that that
22 is the explanation rather than some workers not
23 being monitored for americium.

24 **MR. CHEW:** Okay.

25 **DR. MAKHIJANI:** In which case you would need

1 some kind of a coworker model for that.

2 **MR. RICH:** To begin with, the americium process
3 was tended and fed by a relatively few number
4 of people, but then the program grew and it was
5 -- it became -- more people involved, so --

6 **DR. MAKHIJANI:** Okay. Well, that -- if that is
7 documented in your classified review, then
8 there's no americium issue, I think.

9 **MR. CHEW:** We haven't -- I haven't documented
10 the number of weapons that came back in
11 (unintelligible) --

12 **DR. MAKHIJANI:** No, workers.

13 **MR. CHEW:** -- function of time, but -- the
14 amount of workers that might have been
15 involved? Let's see, I'm trying to remember.
16 I don't think we put that in (unintelligible)
17 classified --

18 **MR. RICH:** No, we did not.

19 **MR. CHEW:** No. Let's -- (unintelligible) let's
20 try to answer your question. What would you be
21 looking for, Arjun? I want to be responsive
22 here 'cause we think we have this issue
23 (unintelligible) resolved here.

24 **MR. GRIFFON:** You're looking to see if all the
25 -- all the individuals working in those areas

1 from then on were monitored or -- or that you
2 need a coworker model, is that --

3 **DR. MAKHIJANI:** Yeah, was the process same
4 through -- in the '60 -- post-'67 and pre-'67
5 period, then the process changed at some time,
6 the americium process?

7 **MR. RICH:** It -- it started around '65 or a
8 little bit before.

9 **MR. CHEW:** You're right, though, there was --
10 there was --

11 **MR. GRIFFON:** Yeah, the separation process
12 changed -- yeah.

13 **DR. MAKHIJANI:** In the chemistry of americium,
14 now I've forgotten the date.

15 **MR. RICH:** It changed to -- to a molten salt --

16 **MR. CHEW:** Yeah, yeah.

17 **DR. MAKHIJANI:** Wasn't it in '67 or something?

18 **MR. CHEW:** Well, the quantity of americium
19 start to accumulate at Rocky Flats
20 significantly -- okay? -- because of the return
21 -- taking the weapons, returning and removing
22 it, and so there was a campaign also because
23 americium became quite a sellable commodity and
24 --

25 **UNIDENTIFIED:** Yeah.

1 **MR. CHEW:** -- because people were buying it,
2 you know.

3 **MR. RICH:** I think what Arjun was talking about
4 is the chemical process or metallurgical
5 process of separation, so --

6 **MR. CHEW:** I see that. We used ion exchange
7 columns originally to separate and we put the
8 plutonium in, and they later on they used a
9 molten salt extraction to get the americium
10 back in the metal form so you can sell it as a
11 metal form, so yeah, there are some processes,
12 mainly because there was a quite a bit of
13 americium was accumulating at Rocky Flats.

14 **DR. MAKHIJANI:** My sort of residual concern
15 here is (a) that if -- I don't know whether a
16 coworker model is needed or not, maybe not, and
17 they if it is needed, whether the process is
18 the same from the time you have the data to --
19 I guess you have data from '63 to '67, so you'd
20 probably be able to construct it anyway.

21 **MR. RICH:** There's a high degree of sensitivity
22 and awareness -- exactly what they were doing,
23 and as the process was -- was in-- installed,
24 the biological and health -- radiological
25 safety programs kept pace.

1 **MR. CHEW:** I just want to clarify, Arjun. Pro-
2 - we said the process changed. There were
3 several things they did with americium, of
4 which required different processes.

5 **DR. MAKHIJANI:** Right.

6 **MR. CHEW:** That's different than -- than that
7 we changed the process to --

8 **DR. MAKHIJANI:** No, I was --

9 **MR. CHEW:** -- handling the weapons returns.

10 **DR. MAKHIJANI:** I was referring to the
11 extraction process for americium. There was a
12 wet process earlier, and then there was the
13 molten salt process.

14 **MR. GRIFFON:** The two different processes you
15 described, yeah, yeah. For the same operation.
16 That was for the same end, yeah, yeah.

17 **DR. MAKHIJANI:** That's as I understood it.
18 Maybe I'm wrong.

19 **DR. ULSH:** No, I think you're right.

20 **MR. GRIFFON:** That's correct, yeah.

21 **DR. MAKHIJANI:** And I don't think that whatever
22 residue issue there is is a -- is an SEC type
23 of issue. I think this is --

24 **MR. GRIFFON:** It may be a matter of whether you
25 need a coworker model or not, I think is what

1 Arjun's saying.

2 **DR. MAKHIJANI:** I think that is the only issue,
3 is whether you need a coworker model or not,
4 and I'm not in a position to say.

5 **MR. GRIFFON:** So there's no follow-up action on
6 this, I don't think.

7 **DR. MAKHIJANI:** Not -- yeah, not in this -- not
8 in this process, so far as I can see.

9 **MR. GRIFFON:** Okay.

10 **DR. MAKHIJANI:** So there's neptunium and curium
11 follow-up for us, and then I think on -- on
12 highly enriched uranium we are agreed that the
13 -- the monitoring was there and so there's no
14 issue. And the -- there's some question about
15 the storage time of U-233 and a factor of two
16 difference, and how you arrived at the ten
17 curie estimate.

18 **MR. RICH:** I'm just -- I'm just checking to see
19 whether you're reading your mail, Arjun.

20 **DR. MAKHIJANI:** Are you convinced?

21 **MR. RICH:** Yeah, you -- you always win. I --

22 **MS. MUNN:** Two points.

23 **MR. RICH:** I didn't indicate that I did not
24 assume full equilibrium with the thorium, as I
25 indicated in the response.

1 **DR. MAKHIJANI:** Okay. Yes, you did.

2 **MR. RICH:** Primarily because it grows in with a
3 1.9 year half-life.

4 **DR. MAKHIJANI:** Right.

5 **MR. RICH:** And -- and the material that came
6 from Oak Ridge had to have been separated
7 before that. But after a couple of years, why
8 then you've got as much as -- what I said was
9 ten curies, which is a problem. That's why
10 they had -- and that calculation was done only
11 to illustrate the reason why they had to do the
12 thorium strike. You simply can't handle the
13 stuff with 2.6 MeV gammas from --

14 **DR. MAKHIJANI:** Right.

15 **MR. RICH:** -- the thorium-228 daughters, so --
16 and -- and with as little as 20 kilograms,
17 you're going to wind up fairly quickly, after a
18 year or so, with something in the range of
19 eight to ten curies -- and -- and
20 (unintelligible).

21 **MR. CHEW:** Also Bryce did a gross calculation
22 on that, but that was only like a one-time
23 incident that they actually processed that 20
24 kilograms, though.

25 **DR. MAKHIJANI:** Oh, okay.

1 **MR. CHEW:** And later on they -- when the
2 material came in, it was downed and Bryce
3 assumed 50 parts per million of U-232. Later
4 on there's documented evidence is is that it
5 was down to like seven to eight parts per
6 million, which greatly reduced the curie
7 (unintelligible).

8 **MR. RICH:** (Unintelligible) seven to eight
9 parts per million.

10 **DR. MAKHIJANI:** So -- so ten curies is a kind
11 of an average number --

12 **MR. CHEW:** Oh, no --

13 **DR. MAKHIJANI:** -- which is claimant favorable.

14 **MR. CHEW:** -- way high.

15 **MR. RICH:** That's way high.

16 **DR. ULSH:** Way high.

17 **MR. RICH:** I just didn't give you the -- the
18 20, and -- and you caught that right away,
19 so...

20 **DR. MAKHIJANI:** All right, all right.

21 **MR. CHEW:** (Unintelligible) multiply 2.2, I saw
22 that.

23 **DR. MAKHIJANI:** I did the calculation. Let's
24 see, I -- I think -- I think that -- oh,
25 there's the tritium, and you said that you have

1 the tritium data in the -- in the DOE records.

2 **DR. ULSH:** Yes.

3 **DR. MAKHIJANI:** But there's no tritium data in
4 the HIS-20 database.

5 **DR. ULSH:** That's correct. HIS-20 contains
6 americium -- well, or -- let's start in order -
7 - plutonium, uranium, americium and gross
8 alpha. It doesn't contain tritium.

9 **DR. MAKHIJANI:** Yeah, so I guess --

10 **MR. RICH:** But it is in the claimant files.

11 **DR. ULSH:** Yes.

12 **DR. MAKHIJANI:** So long as the tritium data --
13 you know, there's a question whether the
14 tritium people were monitored, and if they
15 were, then there's no issue in regard to
16 tritium. But do we have a record of the
17 arrival of tritium or metal tritides at Rocky
18 Flats and the start of tritium monitoring?

19 **DR. ULSH:** Well, what I can tell you, Arjun, is
20 that --

21 **MR. RICH:** We have incident reports.

22 **DR. ULSH:** Yeah. And I've seen -- when I've
23 looked through claimant files, I've seen the
24 occasional tritium bioassay in --

25 **DR. MAKHIJANI:** Okay.

1 **DR. ULSH:** -- in the hard copy from the files.

2 **DR. MAKHIJANI:** Okay. Yeah. All right.

3 **MR. RICH:** But that parti-- that -- that
4 particular -- the arrival and release and
5 discovery was the subject of several incident
6 reports. That was well-documented.

7 **DR. MAKHIJANI:** I guess that -- did I cover all
8 the radionuclides? I think I did.

9 **MR. CHEW:** I hope so. There's only 1,800 in
10 the isotopic chart; you're at 1,799.

11 **DR. MAKHIJANI:** Yeah, I think -- I think I'm
12 done.

13 **MR. GRIFFON:** The only other thing I was going
14 to say -- I think we captured all the actions -
15 - the references for the thorium, there were a
16 couple mentioned today and I don't even know if
17 they're available. They were mentioned in the
18 interview as --

19 **MR. RICH:** They're on the O drive.

20 **MR. GRIFFON:** Oh, they are on the O drive.

21 **MR. RICH:** And I think --

22 **DR. ULSH:** They're on the site research
23 database for sure.

24 **MR. GRIFFON:** Maybe you can help us and put
25 them in the AB folder, you know -- yeah, just

1 make it easier. Okay.

2 **MR. RICH:** And -- and -- and the interviews, I
3 think they're available, too. At least we've
4 submitted them.

5 **DR. ULSH:** They're on SECAS, but I don't know
6 if you guys --

7 **MR. GRIFFON:** No.

8 **DR. ULSH:** You don't have access to that?

9 **MR. GRIFFON:** I haven't had access to that, no.

10 **DR. ULSH:** We'll get it for you. We'll get the
11 REDACTED -- you've already got the REDACTED
12 interview. We'll get the REDACTED for you.

13 **MR. GRIFFON:** And you said other peop-- other
14 individuals or --

15 **DR. ULSH:** Those are the two most helpful.
16 Right?

17 **MR. CHEW:** Yeah, they were very instrumental.
18 They were key people that handled clearly some
19 exotics. They were the key people.

20 **MR. RICH:** We have interviews with Ed Butcher*
21 and Bobby Oder* and a couple of others, so...

22 **MR. GRIFFON:** To the extent they were relied
23 upon. I'll leave it up to you guys to decide,
24 yeah, yeah. All right. And --

25 **MR. CHEW:** So we have no -- any issues still

1 left open?

2 **DR. ULSH:** Well, the -- maybe you could
3 summarize what you --

4 **MR. GRIFFON:** Yeah, I think -- I mean I just
5 gave the actions. I think I'm -- as of -- as
6 the thorium, it's the follow-up on the thorium,
7 that NIOSH will work on this semi-empirical
8 validation of the sort of upper bounding
9 approach laid out by the new Reg. 1400 approach
10 and provide references and interview notes as
11 applicable to support those models. The only
12 other action I have is SC&A's going to review
13 further this neptunium and curium in the
14 special dosimetry logs. Right?

15 **DR. MAKHIJANI:** That special order log books, I
16 think.

17 **MR. GRIFFON:** Yeah, and I think that we --

18 **DR. ULSH:** Special analysis.

19 **DR. MAKHIJANI:** Special analysis log books.

20 **MR. GRIFFON:** Special analysis log books.

21 **DR. MAKHIJANI:** Which we have -- or which is on
22 the O drive.

23 **DR. ULSH:** I think it's on the O drive.

24 **MR. GRIFFON:** Yeah, and I think we've closed
25 the door on the americium, I believe, and the

1 tritium, so I think we're -- we're satisfied
2 with those, yeah, and the enriched uranium,
3 right. And I think that's -- that covers all
4 our other radionuclides.

5 **DR. MAKHIJANI:** I believe so.

6 **DR. WADE:** We're chugging along.

7 **MR. GRIFFON:** Yep. Down to -- down to an hour.
8 Down to an hour now. Going to try to go --
9 exponential function somewhere here.
10 All right, third item. This is the log book
11 review.

12 **THE COURT REPORTER:** What about D and D?

13 **D AND D**

14 **MR. GRIFFON:** Oh, I'm sorry, D and D. I
15 skipped over number three, D and D review. And
16 I guess where we're at with this is sort of to
17 refresh on the matrix a little, maybe. The
18 question was that there's -- seems to be a gap
19 in the site profile, and also possibly in the
20 evaluation report that doesn't really cover the
21 D and D workers, so we were looking at whether
22 there was data available, external and bioassay
23 data available --

24 **MR. FITZGERALD:** Yeah, I think --

25 **MR. GRIFFON:** Yeah.

1 **MR. FITZGERALD:** -- the point here is -- is a
2 little bit counter-intuitive, and I think this
3 was even mentioned in the NIOSH response, that
4 you're talking about the '90s and 2000s, you
5 know, what are we talking about. And I think -
6 - here's a case where, unlike the earlier
7 years, you're not talking about perhaps
8 dosimeter -- dosimetry technology limitations
9 but more program management limitations and how
10 to live -- live the era. This is one part of
11 the history I actually can speak to more first-
12 hand. The concerns over how D and D was
13 managed on-site with the plethora of lower-tier
14 subcontractors was a constant worry from a
15 departmental standpoint because even though the
16 dosimetry was there and certainly the RadCon
17 manual and all the goodies, the concern was
18 that -- making sure that these were in force
19 down through the various tier of subcontractors
20 and that people were monitored when they should
21 have been monitored and -- and these records
22 were in fact centralized so they weren't
23 scattered in the -- because the subcontractors
24 weren't being required to submit I think was a
25 concern. So in this -- this issue, and this

1 frankly is the first site, particularly in the
2 SEC context, for you to come up against D and D
3 in a big way. We frankly were looking at the
4 issue not so much of the dosimetry technology,
5 although I think that's important because it
6 wasn't covered per se in the site profile, but
7 more looking at who was actually monitored, how
8 were they monitored, and whether in fact one
9 can validate that, you know, this was complied
10 with and they were in fact monitored. And the
11 process we've been going through is to figure
12 out and -- you know, I don't think we have any
13 preconceived notion how you can do this, but
14 maybe we did go into it thinking well, this was
15 the '90s, this should be pretty straightforward
16 -- trying to figure out okay, how can we
17 actually sort out who was monitored, how they
18 were identified to be monitored and how were
19 they identified, and I think we've established
20 -- I think NIOSH has confirmed it -- that it
21 seems that at Rocky Flats certainly rad worker-
22 2 training was the ticket to in fact be able to
23 do D and D in RCA, rad control areas. But then
24 you have a number of other workers who perhaps
25 were working in other areas of the plant that

1 weren't so designated, and -- and you always
2 had -- this -- this is of course the case
3 across the complex. You always had the case
4 where you -- you would bump up against legacy
5 material where, you know, you'd open a -- a
6 vent, you'd open up piping and you'd find
7 material unexpectedly, surprise, and then you'd
8 have to deal with some exposure and hopefully
9 you had some air sampling or lapel sampling or
10 whatever. But what we're after is some kind of
11 assurance, some kind of confidence that there's
12 a way that one could estimate dose in an
13 environment where you did have a lot of
14 workers, particularly lower tier
15 subcontractors, coming and going and how were
16 one -- how is one going to get a peg on what
17 that dose distribution happens to be. And to
18 borrow from Jim's comment a little earlier
19 today, for those cases where we found instances
20 such as lack of terminal bioassays and a couple
21 of other things where you didn't have
22 necessarily a backstop to your dose estimation,
23 is there a way -- a method, a coworker model
24 that would allow you to come up with a
25 reasonable dose estimation. And that's pretty

1 much in a nutshell. I think -- I think what
2 makes this a little more complex is that it's -
3 - it's less a technology issue, more a program
4 management issue, and I think there's a sense
5 that because it's only ten years ago it should
6 be kind of straightforward. It's not as
7 straightforward, and I think that's something
8 we got from the NIOSH response. But it becomes
9 particularly important and critical because I
10 think you're talking about a situation where
11 there were likely a number of workers, whether
12 they were on the rad worker-2 side or non-rad
13 worker-2 side, that didn't get caught
14 necessarily. Either they weren't -- they were
15 -- should have been rad worker-2 because they
16 were dealing with maybe contaminated areas, or
17 they weren't rad worker-2, weren't working in
18 contaminated areas, but may have been exposed
19 in the course of the work they did at the site
20 and, because they weren't terminally bioassayed
21 or something, may have gotten out of the system
22 without a record. And so that's kind of what
23 we're trying to pin down. It's really a
24 calibration, just trying to calibrate this
25 thing. Maybe it's more of a typical site

1 profile exercise that had not necessarily been
2 done, but that's the first step -- and this
3 sounds familiar I suppose at this point, the
4 first step to getting to the issue of is there
5 perhaps a dose distribution, a certain sense of
6 a categories of these kinds of workers, and a
7 confidence that we understand what kind of
8 dosimetry was in fact used such that we can
9 come up with a distribution that would be the
10 basis for a coworker approach. And I think
11 that would then be the answer to the question,
12 could you in fact, if you had a worker --
13 whether it's the rad worker-2 side or the non-
14 rad worker-2 side, D and D or non-D and D --
15 come out and that you would be able to come up
16 with an estimation or not. Right now we're
17 sort of operating in the dark because it really
18 hasn't been treated -- Rocky being the first
19 site that we're getting into it, and it's
20 understandable, we really haven't waded into
21 these waters. And yet I think because it's
22 within the scope of the SEC, it's almost
23 something we have to answer somehow, and that's
24 kind of where we -- we teed it up. And I
25 actually found the documentation that -- that

1 NIOSH provided in terms of the audits and the
2 procedures helpful because it's kind of useful
3 to know that this thing actually evolved from
4 the early '90s into the 2000s. It wasn't a
5 static situation. Definitions changed
6 somewhat. The understanding and awareness
7 haven't changed somewhat. In '93 the defense
8 board came into Rocky and actually made a
9 finding that there was a concern over the fact
10 that subcontractors in terms of the bioassay
11 program weren't being managed very thoroughly,
12 and that was a sort of a shot across the bow
13 that, you know, you needed to tighten up on the
14 management themselves because it was pretty
15 clear at that point that this is the beginning
16 of the D and D era in a sense, that there was a
17 potential problem that might arise because you
18 would not in fact include them in. And there
19 was subsequent findings by self audits that
20 there was a real compliance issue with the
21 subs, and yes, this was common across other D
22 and D sites, but I think at Rocky in particular
23 we were -- I was surprised that it was high as
24 almost 40 percent of the -- of the subs, you
25 know, terminated without a -- a termination

1 bioassay. That kind of raised some questions
2 about okay, now what do you do and are you able
3 to make an assignment without having perhaps
4 either a routine bioassay or a termination
5 bioassay, so what's -- what's the answer to
6 that? So that's kind of where we kind of came
7 out. Again, I think we teed up more issues
8 than we answered, but I think there's a -- a
9 need for some discussion about what the path
10 forward would be to sort of get to the point
11 where a coworker approach or something is
12 possible.

13 **MR. GRIFFON:** And I was just going to say that
14 at this point, during our review, so far as I
15 know, a coworker model hasn't been on the table
16 for the -- for this era, so that's the way
17 we're kind of looking at it right now, that --
18 you know, that --

19 **MR. FITZGERALD:** Well, I wouldn't even prejudge
20 it, but I think that's sort of where it would
21 sort of --

22 **MR. GRIFFON:** May-- right.

23 **MR. FITZGERALD:** -- imply that --

24 **MR. GRIFFON:** It may evolve there, yeah. Yeah.

25 **MR. FITZGERALD:** -- that would be the direction

1 that you would go if in fact there were some
2 legitimate gaps that would have to be
3 addressed. So far I think --

4 **MR. GRIFFON:** Okay.

5 **MR. FITZGERALD:** -- there's some indications,
6 but we don't have actual hard -- hard data,
7 actual records.

8 **DR. ULSH:** Well, without taking up the issue of
9 whether or not there are gaps -- without taking
10 up the issue of whether or not there are people
11 who should have been monitored but weren't,
12 let's set that aside just for a minute or two,
13 OTIB-58, which is the external coworker model,
14 currently goes through 2005. OTIB-38, however,
15 does not. It goes to 1990, I believe. So if
16 we were to agree, Joe, that, you know, we need
17 to expand OTIB-38 to cover up through 2005 --
18 just in case there is someone --

19 **MR. FITZGERALD:** Right.

20 **DR. ULSH:** -- who should have been monitored
21 but wasn't, would that settle the issue -- I
22 mean is that --

23 **MR. FITZGERALD:** Well, I think --

24 **DR. ULSH:** -- where we could get to?

25 **MR. FITZGERALD:** -- I think the only question

1 in my mind, though, is if -- it sort of gets
2 back to the question we're trying to resolve
3 with the general population, which was what --
4 what was the circumstance in terms of workers
5 who were receiving exposures but may not have
6 been monitored. And I think there's at least
7 two circumstances that we identified in our --
8 in our review, one of which was of course these
9 -- these workers that were deemed as working in
10 areas that would have radiation exposure, at
11 least 100 CED*, and they were in fact the
12 trained rad worker-2 and the rest of it and
13 would be receiving at least annual bioassays.
14 That's sort of a category and the question is -
15 - and this was the question I think was raised
16 back in August, if I'm not wrong, Mark, which
17 was were they in fact bioassayed as advertised,
18 that kind of thing. And that's more of a
19 management question, a validation issue, and
20 there's where I think the notion in the
21 workgroup was to somehow cross-walk between the
22 people that were designated rad worker-2 and
23 see if in fact they did come away with -- with
24 -- with the routine bioassays as they were
25 supposed to. And this is the group that would

1 have been exposed so you certainly would expect
2 to have them bioassayed on a routine basis.
3 The other category, though, is also a concern,
4 which is what about everybody else that were at
5 the site who may not have been working in
6 designated RCA areas, but you know, admittedly
7 were likely to have some potential for
8 exposure, how were they handled? And I think
9 the one thing that gave me some pause was the
10 response that the exposure would be likely
11 very, very small and would be encompassed by
12 the maximizing assumptions used. I don't know.
13 I mean I think that's part -- part of what we
14 need to establish is what were the doses. What
15 -- you know, there's no data in the site
16 profile, so it's kind of hard to even know how
17 that comes out.
18 So the answer to your question, I think we need
19 some characterization issue. I don't think it
20 is something that is obvious. We've been doing
21 it sort of second-hand through audit reports
22 and through secondary documents, but you know,
23 the question of what were these doses, were
24 they substantial, were they minimal, and in
25 fact are the maximizing assumptions such that

1 hardly anybody would be expected to exceed
2 those. If that were the case, then I guess
3 wouldn't be a topic we'd even want to talk
4 about 'cause it'd be relatively small.
5 And -- and then getting to the coworker
6 modeling issue, I guess I would need to know
7 better -- as I recall, there are ratios for
8 each site that were based on different eras,
9 and I guess for Rocky -- I mean in terms of the
10 -- was it --

11 **DR. ULSH:** 1952?

12 **MR. FITZGERALD:** -- '52, wasn't there some site
13 specifics as well as the aggregate, and the
14 site specific would reflect the experience at
15 Rocky with --

16 **DR. NETON:** That was through '52, the
17 construction worker.

18 **MR. FITZGERALD:** I'm just trying to figure out,
19 you know, the -- you've got the external that
20 we've -- the -- tailored to site specific
21 experience, that you're using experience at the
22 site with construction workers per se,
23 construction workers that worked in the D and D
24 era, so that would probably be a pretty good
25 fit.

1 **DR. ULSH:** Yeah, I think so. Uh-huh.

2 **DR. NETON:** My recollection of the coworker
3 issue at Rocky, though, was that they had eased
4 off on the bioassay as a -- as a tool and
5 supplemented that with breathing zone air
6 samples. Is that not right?

7 **DR. ULSH:** They eased off the bioassay, but the
8 breathing zone sampling, the -- the DAC hour
9 tracking using sampling was layered on top of
10 the routine bioassay program.

11 **DR. NETON:** So yeah, you've got a much more
12 sensitive monitoring program with the breathing
13 zone air samples than you would have say a --
14 certainly an annual bioassay. I mean --

15 **MR. CHEW:** That's true, uh-huh.

16 **DR. NETON:** -- you could get down to --

17 **MR. GRIFFON:** That was the notion, yeah.

18 **DR. NETON:** And so this would be the first
19 coworker model that we would reconstruct that
20 would rely on breathing zone air samples, if we
21 did --

22 **DR. ULSH:** Now wait a minute --

23 **MR. GRIFFON:** We haven't seen --

24 **DR. ULSH:** -- hold on.

25 **DR. NETON:** If we did, I'm just saying if we

1 were to use -- see, otherwise then you'd take
2 an annual bioassay sample and you'd come up
3 with a very large missed dose, but if you have
4 BZ pumps on people, you can get down to 40 DAC
5 hours a week.

6 **MR. POTTER:** This is -- this is Gene Potter. I
7 have a comment.

8 **DR. NETON:** Yeah.

9 **MR. POTTER:** Yeah, the -- during most of the D
10 and D era -- era, we actually relied on early
11 fecal sampling --

12 **DR. NETON:** Oh, okay, that's even --

13 **MR. POTTER:** -- and investigated hundreds of
14 cases per year.

15 **DR. NETON:** Okay.

16 **MR. POTTER:** And those dose -- those -- the
17 distribution of those doses certainly would be
18 available.

19 **DR. NETON:** Okay, that's even better --

20 **MR. GRIFFON:** Those -- those fecal samples were
21 triggered by BZAs. Right? Is that...

22 **MR. FITZGERALD:** That's what my understanding -
23 -

24 **MR. GRIFFON:** They weren't routine fecal, they
25 were special --

1 **MR. POTTER:** Right, they -- actually they were
2 triggered by a number of different workplace
3 indicators, nasal swabs, personnel
4 contamination, contamination inside a
5 respirator, a host of things that we developed
6 criteria for.

7 **DR. NETON:** Okay.

8 **MR. RICH:** Detectable levels are very low
9 there.

10 **DR. ULSH:** Good, Gene.

11 **MS. MUNN:** Yeah.

12 **MR. GRIFFON:** Yeah, I don't think we have an
13 argument that there -- there's enough data
14 there to build a coworker model. I'm -- I mean
15 I think there probably are pieces of it around.
16 We haven't seen it, really --

17 **DR. ULSH:** 'Cause we haven't done it yet.

18 **MR. GRIFFON:** Right, you haven't done it.

19 **MR. FITZGERALD:** Right, and that -- that's part
20 of the problem I think that we -- we were
21 having is that, you know, we haven't seen the
22 data. We've only seen some evidence that --
23 that there are some gaps because of the way the
24 program -- because of the nature of the program
25 and the experience, and so the question is how

1 does one handle those gaps using the data that
2 we've never seen, which is sort of saying okay,
3 I guess we'll have to see how the data comes
4 out in terms of the basis for the model, and
5 it's a little bit tenuous at this stage, but --
6 **DR. ULSH:** I guess -- I'm taking a larger look
7 at this and whether it's an SEC issue or a TBD
8 issue, and if we could come to an agreement
9 that -- you know, questions aside about who
10 should have been monitored and (unintelligible)
11 --

12 **MR. FITZGERALD:** Right.

13 **DR. ULSH:** -- and whatever, those questions
14 aside --

15 **MR. FITZGERALD:** Right.

16 **DR. ULSH:** -- if we could come up with a
17 coworker model that we could agree on --

18 **MR. FITZGERALD:** Uh-huh.

19 **DR. ULSH:** -- I think then we could agree
20 perhaps that this is a TBD issue?

21 **MR. FITZGERALD:** If -- again -- again, assuming
22 the data is there, which I think our assumption
23 is the data is there, but since we've never
24 seen it, it's kind of -- it's kind of a
25 circuitous (unintelligible) if we can't say --

1 well, we understand the data's there, we
2 haven't seen it, haven't touched it, but you
3 know, we're assuming that it's com-- it's
4 fairly complete, but we don't want to make that
5 assumption necessarily because certainly this
6 is the first time we're wading into BZ
7 sampling, lapel sampling. We got testimony in
8 Denver where somebody felt that the DAC hour
9 tracking and the lapel sampling wasn't
10 necessarily adequate and that the routine
11 bioassay was -- was -- was secondary, some sort
12 of -- some -- some questions were raised and
13 this is one reason we wanted to get a little
14 bit clearer on what data exists. What data
15 exists and can one actually get to it, and is
16 it in fact complete enough to be a basis for
17 the model. And if so, I think those two
18 aspects of it --

19 **MR. GRIFFON:** Complete enough and
20 representative enough --

21 **MR. FITZGERALD:** Complete and representative
22 enough --

23 **MR. GRIFFON:** -- I guess, 'cause you get the
24 subcontractor issue -- yeah.

25 **MS. MUNN:** 'Cause that -- the --

1 **MR. GIBSON:** Joe, this is Mike Gibson. I was
2 the one that raised that issue out in Denver
3 based on my experience at Mound. And secondly,
4 just to throw another issue in, when we talked
5 about who should be monitored and who shouldn't
6 in these expedited cleanup sites, virtually
7 everyone, irregardless of their trade or their
8 background, turned into a D and D worker. So
9 you would think that the amount of data would
10 go up, not -- or the amount of people monitored
11 would go up, not down.

12 **MR. GRIFFON:** Or the percentage of people -- I
13 don't know...

14 **DR. ULSH:** Well, Mike, there's a couple of
15 other considerations there, and that's the
16 total number of workers at the site, which I
17 believe went down.

18 **MS. MUNN:** Went down.

19 **MR. GRIFFON:** The percentage maybe he's --

20 **MR. GIBSON:** It went down gradually.

21 **DR. ULSH:** And there's also the DOE order --
22 what was it --

23 **UNIDENTIFIED:** 5480.11.

24 **DR. ULSH:** -- 5480.11, which only required
25 monitoring for people who were expected to get

1 100 millirem or greater, so that might also go
2 against the trend that you're talking about
3 there of more people being monitored.

4 **MR. GIBSON:** Well, that all depends on the way
5 the contractor interpreted that order and the
6 conditions of the work site, the way they
7 characterized the site.

8 **DR. ULSH:** So I guess I would ask everyone,
9 what do we see as the action items here?

10 **MR. GRIFFON:** That's the question.

11 **DR. ULSH:** Yeah, what do we need to do?

12 **MR. GRIFFON:** I mean it -- to me it's still
13 this question of -- of representativeness is --
14 assuming you -- you could gather this data and
15 -- and develop a coworker model out of it, this
16 question looming in my mind of this -- that
17 report that indicated that 40 percent of the
18 subs were not even doing termination bioassays
19 and we -- we always sort of had in mind well,
20 at least as a backdrop, even if they didn't do
21 annuals, they -- they left a term-- they were
22 required to do a termination -- now -- and it
23 was language that they were supposed to do
24 that, but in fact the audit finds that a lot of
25 them didn't do it. If we gather the -- this

1 other data from -- you know, assuming that a
2 higher percentage of the prime contractor
3 people did do their -- their termination
4 bioassays, and maybe annuals, is that set of
5 data going to bias your intake estimates in any
6 way. Maybe not, but I -- so I guess that --
7 you know, I don't know. Again, we haven't seen
8 the data, but my only caveat in -- in
9 development of that coworker model would be
10 representativeness. You know, if the subs were
11 getting all the nasty work and not being
12 monitored when they left, it may have happened
13 -- I'm not saying it did, but you know, then
14 this -- this distribution you look at may not
15 be representative of that.

16 **MS. MUNN:** But isn't the real question whether
17 the 60 percent of the subcontractors who were
18 doing --

19 **MR. GRIFFON:** Could be representative, right.
20 Right.

21 **MS. MUNN:** -- exit bioassays --

22 **MR. FITZGERALD:** Were representative.

23 **MS. MUNN:** -- were they representative.

24 **MR. GRIFFON:** Yeah.

25 **MS. MUNN:** Isn't that the only real question?

1 **MR. GRIFFON:** Yeah.

2 **MR. FITZGERALD:** Yes.

3 **MR. GRIFFON:** Yeah.

4 **MS. MUNN:** If they were, then you have --

5 **MR. GRIFFON:** So you might want to --

6 **MS. MUNN:** -- data that you can work with.

7 **MR. GRIFFON:** -- cut -- you might want to cut
8 the --

9 **MR. FITZGERALD:** Exactly.

10 **MR. GRIFFON:** -- you might want to split it

11 that way and look at it anyway, is all I'm

12 saying. You might -- but that gets back to

13 that question of identifying from -- that was

14 one of the first actions in this thing was, you

15 know, show us who -- go through the rad worker-

16 2 logs and identify who were D and D workers.

17 **MR. FITZGERALD:** Well, there's just -- there's

18 just two classes of workers, I think you're

19 quite right, Wanda. The second class -- and

20 one of the responses I think to one of the

21 issues we raised which were these people didn't

22 get termination bioassays was well, you know,

23 the doses would have been so small, it wouldn't

24 matter, it'd be encompassed by the maximizing

25 assumptions. Well, I think that -- actually

1 you can settle that by I think looking at the
2 60 percent --

3 **MS. MUNN:** Yeah.

4 **MR. GRIFFON:** Yeah, that's what --

5 **MR. FITZGERALD:** -- that did have --

6 **MR. GRIFFON:** -- yeah, I agree.

7 **MR. FITZGERALD:** -- and if the answer is on the
8 distribution such that yeah, geez, you know,
9 the maximized assumption takes care of that,
10 then I think for those workers who were not rad
11 worker-2, I think we wouldn't have to be
12 concerned about all these people that got out
13 without termination bioassay. And I think
14 maybe supplementary to that would be some
15 notion on the -- there's the fecals, whatever,
16 which were the -- I would call the event-driven
17 bioassays where you had an air sample that was
18 high or a lapel sample that was positive, you
19 did a fecal sample -- or I guess you would do a
20 -- even a urine sample, I suppose, but you
21 know, some notion about how much data exists
22 that demonstrates an event-driven bioassay as
23 well. I think that answers the question. I
24 think that part is clear.

25 Rad worker-2, with the response that we got

1 from NIOSH about maybe an -- not an inability,
2 but a very -- impracticality of being able to
3 cross-walk, which was the workers' original
4 intention, cross-walk from a roster of rad
5 worker-2 workers to a corresponding compilation
6 of their bioassays. That's more troublesome
7 because I guess I -- I don't know how one would
8 then go about figuring out if we had routine
9 bioassays done routinely for a population that
10 would have been expected to be exposed because
11 they were in rad areas. I don't know how one
12 can get around that. I guess I -- I wrote that
13 as needs further discussion of feasibility,
14 because I don't think there's any other way
15 around doing something like that to validate
16 that the routine bioassay program was in fact -
17 - quite apart from anything else -- was going
18 to capture the -- the dose for that group of
19 workers that were in fact in the rad areas.

20 **DR. ULSH:** Gene, do you want to jump in?
21 You're being very quiet.

22 **MR. POTTER:** Was that question for Gene?

23 **DR. ULSH:** Yeah, it was.

24 **MR. POTTER:** Again, I'm -- I'm sorry, Brant,
25 I'm having trouble hearing people. I think

1 you're getting weaker as the day goes on.

2 **DR. ULSH:** Maybe I am

3 **MS. MUNN:** We all are.

4 **MR. FITZGERALD:** Yeah, I was just -- this is
5 Joe Fitzgerald again. I was just indicating
6 that, you know, in terms of the rad worker-2
7 workers, we did look at -- and of course we
8 weren't aware of this, that there's a real
9 perhaps practicality issue of being able to
10 cross-walk between a so-called roster of rad
11 worker-2 D and D workers and corresponding
12 bioas-- routine bioassays for that group. And
13 I -- I don't know of any other way to validate
14 in fact that the routine bioassay program was
15 sufficiently complete that you can go to the
16 bank with that in terms of the -- the
17 measurements.

18 **MR. POTTER:** Let me just say one more time that
19 -- that, you know, primary means of detecting
20 new intake was by more sensitive methods than
21 the routine urine. I understand why routine
22 urine is -- is used in the NIOSH program
23 because it certainly would bring up intakes
24 that would be of a health consequence, and all
25 workers are subject to these workplace

1 indicators and not -- you know, whether they
2 were in the program or not. And there were a
3 few isolated incidents where a person was --
4 say wound-counted because he was -- received a
5 wound in an area that was not considered a rad
6 area, but we counted him anyway and in that
7 case he was entered into the program. And so
8 that shows that a -- you know, intakes were
9 looked at across the site regardless of whether
10 they were in -- you know, actually in the
11 program or not.

12 And then the other issue you have to realize is
13 that the program changed, you know, over time
14 from being strictly rad worker-2 trained to rad
15 worker-2 trained with respirator fit, then rad
16 worker-2 with respirator fit for people making
17 entries on the plutonium side. A different
18 criteria was applied to the uranium side, and
19 the systems that were used to make these
20 determinations were automated and they are no
21 longer connected. So we would have to rely on
22 legacy management even say for HIS-20, which we
23 just currently have a -- a period from upon the
24 O drive, as you're all aware, but that -- that
25 is just the bioassay data and not the -- a log

1 of all of the entries that were made. In some
2 cases hard copy files would have to be
3 recalled, and you know, we would end up with a
4 -- a very high percentage of compliance, I'm
5 sure, because I was there and it's just a whole
6 lot of work getting to that point. Initially
7 those percentages that you quoted were not
8 represen-- which were not representative, were
9 due to some problems with identifying workers
10 who had even left the site. And so, you know,
11 the quotient on our -- on our rate was not very
12 good.

13 Another thing -- I'd just like to make a
14 comment that's a little off -- off the track
15 here, but to think that there were a lot of
16 people that should have been in the program and
17 were not being monitored is, I think, a
18 speculation that is not -- not warranted.
19 Remember, we had 300 DOE employees in shut-down
20 and probably only 50 in production, so the site
21 was being monitored rather closely by the
22 government. And these all weren't decisions
23 made in a vacuum by the contractor.

24 **MR. FITZGERALD:** I guess -- I guess the
25 concern, though, would be the lower tier subs

1 that came and went over the course of those ten
2 years as to whether or not the management
3 flowed down as strongly to them as it did for
4 the prime contractor from DOE. Certainly
5 there's a number of audits that suggest
6 otherwise.

7 **MR. POTTER:** Well, again, we have, you know,
8 records -- people being sampled with a very
9 sensitive method and people who were in
10 production areas doing the actual hands-on D
11 and D who became very contaminated, and they
12 were sampled and those doses were relatively
13 low. We did have a couple of significant ones
14 that resulted in some very large doses, but by
15 and large the ones during the D and D era from
16 inhalation you would find are -- are small.
17 The most signif-- the most likely outcome was a
18 determination of no intake and the next most
19 likely would be a dose of less than 100
20 millirem.

21 **MR. FITZGERALD:** Now I guess just to move this
22 forward, two questions. How can we get at the
23 completeness of the data, and then some sense
24 of the distribution of doses? I mean you're
25 certainly ascribing, based on first-hand

1 experience, that the doses were not high. But
2 you know, the -- those two questions I think
3 we're trying to grapple with. Is there any way
4 at all, short of doing a very impractical -- at
5 least certainly from your standpoint -- data
6 search to at least get a handle on that?
7 Otherwise we're sort of left with anecdotal,
8 you know, sort of testimony which is difficult
9 to deal with in the context of the SEC.

10 **MR. POTTER:** Well, we -- I think one of the --
11 the ideas mentioned was looking at the number
12 of -- you know, the magnitude of the
13 terminations, samples that we -- you know, that
14 did collect which, you know, ran closer to, you
15 know, 80 percent and upwards at the end after
16 we had composed finds and done some -- done
17 some things to bring the compliance closer to
18 what we would like to see. You know, looking
19 at maybe the magnitudes of those termination
20 bioassays might be possible rather quickly, and
21 then -- you know, rather than trying to figure
22 out if every single person was bioassayed on a
23 case-by-case basis when they should have been.

24 **MR. FITZGERALD:** Now those termination
25 bioassays obviously would include both the DD

1 rad worker-2 workers as well as the others.
2 Would there be a way to distinguish between the
3 two?

4 **MR. POTTER:** I think you could do it by company
5 name.

6 **MR. FITZGERALD:** Okay. I would suggest that
7 might be a path forward then, rather than
8 trying to do a sort by rad worker-2. If we
9 could somehow get a -- a surrogate in terms of
10 the subs or the contractor involved, we might
11 be able to sort it that way and -- and -- and
12 using the termination bioassays, we could get
13 some -- some feel for it.

14 **MR. GRIFFON:** So the -- the notion here would
15 be that if -- if we can get -- look at this
16 termination surv-- or termination bioassay data
17 --

18 **MR. FITZGERALD:** Yeah.

19 **MR. GRIFFON:** -- and -- and -- and have those
20 parameters defined, whether they were subs or
21 not, then we can at least see if we can get a
22 plausible upper bound for people --

23 **MR. FITZGERALD:** Get a plausible upper bound --

24 **MR. GRIFFON:** -- for this D and D period --

25 **MR. FITZGERALD:** -- to the distribution of --

1 **MR. GRIFFON:** -- so we don't have to
2 necessarily --

3 **MR. FITZGERALD:** -- of the groups.

4 **MR. GRIFFON:** -- and then you might -- NIOSH
5 may go beyond that, Jim, and eventually build a
6 coworker model by year, but at least --

7 **DR. NETON:** (Unintelligible) will answer that
8 question.

9 **MR. GRIFFON:** -- if we look at the termination
10 bioassay for now, we can say yes --

11 **MR. POTTER:** One -- one thing I --

12 **MR. GRIFFON:** -- you know, yes or no, we --

13 **MR. POTTER:** -- should mention, too, is that --

14 **MR. GRIFFON:** -- can -- we can bound it.

15 **MR. POTTER:** -- we did a lot of terminations by
16 lung counting because we got the results right
17 away and -- as to -- if we had a positive we
18 could recount the worker before he got out of
19 our hands.

20 **DR. ULSH:** What's the implication of that,
21 Gene?

22 **MR. POTTER:** Was that a question to me?

23 **DR. ULSH:** Yes, it was.

24 **MR. GRIFFON:** Say it again, Brant, what was --

25 **DR. ULSH:** Gene, what was the -- what's the

1 implication of that, the fact that there were
2 lung counts?

3 **MR. POTTER:** The sensitivity for -- well, we're
4 ICRP -- we were ICRP-30 type people. For class
5 Y plutonium you have about the same sensitivity
6 as for urine sampling and it was just a
7 preferred method for us because, like I say, if
8 you have a positive on the urine, you're at
9 least 30 days down the road; you may have
10 trouble reining that worker back in.

11 **DR. NETON:** So there's really no net
12 implication, since the missed dose is about the
13 same. Is that right?

14 **MR. POTTER:** Right, from -- from my standpoint,
15 too. I can't speak for dose reconstruction
16 implications.

17 **DR. NETON:** But it would seem like if the
18 sensitivity was the same, you -- you're okay.
19 Nonetheless, it would still be a plausible
20 upper bound, so --

21 **MR. GRIFFON:** Right. So I think that would be
22 an action. If we can get that data,
23 termination bioassay data, in vivo, in vitro,
24 whichever -- whichever-- you know --

25 **MR. FITZGERALD:** (Unintelligible) both, if we

1 can get it, but --

2 **MR. GRIFFON:** Yeah, or both, yeah.

3 **MR. FITZGERALD:** -- you know, whatever --
4 whatever exists on the -- on the tail end would
5 be most manageable --

6 **MR. GRIFFON:** Right.

7 **MR. FITZGERALD:** -- to compare it with
8 everything else upstream.

9 **DR. ULSH:** Does that sound feasible, Gene?
10 That was another question for you, Gene.

11 **MR. POTTER:** Could you -- could you repeat
12 that?

13 **DR. ULSH:** Does that sound feasible?

14 **MR. POTTER:** It sound-- which -- which sounds
15 feasible?

16 **DR. ULSH:** Mark is asking --

17 **MR. GRIFFON:** Can -- can we -- yeah, go ahead.
18 You're closer to the mike, so...

19 **DR. ULSH:** Mark is asking if we can get
20 distributions, I guess, on the in vivo or in
21 vitro termination bioassay data.

22 **MR. POTTER:** In -- in -- in vitro I think would
23 be relatively easy. We might need the
24 assistance of our -- our friend, Ken Savitz, to
25 do that. In vivo, not so easy, although the

1 fact that the person had the lung count was
2 transferred between the Canberra systems.
3 Unless you had a -- a above-decision-level
4 result, the data was not stored, and when you
5 did it was stored in microcuries and you don't
6 have enough digits to get down to the nanocurie
7 range stored.

8 **MR. GRIFFON:** Well, I -- I guess -- I would
9 leave that up to -- to you to either -- either
10 or both, I guess I would say, whichever --

11 **DR. ULSH:** Okay, we'll get what we can.

12 **MR. GRIFFON:** -- yeah, get what you can on
13 that, but also make sure you distinguish
14 between the subs and the --

15 **DR. ULSH:** Right.

16 **MR. GRIFFON:** -- prime.

17 **DR. ULSH:** Did you get that, Gene?

18 **MR. GRIFFON:** By company name or however you
19 can in-- you know, if you can include company
20 name or whatever, to help us understand, we --

21 **MR. FITZGERALD:** As a sur-- as a surrogate --

22 **MR. GRIFFON:** Yeah.

23 **MR. FITZGERALD:** -- for the split between what
24 would be rad worker-2, perhaps, and -- and
25 others.

1 **MS. MUNN:** Uh-huh.

2 **MR. GRIFFON:** Right.

3 **DR. ULSH:** Any problem there, Gene,
4 distinguishing between primes and subs?

5 **MR. POTTER:** As I said, I think we can do that
6 on company name and their -- that would
7 probably be the best way.

8 **MR. GRIFFON:** Okay.

9 **MR. FITZGERALD:** All right.

10 **MR. GRIFFON:** I think that --

11 **DR. ULSH:** Okay.

12 **MR. GRIFFON:** Does that get at it, Joe?

13 **MR. FITZGERALD:** Yeah.

14 **MR. GRIFFON:** And then if -- if -- you know, if
15 -- when we get that, we'll dis-- discuss it and
16 it may be a matter of at least this gives us a
17 way that we're happy if we can get a bounding
18 estimate on --

19 **MR. FITZGERALD:** Well, yeah, I think it --

20 **MR. GRIFFON:** -- internal dose, right, and --

21 **MR. FITZGERALD:** Just a --

22 **MR. GRIFFON:** -- right, right, right, and
23 whether NIOSH builds a coworker model, that's
24 another issue --

25 **MR. FITZGERALD:** Right.

1 **MR. GRIFFON:** -- but at least we can look at
2 the last --

3 **MR. FITZGERALD:** There's a basis for a coworker
4 model.

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

6 **MR. ELLIOTT:** This is a good discussion and I'd
7 ask us to --

8 **MS. MUNN:** Someone just dialed someone.

9 **MR. ELLIOTT:** -- remember it when we get to
10 looking at Fernald. Fernald is the next SEC
11 petition that you all will probably take up
12 where we have a D and D era.

13 **MR. GRIFFON:** Good point.

14 **DR. WADE:** We have a high frequency beeping on
15 the line.

16 **MR. GRIFFON:** Anything else on D and D follow
17 up, Joe?

18 **MR. FITZGERALD:** Let me just double-check. I
19 think that's the core that...

20 **MR. GRIFFON:** Yeah, can we take a ten-minute
21 comfort break? I know it's getting a little
22 late, but --

23 **DR. WADE:** Sure.

24 **MR. GRIFFON:** -- I've been ordered to do so --

25 **MS. MUNN:** That would be a good idea.

1 **MR. GRIFFON:** -- by our silver medalist.

2 **DR. WADE:** We're going to take ten minutes.

3 We're going to stay connected.

4 (Whereupon, a recess was taken from 3:35 p.m.

5 to 3:45 p.m.)

6 **DR. WADE:** Okay, we're back on line. Anybody -

7 - Mike, are you still out there with us?

8 **MR. GIBSON:** Yeah, I'm still here.

9 **DR. WADE:** You're complimented on your
10 persistence.

11 Okay, we're -- we're coming back. By my
12 calculation we're halfway down the list. We're
13 coming to halfway down. We're getting -- we're
14 getting better.

15 **MR. GRIFFON:** But as I said, we front-loaded
16 this thing, so hopefully the topics are getting
17 easier. Maybe not this particular one, but I'm
18 still hopeful we can -- we can finish
19 (unintelligible) --

20 **DR. WADE:** Logbooks and NIOSH analysis.

21 **LOG BOOKS**

22 **MR. GRIFFON:** Yeah, the logbooks, the topic
23 here was that -- many logbooks now are posted
24 on the O drive. NIOSH did an analysis by
25 selecting -- selecting points out of many of

1 the logbooks and cross-walking them with the
2 individual radiation files to see if -- I guess
3 to see if you had a definitive match or if --
4 if there wasn't -- the logbook didn't designate
5 a value, just to see if there was a urinalysis
6 value there or -- or a sample was taken on the
7 same date for this -- for that person, et
8 cetera. So I'll let Brant present this, and I
9 should say also we -- we -- I don't think SC&A,
10 for reasons stated earlier, have really had a
11 chance to -- to go much into this report, but
12 we'll -- we'll let you present and then, to the
13 extent you can reply, that's fine.

14 **DR. ULSH:** If you recall, a few working group
15 meetings ago NIOSH committed, at the suggestion
16 of the working group and SC&A, to locate as
17 many logbooks as we could covering both uranium
18 and plutonium areas in a variety of time
19 periods. And we have done that and posted them
20 on the O drive for the working group and SC&A's
21 access. We located a number of logbooks and,
22 as Mark mentioned, we went through the logbooks
23 and pulled out a handful of data from each and
24 then we cross-walked back to the individual's
25 hard copy rad file to see to what extent the

1 logbooks agreed or did not agree with the --
2 the data in the rad file. And this was kind of
3 a follow-on action to the -- we started out
4 with the Kittinger log and I did a detailed
5 analysis of that, pulled out all the data
6 points I could from there and tracked those
7 back, and we also found a high degree of
8 agreement there.

9 A follow-on item was to look at the wider
10 population of logbooks, so that's what this
11 action item refers to. And we were actually
12 pleasantly surprised at how good the agreement
13 was between the two sources of data, the
14 logbooks on the one hand and the hard copy rad
15 files on the other. Depending on how you slice
16 it and whether you consider a particular item
17 confirmed, mismatch or just a possible
18 mismatch, we got about -- somewhere in the
19 upper 90s, I think it was 93 percent agreement
20 between the two sources of data -- 94 percent,
21 sorry. And those were 296 names pulled from 33
22 logbooks, and we did go through the cases --
23 the situa-- particular situations where we had
24 a less-than-perfect match. But again, that was
25 only six percent, so we considered that pretty

1 good agreement.

2 Teresa Lopez of Bob's team was instrumental in
3 this logbook analysis. Teresa, is there
4 anything you want to add that I've left out?

5 **MS. LOPEZ:** No, just that this involved more
6 than just looking at the urinalysis logs. It
7 was foremen's logs, managers' logs, HP logs and
8 obviously the urinalysis logs contained a lot
9 of information. The other logs contained
10 information as whoever was making the entry
11 found it suitable to put in a name, a man
12 number and a result, or sometimes just the name
13 and the result, and we -- we tracked it from
14 there. So I think it's pretty good agreement
15 given that the information in the logbooks was
16 not -- not always presented with a man number.

17 **MR. MEYER:** And then, Teresa, the -- the five
18 or six names that didn't quite match up, you
19 want to talk about those? There were a few of
20 those that were a little confusing.

21 **MS. LOPEZ:** Sure. The 18 entries that -- that
22 did not match -- and we considered a match to
23 be either the exact result or greater than the
24 reported result, because we were looking at
25 handwritten data and there's some possibility

1 of misinterpretation of something that's
2 handwritten and unclear, so if the -- the ma--
3 a match was something that was exactly the same
4 or greater than what we saw in these
5 handwritten logbooks. In one case the claimant
6 file was not available; the rad log has been
7 ordered. Four cases did not have urinalysis
8 results for the same date listed in the
9 logbook. In one of those it -- it seemed very
10 likely that it was unclear handwriting because
11 it -- the logbook said 6/2 and in the file it
12 read 5/2/1957. In one case the sample was lost
13 and not recorded, but it is marked as lost in
14 the logbook. In another case there were
15 samples for one month previous and one month
16 after, but not for the date that appeared in
17 the logbook. That sample may also have been
18 lost. And the (unintelligible) case simply
19 that there's no explanation for it, it just
20 does not appear. There were two cases where
21 urinalysis data was found matching the logbook,
22 but both results were listed as background in
23 the logbook, so the fact that there were no --
24 there was no matching data in the file is maybe
25 insignificant. There was another case where

1 there was -- appear on the handwritten
2 urinalysis card but not in the health sciences
3 database printout. And then the other cases --
4 let's see, there was one where his film badge -
5 - and this was just a notation in a -- in a
6 foreman's log. It was a film badge reading in
7 excess of 500 counts per minute, but there was
8 no exact match in the radiological file. There
9 are external exposure results above background
10 for that same time period, but not one that
11 specifically said 500 counts per minute.
12 I think that the biggest -- the logbook where
13 we found the fewest matches were -- was the
14 special analysis logbook. So excluding those
15 results, the percentage of matching would have
16 been much higher.

17 **MR. FITZGERALD:** Could you explain why -- in
18 your estimation, why that was the case? Was it
19 just lack of claimant file data?

20 **MS. LOPEZ:** For the special analysis logbook --

21 **MR. FITZGERALD:** Yeah.

22 **MS. LOPEZ:** -- or in general?

23 **MR. FITZGERALD:** Special analysis.

24 **MS. LOPEZ:** No, I couldn't. Mel reviewed the
25 special analysis logbook because of the data

1 that it contained. It could be that if he had
2 had more rad files to compare it to that the
3 numbers could have been higher.

4 **DR. ULSH:** Actually I think, to add to what
5 Teresa said, Joe, it's our opinion that -- and
6 Bryce, you might want to jump in if there's any
7 more that should be said about this -- but the
8 -- the samples that oc-- that appear in the
9 special analysis logbook were taken primarily
10 not from a individual monitoring standpoint.
11 They were taken more as related to a particular
12 job, just to confirm or --

13 **MR. FITZGERALD:** Job specific.

14 **DR. ULSH:** Yeah, exactly, and it was more to
15 con-- just to confirm that no release had
16 occurred, so those may not have always made it
17 into the individual workers' rad files.
18 However, we do have them in the special
19 analysis logbook. And as a note of
20 corroboration, we also looked at the monthly
21 progress reports that I mentioned before from
22 the IH and -- the name changed over the years,
23 I think it was Industrial Hygiene and Chem Lab
24 or something like that, their monthly progress
25 reports. And periodically they told in this

1 month we took a neptunium sample, or in that
2 month we took a curium sample. And lo and
3 behold, we do find it in the special analysis
4 logbook. There's very good agreement in terms
5 of number of assay -- number of bioassays for a
6 particular one that's mentioned in the progress
7 reports, and then you find them in the logbook.

8 **MR. FITZGERALD:** Okay.

9 **DR. MAKHIJANI:** What's the number of the
10 special analysis logbook, do you remember?

11 **DR. ULSH:** The number?

12 **DR. MAKHIJANI:** Yeah, 'cause these are all by
13 (unintelligible) --

14 **MR. GRIFFON:** I think it just said special --
15 yeah --

16 **DR. ULSH:** (Unintelligible) just called special
17 --

18 **MR. FITZGERALD:** (Unintelligible) she says it.

19 **MS. LOPEZ:** Did you need the bar code on that?

20 **DR. ULSH:** No, I don't think so, Teresa.

21 **MS. LOPEZ:** Okay.

22 **MR. FITZGERALD:** It's identified in there.

23 **MR. GRIFFON:** Yeah.

24 **DR. ULSH:** Yeah.

25 **MR. GRIFFON:** Can you -- Teresa or Brant --

1 describe how -- how you selected -- I mean it
2 was just -- just going through logs, flipping
3 to a page and grabbing the -- sort of fairly
4 random but not -- is that how you selected the
5 sample?

6 **DR. ULSH:** Teresa, how -- can you talk about
7 the selection criteria? I think it was pretty
8 much random. Right?

9 **MR. GRIFFON:** Yeah.

10 **MS. LOPEZ:** Sure, it was -- it was random, too,
11 that the urinalysis and -- and bioassay
12 logbooks contained hundreds of pages of names,
13 so went through and simply randomly pulled out
14 names and found a match with a rad file or a
15 claim file. For all the other logs we took any
16 name that came out, any result that we thought
17 had enough identifying information, and that
18 would be either a man number or a date or the
19 type of analysis that was performed, and cross-
20 walked that data whenever we found it with --
21 with the rad file.

22 **MR. GRIFFON:** And -- and just looking on your
23 first couple of pages, a lot of background
24 values, were they -- how were they -- I mean
25 they were recorded based on the practice of the

1 time period, I would imagine. Right? They
2 were either zeroes or -- or detection limits or
3 how were -- I mean how --

4 **MS. LOPEZ:** They were usually identified as --
5 as background with either the entire word or b-
6 c-k, b-c -- b-c-g, just depending on who was --

7 **MR. GRIFFON:** Okay.

8 **MS. LOPEZ:** -- writing it in.

9 **MR. GRIFFON:** Any -- any other thought? I mean
10 I'm looking to you guys. Any follow-up or...

11 **MR. FITZGERALD:** Well, again, we're -- we're
12 going through this, but --

13 **MR. GRIFFON:** Yeah.

14 **MR. FITZGERALD:** -- I don't think we would take
15 exception with the overall approach. I think
16 we do have more or less specific questions
17 within the individual entries and comparisons,
18 that if there's a chance to, you know, take
19 those individual cases and just be able to do a
20 cross-walk or comparison with the claimant
21 file, that would probably settle some of the
22 questions within the -- within the analysis.
23 So I would leave it at that, that there may be
24 some specific questions with-- 'cause it's a
25 very lengthy analysis and there's some issues

1 that we're not sure about. One question was
2 the special analysis. We noticed that there
3 were not many matches. I think this helps
4 explain that. There's some others that are
5 more specific, not generic, that we probably
6 want to look at in the -- in the -- by
7 comparison with the claimant file cross-
8 walking, but we don't certainly take any
9 exception with the overall...

10 **MR. GRIFFON:** I guess an -- an initial reaction
11 I had was the -- rolling this all together
12 seemed a little odd to me. I don't think it
13 takes away from the -- the overall product,
14 though, that you -- you have external data in
15 here, you have what I would call other logbook
16 data, and then urinalysis logs, I -- you know,
17 I might've separated them, but -- but
18 nonetheless, the data's there and it speaks for
19 itself so that's good.

20 **MR. MEYER:** If you have any difficulties --

21 **MR. GRIFFON:** Yeah.

22 **MR. MEYER:** -- finding information in the logs,
23 give us a call because we could, you know --

24 **MR. FITZGERALD:** Yeah.

25 **MR. MEYER:** -- transcribe something

1 (unintelligible) --

2 **MS. ROBERTSON-DEMERS:** This is Kathy Demers.
3 I've got a couple of questions about kind of
4 the general process and how you came to choose
5 the 60 to 70 logbooks that were on the O drive.
6 My original list I had sent to you probably had
7 in excess of 200 logbooks on it, and that
8 leaves the question of what happened to the
9 other 133 logbooks. Did you decide that they
10 were not worthwhile?

11 **DR. ULSH:** Which original-- Kathy, this is
12 Brant. Which original list are you talking
13 about? At this point --

14 **MS. ROBERTSON-DEMERS:** When we first turned
15 over the logbook task to NIOSH in April --

16 **DR. ULSH:** Yeah.

17 **MS. ROBERTSON-DEMERS:** -- I provided a list to
18 NIOSH of logbooks that should be requested.
19 This also I believe was provided to Rocky Flats
20 at the same time.

21 **DR. ULSH:** If you recall, Kathy, we pretty
22 quickly decided I think in discussions in the
23 working group that certain categories of
24 logbooks were not going to be particularly
25 helpful.

1 **MR. GRIFFON:** Like the foremen's logs I think,
2 yeah.

3 **DR. ULSH:** Yeah, the foremen's logs, the
4 contamination control logs. That could have
5 trimmed the list significantly, although I -- I
6 just speculate 'cause I don't have your list in
7 front of me.

8 **MS. ROBERTSON-DEMERS:** If -- if I were to
9 provide you with that list again, can you tell
10 me what the status of those logbooks were?

11 **DR. ULSH:** Why don't you send it over and we'll
12 take a look at it.

13 **MR. GRIFFON:** Have we -- has the workgroup got
14 that listing, Kathy? I don't know if we have
15 it. It may...

16 **MS. ROBERTSON-DEMERS:** It may have been in one
17 of the --

18 **MR. GRIFFON:** I don't recall.

19 **MS. ROBERTSON-DEMERS:** -- a data integrity
20 report.

21 **MS. MUNN:** Well, she -- she talked about it --
22 we talked about the number that was there, but
23 I don't believe we ever had it because we did
24 decide early on that we would -- we would
25 narrow our investigation to specific types of

1 logbooks that would likely contain the highest,
2 most useful information.

3 **MR. GRIFFON:** I think I would request that --
4 that maybe SC&A internally with -- you know,
5 talk with Kathy and see if --

6 **MR. FITZGERALD:** Well, I think just --

7 **MR. GRIFFON:** -- what's here meets the require-
8 - yeah.

9 **MR. FITZGERALD:** -- just -- yeah. The original
10 handoff I think there was a listing that was
11 provided as a starting point, but I don't
12 disagree with Brant. I think there was a lot
13 of discussion about how to cull that down to --

14 **MS. MUNN:** Uh-huh.

15 **MR. FITZGERALD:** -- the logbooks that one would
16 then think of the -- the follow-up, but I think
17 to be more definitive we can go through that --

18 **MR. GRIFFON:** Yeah, I think we even had the
19 petitioners say that some of them weren't --
20 weren't while, really --

21 **MR. FITZGERALD:** Right.

22 **MR. GRIFFON:** -- weren't worthwhile --

23 **MR. FITZGERALD:** Tony was in and --

24 **MR. GRIFFON:** -- really going into, yeah.

25 **MR. FITZGERALD:** -- also indicate that as well.

1 **MS. MUNN:** I think some of that discussion was
2 -- was captured in earlier transcripts, I
3 believe.

4 **MR. GRIFFON:** Well, we --

5 **MR. RICH:** I think -- I think when we got the
6 CD of it there were ten folders that came out,
7 but that may not be the same one she...

8 **MS. ROBERTSON-DEMERS:** Well, I can provide you
9 with both the list and any documents that I may
10 have provided this list in.

11 **DR. ULSH:** Okay.

12 **MR. FITZGERALD:** Okay.

13 **MR. GRIFFON:** I don't know at this point if --
14 if there's any action other than that SC&A is
15 look-- is reviewing this, and I think --

16 **MR. FITZGERALD:** I think we're going --

17 **MR. GRIFFON:** -- more or less...

18 **MR. FITZGERALD:** -- to have specific cross-walk
19 issues where --

20 **MR. GRIFFON:** Yeah.

21 **MR. FITZGERALD:** -- we might want to validate,
22 but I think from what has been reviewed I don't
23 think we would take exception from that
24 standpoint, but more or less there are some
25 specific items in there that we think are --

1 are, in our minds, something that we still want
2 to validate, and I think the process of doing
3 that is just simply to be able to access the
4 claimant file and just do a little -- few
5 cross-walks rather than make it kind of a full-
6 blown thing and I think if we have any
7 questions we can come back to you or Bob and
8 just say, you know, how did you -- you know,
9 what did you do here. I'd rather just leave it
10 at that at this point, given the amount of
11 effort that's gone into it.

12 **MR. GRIFFON:** The only other action I did and I
13 briefly spoke with Brant in the hallway before
14 we came back in, if -- if NIOSH can --

15 **MR. FITZGERALD:** Urinalysis?

16 **MR. GRIFFON:** -- post the radiation files for
17 the non-claimants, and I think -- and I'm not
18 asking for a lot of work here 'cause I think
19 you have it all in electronic form, so I hope
20 it's not -- not a major deal to post that for
21 us in that AB drive somewhere.

22 **DR. ULSH:** Shouldn't be.

23 **MR. GRIFFON:** And Lar-- I -- I did mention it
24 to Larry and it's -- it's not an issue from
25 privacy standpoint or anything, so --

1 **DR. ULSH:** Yeah, we can do that.

2 **MS. ROBERTSON-DEMERS:** I did have one other
3 general question. In your selection I was a
4 little surprised that you didn't choose one of
5 the cases where it noted in the logbooks that
6 the badge was destroyed and follow-up on that
7 as far as dosimetry investigations. Was there
8 a reason for that?

9 **DR. ULSH:** You were looking specifically,
10 Kathy, for information that could be cross-
11 walked into the rad files. We were looking for
12 either urinalysis results or lung count
13 performed on a particular day or what-not,
14 things like that. We do know that in the
15 earlier years that there were some badges --
16 you know, on occasion, just like you would
17 expect in any large facility like this, there
18 were occasions when the badges became
19 contaminated and had to be disposed of of hot
20 waste. We did track that down. We saw that in
21 your notes when you looked at some of the
22 logbooks. That was an issue that we were very
23 interested in so we conducted interviews with
24 several people to find out what would have been
25 done in a case like that. Several of the

1 people that we talked to turned out not to be
2 directly involved that closely with the
3 external dosimetry program so they couldn't
4 really speak directly to it. But a few of the
5 people -- I'm thinking -- trying to think of
6 the people that we interviewed. Is Steve Baker
7 on the line?

8 (No response)

9 That's too bad, Steve took the lead on that. A
10 few of the people that we interviewed,
11 including -- let's see, Bob Bistline, who else
12 did we talk to, do you remember?

13 **UNIDENTIFIED:** (Off microphone)

14 (Unintelligible)

15 **DR. ULSH:** REDACTED, REDACTED talked about it.
16 What they would -- they would not simply assign
17 zero when a badge became contaminated and had
18 to be disposed of. They made an effort to
19 determine what the appropriate value to put in
20 was. Now there was no agreement that you would
21 actually see an investigation file in --
22 investigation report in the rad file during --
23 particularly during the early years. That's
24 not the same thing as saying that they were not
25 investigated, and that's -- if we walk through

1 the matrix, Mark, I think there's one place we
2 might have said that. What we said was that
3 you wouldn't expect to see a particular
4 investigation report like you would see in the
5 later years, but the consensus of the people
6 who actually had an opinion on what was done in
7 situations like that was that they made an
8 effort to determine the most appropriate value
9 to assign and that -- there was a dose assigned
10 for that particular badge wear cycle.

11 **MR. GRIFFON:** I guess that would have been the
12 fall-- I -- I think what I would have done in
13 that case is if I -- but you randomly sampled,
14 too, so I don't know if this would have come up
15 in your sample, but if you did look at one of
16 those lost or destroyed badge -- I guess what I
17 would have walked it through for was to say
18 okay, is there any recorded, you know, record
19 in there for that quarter or whatever for their
20 external monitoring records. And if so, even
21 if it's a zero, you know, if they measured
22 something or estimated a dose, there's some
23 record in there instead of a blank, you know.

24 **DR. ULSH:** I'm trying to think -- there were --

25 **MR. GRIFFON:** I know it's not as definitive as

1 if you have a value to compare, but --

2 **DR. ULSH:** Yeah, yeah. I'm trying to think,
3 Mark, there's been so many documents going back
4 and forth lately, but --

5 **MR. GRIFFON:** Yeah.

6 **DR. ULSH:** -- I know there was a situation like
7 that where I think the badge was lost or
8 destroyed or something and we identified that
9 there was in fact a positive value in that
10 badge exchange cycle. I won't represent --

11 **MR. GRIFFON:** Yeah -- no, okay.

12 **DR. ULSH:** -- that as a comprehensive
13 investigation 'cause it's certainly not, but
14 it's just anecdotal evidence and it does
15 correspond with what we heard from the rad
16 protection people that we interviewed.
17 In terms of the names of people that we
18 interviewed on this, Bob Bistline, REDACTED,
19 REDACTED*, REDACTED*, all people who -- we have
20 Roger Falk and REDACTED -- all people who were
21 involved in the dosimetry program. Not all of
22 those people turned out to be directly involved
23 and could speak to the issue, but of the ones
24 that were able to, that was the consensus that
25 -- that they came to.

1 **MR. GRIFFON:** Okay. And -- and -- I mean I
2 think we've -- you're going to follow up --

3 **MR. FITZGERALD:** Well, I think --

4 **MR. GRIFFON:** -- Brant's going to post the logs
5 and --

6 **MR. FITZGERALD:** Yeah, I think Kathy spent a
7 great deal of time looking at the individual
8 issues, and a number of these get down to
9 simply cross-matching, which is something
10 you've done, and some questions about the
11 cross-matching. But again, I think if we have
12 access we can look at those cross-matches, get
13 back to you and talk about them and maybe
14 resolve them as we go rather than -- you know,
15 I think there's a number that we have questions
16 about, but they're really specific. I don't
17 think they necessarily change the overall
18 conclusion, but still we want to make sure we
19 understand how they were arrived at.

20 **MR. GRIFFON:** Yeah, I --

21 **MR. FITZGERALD:** Kathy, do you have anything to
22 add to that?

23 **MS. ROBERTSON-DEMERS:** No, it's -- it's about --
24 -- it's going to come down to questions --

25 **MR. FITZGERALD:** Right.

1 **MS. ROBERTSON-DEMERS:** -- around particular
2 cases.

3 **MR. FITZGERALD:** Right.

4 **MR. GRIFFON:** The on-- the only -- not to
5 resurrect the -- that, but you mentioned the
6 Kittinger review that preceded this analysis.

7 **DR. ULSH:** Yes.

8 **MR. GRIFFON:** Did you -- 'cause I remember in
9 our -- in one of our workgroup meetings, it
10 might not have been the last one, you said you
11 -- you had presented a -- a large degree of
12 corroboration with that data, but then there
13 were a -- many that were pending and I don't
14 know if you've comple-- sort of wrapped that up
15 or is that incorporated within this or --

16 **DR. ULSH:** Well, let me go back and --

17 **MR. GRIFFON:** Okay.

18 **DR. ULSH:** I actually do have a pretty good
19 recollection of that --

20 **MR. GRIFFON:** Okay.

21 **DR. ULSH:** -- because it was -- occasionally
22 John Mauro makes some comments or statements
23 that just stick with me, and -- and the one
24 that stuck with me was there's nothing rotten
25 in Denmark here, there's nothing that stinks.

1 And --

2 **DR. MAKHIJANI:** I think he borrowed that from
3 somewhere.

4 **MR. GRIFFON:** Yeah, he made some --

5 **DR. ULSH:** I think I've heard that before.

6 **MR. GRIFFON:** He's -- he's --

7 **MR. FITZGERALD:** Yeah, that wasn't original.

8 **MR. GRIFFON:** He's made some comments that
9 stick with me, too. Anyway --

10 **DR. ULSH:** At that stage --

11 **MR. GRIFFON:** He's not here. That's not fair.

12 **MS. MUNN:** Yeah, we can all jump on John.

13 **DR. ULSH:** At that stage, Mark, we decided to
14 go on, expand the logbooks and you had decided
15 that we would not review any particular logbook
16 to that level of detail. Rather we would pick
17 the handful, so I pretty much stopped at that
18 point.

19 **MR. GRIFFON:** Oh, okay. I thought those were
20 in process, but that's fine.

21 **DR. ULSH:** Yeah, I haven't done any --

22 **MR. GRIFFON:** I don't disagree with that.

23 **DR. ULSH:** -- more on that Kittinger logbook.

24 **MR. GRIFFON:** That's fine. Okay.

25 **MS. MUNN:** I want to personally thank Kathy for

1 the work she's done on those logbooks and for
2 the information that was sent out. It was very
3 helpful and very interesting, Kathy. Thank you
4 very much.

5 **MS. ROBERTSON-DEMERS:** You're welcome. I
6 actually have a follow-up question to Mark's
7 question. I noticed that in the new analysis
8 there was some overlap with the Kittinger log
9 in that some of those individuals in the
10 Kittinger review were pending. Were you able
11 to retrieve their radiation exposure files?

12 **DR. ULSH:** Could be, Kathy. I'm going to talk
13 for just a minute and then I'll let Teresa
14 perhaps jump in. The results that you see in
15 this analysis that we sent over -- I don't
16 know, a couple of weeks ago, a week ago, I
17 don't know when -- they do not include
18 explicitly the previous work that I did on the
19 Kittinger log. However, that was one of the
20 logbooks that we had in our population of
21 logbooks, and so I think that Teresa probably
22 went in and sampled from that logbook just like
23 she did from any of the others. Is that
24 correct, Teresa?

25 **MS. LOPEZ:** That would be correct. I -- I

1 sampled every logbook that was provided to me.

2 **MR. GRIFFON:** All right. Are we -- that was --
3 that was --

4 **DR. WADE:** Good.

5 **MR. GRIFFON:** We're getting efficient here as
6 the day is -- as people's flights approach.
7 We're on to the next topic, if I can find my
8 agenda.

9 **'69 DATA GAP**

10 **DR. WADE:** '69 data gap.

11 **MR. GRIFFON:** There we go. Thank you, Lew.
12 '69 data gap. Question here -- I think in pre-
13 - previous workgroup meetings there's --
14 there's -- I think there's agreement here
15 actually that there are a fair amount of cases
16 that -- that are -- that have this gap, for
17 lack of a better word, in -- in data,
18 especially in '69. I have some question if it
19 extended into '70 'cause I looked at earlier
20 notes, but I'm not sure about that. But -- but
21 that was brought up initially by SC&A and I
22 think NIOSH sort of looked at some files and --
23 and said yes, in fact we -- we see the same
24 thing you do, and since then I think we've --
25 we've got another report recently with -- or I

1 don't know how recently you sent --

2 **DR. ULSH:** A week or two ago.

3 **MR. FITZGERALD:** Yeah, a week or two ago.

4 **MR. GRIFFON:** -- it was a while ago? Okay. At
5 least -- between the last two meetings. Right?

6 **DR. ULSH:** Yes. Yes.

7 **MR. GRIFFON:** Yeah. That explains -- and I'll
8 let Brant describe it.

9 **DR. ULSH:** Yeah, this -- to refresh everyone's
10 memory, this was an issue that I think Kathy
11 originally discovered was that there appeared
12 to be a number of individuals for whom there
13 was no dosimetry in all or part of 1969. And
14 so we quickly considered the possibility that
15 it might be somehow related to the Mother's Day
16 fire in 1969. That -- that was certainly a
17 large and significant event in the history of
18 Rocky Flats, and so we wondered right away
19 whether that had anything to do with it. We
20 considered and discarded a number of
21 hypotheses, and the real breakthrough came
22 again when we were looking at these prog--
23 monthly progress reports and we came across the
24 comment that was noted earlier about the
25 administrative decision, the management

1 decision I guess, to -- for the low risk
2 people, people judged at low risk for exposure.
3 In other words, they were stationed outside of
4 the plutonium areas which at that time period
5 in Rocky Flats, 1969, meant that they were
6 outside of the radiation areas, essentially,
7 since most of the ATU* was sent to Y-12 at that
8 point, and they were on quarterly badge
9 exchange cycles, which meant that they were, by
10 definition, a low risk -- a population of
11 workers judged to be at low risk of exposure.
12 They decided that those people would continue
13 to be badged, however unless circumstances
14 warranted, their badges would not be read.
15 So, once we found that, we went back and
16 checked the files, checked the dosimetry that
17 we saw in 1969 to see whether it was consistent
18 with that, and in fact it was. For the people
19 that we could -- that had gaps that were
20 stationed outside and fit that category or fit
21 that profile, they were indeed the people that
22 we saw the gaps for. Now -- and so that -- and
23 that decision was made even before the fire
24 happened, so it does indeed appear that the
25 fire occurring in that year at the same time we

1 see these -- this pattern was coincidental.
2 Now on top of that we also saw a brief mention
3 that they had a computer problem in that year
4 and --

5 **MR. GRIFFON:** Can -- can I just interject just
6 for a second 'cause I'm trying to sort this out
7 in my own head.

8 **DR. ULSH:** Yeah.

9 **MR. GRIFFON:** Earlier in our first -- well, the
10 -- item one, all morning, we -- we -- we -- you
11 referenced -- I believe this is the same
12 report, this same quarterly report --

13 **DR. ULSH:** Yes --

14 **MR. GRIFFON:** -- or whatever --

15 **DR. ULSH:** -- it is.

16 **MR. GRIFFON:** -- that you're talking about, and
17 basically I -- I was under the impression that
18 -- that -- now it seems to me if you have --
19 part of the reason this -- this was identified
20 was a blip in the amount of zeroes in -- when
21 they reviewed the -- the annual data. There
22 was a blip in '69 and possibly '70 -- I'll hold
23 out on that one, but if there was in fact a
24 blip, this doesn't look like a changed policy
25 in '69 going forward but rather it was a

1 decision just maybe for manpower reasons or
2 whatever, but only during that one cycle. Is
3 that --

4 **DR. ULSH:** Okay. Craig, are you out there?

5 (No response)

6 **MR. GRIFFON:** Jim was speaking to this earlier,
7 wasn't he?

8 **DR. ULSH:** Well, I tell you what we found,
9 Mark, was that there would be a zero at the top
10 -- okay, when you're looking at the film badge
11 results, there are several people listed on a
12 page and what you would see is a zero at the
13 top and a --

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

15 **DR. ULSH:** -- line down through them all.

16 **MR. GRIFFON:** Yeah.

17 **DR. ULSH:** And we had -- we identified that
18 those were the people who in fact were -- fit
19 this profile, and so it is consistent with what
20 we saw there. So those people would not --
21 that zero should not be taken as a badge that
22 was read and came out zero. In fact, if you
23 think about it, what these people would be is
24 essentially unmonitored individuals and so you
25 would have to use the techniques that we use

1 for unmonitored people. Does that answer your
2 question?

3 **MR. GRIFFON:** But all I'm saying is is this
4 morning when we talked you -- you -- I mean we
5 were having this discussion about how to
6 interpret --

7 **DR. ULSH:** Yes.

8 **MR. GRIFFON:** -- this cohort or whether it was
9 a change in policy from '69 forward. It
10 doesn't seem -- if there's a blip in the number
11 of zeroes, then you sort of go back --

12 **DR. ULSH:** Yeah, we don't --

13 **MR. GRIFFON:** -- it seems like it -- it's not
14 supported there and --

15 **DR. ULSH:** Well, we don't have a corresponding
16 notation as to whether or not that
17 administrative procedure was rescinded --

18 **MR. GRIFFON:** Short term or was it --

19 **DR. ULSH:** Exactly.

20 **MR. GRIFFON:** Yeah.

21 **DR. ULSH:** We don't have a corresponding
22 notation to that.

23 **MR. GRIFFON:** Okay, that's what I was asking.

24 **DR. ULSH:** Okay.

25 **MR. MEYER:** Craig, I know you're actually --

1 **MR. GRIFFON:** Sorry to interrupt your --

2 **MR. MEYER:** Craig, I know you're actually
3 there, though. I guess the speakers have
4 gotten kind of silent here. Can you hear us
5 now?

6 **MR. LITTLE:** I can hear you.

7 **MR. MEYER:** Yeah. Sorry. Okay.

8 **DR. ULSH:** Yeah, do you -- do you have anything
9 to add to that, Craig?

10 **MR. LITTLE:** I didn't hear all of it, but what
11 I heard at the end there was that yeah, we
12 don't have a corresponding -- as Jim said this
13 morning, we don't have a corresponding
14 documentation that says they -- they started
15 running all the badges again, so I don't have -
16 - I don't have an answer to that concern.

17 **DR. ULSH:** It looks like, Mark, when --

18 **MR. GRIFFON:** And nobody you interviewed could
19 shed any light on whether that --

20 **DR. ULSH:** No.

21 **MR. GRIFFON:** Okay.

22 **DR. ULSH:** No.

23 **MR. GRIFFON:** I don't want to break your flow
24 of your presentation. That was just a --

25 **DR. ULSH:** No, no, I know.

1 **MR. GRIFFON:** I already did.

2 **DR. ULSH:** Remind me to talk to you afterwards,
3 Mark --

4 **MR. GRIFFON:** Yeah.

5 **DR. ULSH:** -- there are some things I --

6 **MR. GRIFFON:** All right. All right.

7 **DR. ULSH:** -- I'll talk to you about it. But
8 no, we don't have any indication that that was
9 eventually rescinded -- I mean in terms of
10 notation in any document. However, like you
11 said, that blip that we saw didn't continue, so
12 that might indicate that it --

13 **MR. GRIFFON:** That's what I'm trying to
14 understand.

15 **DR. ULSH:** Yeah, exactly. But that's
16 circumstantial. I mean I can't point to any
17 particular document that says that.
18 Oh, yeah, so at the same time we also
19 investigated -- since you know, we originally
20 wondered whether or not the fire was involved
21 with this pattern, we also talked to
22 individuals extensively about the badging
23 practices in the aftermath of 1969 fire. And
24 we had a number of people, at least two that I
25 can think of, that confirmed for us that anyone

1 who made entries into 776 after the fire --
2 immediately after the fire -- was indeed badged
3 and in fact was double badged. So that again
4 made us more comfortable saying that this blip
5 was not related to the fire.

6 So anyone else have anything to add or -- if
7 not, I'll turn it over for questions.

8 **MR. FITZGERALD:** Well, I would -- Ron, are you
9 on the phone still?

10 **MR. BUCHANAN:** Yes, uh-huh.

11 **MR. FITZGERALD:** I think you had -- certainly
12 you had worked with Kathy and had some thoughts
13 on this. I'd like to give you a chance to -- I
14 think you responded to at least some of the
15 issues that were raised in the NIOSH response.

16 **MR. BUCHANAN:** Yes, there -- there -- two
17 issues here in that '69/'70 time frame. One is
18 the -- the gap in the data in '69 which Brant's
19 recent e-mail talked about the computer problem
20 and the going to not reading all the badges and
21 several things like that. And these perhaps,
22 or perhaps not, set aside the missing in the
23 140 cases they examined.

24 The other issue was that it kind of -- a more
25 general issue was 1969 and '70 both had the 36

1 percent zeroes, where the previous five years
2 had ten percent and then the next five years --
3 the following five years had ten percent
4 zeroes, and so the -- the items in the recent
5 memo on the '69 period, the computer changeover
6 would not -- shouldn't have carried over into
7 '70 I wouldn't have -- think, and the second
8 issue was that they did not read all the
9 badges. And if they didn't read all the badges
10 as far as zeroes go, my thinking would be if
11 these people were low exposed and so they quit
12 reading their badges and assigned them zeroes,
13 then that shouldn't have made much difference
14 in the number of zeroes recorded because they
15 was already receiving zero to minimum
16 detectable levels in the past since this group
17 that was set aside to read -- not to always
18 read would have been receiving a very low dose
19 anyway, so I can't see really that '69 and '70
20 should have showed a large blip in their zeroes
21 because of that reason. And then -- and you
22 know, in '71, '72, '73 the zeroes came back
23 down to ten percent and so that was where I was
24 at on this last week, from the recent e-mail
25 from NIOSH.

1 **DR. ULSH:** Ron, perhaps I can help a little bit
2 with that. In terms of the num-- the
3 percentage of zeroes, the higher number of
4 zeroes in '69 and maybe spreading into '70,
5 that's entirely consistent with what we know
6 occurred, and that was related to the fire. In
7 other words, the people who were getting --
8 prior to the fire, the people who were getting
9 positive exposures in Building 776 were no
10 longer involved in production activities.
11 Production of plutonium was shut down in the
12 aftermath of the fire. That extended all the
13 way through -- well, Mel, correct me if I'm
14 wrong -- through at least most of '69, maybe
15 even into '70.

16 **MR. CHEW:** That's exactly right.

17 **DR. ULSH:** And they did not resume full-scale
18 plutonium operations for some time after that,
19 and that's the highest exposure potential jobs
20 at the site, so we would expect that the number
21 of zeroes -- the percentage of zeroes would be
22 higher there.

23 **MR. CHEW:** Correct. Agree.

24 **MR. GRIFFON:** And those same people we -- I
25 think we had this discussion. It sounds like

1 old ground, but those same people would not
2 have been involved in the cleanup necessarily?

3 **DR. ULSH:** Well, they might have been in --
4 some of them might have been involved in the
5 cleanup, Mark. However, even there the dose
6 rates that they would experience would be far
7 lower than at --

8 **MR. GRIFFON:** But not --

9 **DR. ULSH:** -- full-scale production.

10 **MR. GRIFFON:** -- (unintelligible) to zeroes,
11 though.

12 **MR. CHEW:** Well, they would not ex-- receive
13 external exposures, it was more cleaning up --
14 you know, deep rems of alpha sitting on the
15 ground here, Mark, so there wouldn't be any --
16 much external exposure at all.

17 **MR. MEYER:** Essentially plutonium was removed
18 fairly quickly after the fire.

19 **MR. CHEW:** Sure -- including the water
20 spillages that came out of the building, so
21 you're looking at deep rem, right, certainly
22 not external exposure.

23 **DR. ULSH:** So you're right, Ron, I don't think
24 that the decision not to read the badges
25 explains the zeroes. I think the explanation

1 for that is the cessation of plutonium
2 production operations.

3 **MR. BUCHANAN:** Okay. Well, do you know more
4 precisely when the plutonium production was
5 back into full scale? Was that a gradual
6 thing, was that a -- a couple months thing, and
7 did that occur at the end of 1970, the
8 beginning of '71, '72, does anybody know when
9 you would consider full-scale plutonium
10 production back to normal?

11 **MR. RICH:** They started back in fairly soon in
12 '77, but it was on a very small scale.

13 **MR. BUCHANAN:** What year -- what? I didn't get
14 that?

15 **MR. CHEW:** That cafeteria line, remember that
16 came up -- remember? Yeah.

17 **MR. RICH:** (Unintelligible)

18 **UNIDENTIFIED:** He said '77, didn't he?

19 **MR. RICH:** '67.

20 **MR. CHEW:** '69, yeah.

21 **DR. ULSH:** Now wait, the fire was in '69.

22 **MR. RICH:** '70.

23 **DR. ULSH:** Okay. Bryce says it started ramping
24 up in '70.

25 **MR. CHEW:** I guess orig--

1 **MR. RICH:** In Building -- in Building 77, so --
2 not -- I'm all right, '70.

3 **MS. MUNN:** (Unintelligible)

4 **MR. CHEW:** We're not saying our ages now, we're
5 talking about the building numbers. To answer
6 your question specifically, you know, Rocky
7 Flats actually started a very small line to
8 process a small amount of quantity. We called
9 that the cafeteria line. We discussed that at
10 length at the last two meetings here, to answer
11 your question. That occurred -- the place came
12 to a halt from about May until about the July -
13 - June, July, August time frame and then the
14 cafeteria line was started up, just basically
15 just one small line to do a small amount of
16 machining. That was just --

17 **MR. RICH:** Even --

18 **MR. CHEW:** -- a couple of chunks.

19 **MR. RICH:** -- even that would have been minimal
20 external exposure because it was low through-
21 put and the -- the full cleanup and return to
22 full operation, I don't have a date for that.

23 **MR. CHEW:** 776 almost took a couple of years --

24 **MR. RICH:** Yeah.

25 **MR. CHEW:** -- to get that line back in because

1 of the extensive fire and repairing all the
2 damage there so 776 never got back in. Some of
3 the work went over to 707, so the answer to
4 your question, full production really -- after
5 the way they left it in '69 prior to '69 fire
6 really didn't get going until mid-'70s and late
7 '70s.

8 **MR. GRIFFON:** So -- so --

9 **MR. CHEW:** Does that answer your question?

10 **MR. GRIFFON:** You -- you've got this -- I've --
11 -- trying to go back to that sheet you said that
12 you had, the zeroes on the top with a line -- a
13 dash through the whole group of workers. Those
14 individuals were quarterly monitored and those
15 -- those were the ones that were kind of shel--
16 they -- they badged them but didn't read.

17 **DR. ULSH:** Right.

18 **MR. GRIFFON:** Right?

19 **DR. ULSH:** Right.

20 **MR. GRIFFON:** And that -- so you have -- so you
21 have two -- two groups of people in these
22 zeroes, theoretically. It could al-- the
23 zeroes could also include people that were
24 dislocated from production operations and were
25 at a lower external exposure potential for that

1 time period. Right?

2 **DR. ULSH:** I think --

3 **MR. GRIFFON:** So --

4 **DR. ULSH:** -- that's accurate.

5 **MR. GRIFFON:** -- so if we look through at -- I
6 mean how -- so if we look through all these
7 zeroes, we wouldn't necessarily see that they
8 were all on quarterly monitoring programs
9 'cause they're also going to include other --
10 other -- some of these production workers that
11 were just dislocated or...

12 **DR. ULSH:** I think that's true, Mark. I think
13 --

14 **MR. GRIFFON:** Yeah.

15 **DR. ULSH:** -- I'm not -- I can't really speak
16 about if a person was on a more frequent badge
17 exchange cycle -- let's say weekly or biweekly
18 or monthly -- before the fire, if they
19 maintained that badge exchange frequency after.
20 I can't really answer that off the top of my
21 head. But in general at Rocky Flats, if you
22 were at -- judged to be a lower exposure
23 potential during that time period, you were on
24 the less frequent badge exchange cycle. So
25 yeah, if you looked at the population of

1 workers who were on quarterly badge exchange
2 cycles, I think it's accurate to say that those
3 would be the lower -- people at lower exposure
4 potentials.

5 **MR. GRIFFON:** I -- I -- you have any follow-up,
6 Joe?

7 **MR. FITZGERALD:** Not -- not --

8 **MR. GRIFFON:** I gue--

9 **MR. FITZGERALD:** Yeah, I was going to say I
10 think -- I think we're clear on this particular
11 issue, although we still have to look at this
12 review.

13 **MR. GRIFFON:** Yeah, I guess what I'm still
14 grop-- and I -- I got to look through the
15 details, I will give the caveat of that, but I
16 -- I'm groping for something to hang my hat on.
17 I -- I feel like this issue of -- we've had
18 different hypotheses offered and that makes me
19 a little uneasy when the -- maybe they're
20 merging together now; I hope so. It seems like
21 --

22 **DR. ULSH:** Well, let me -- let me characterize
23 this -- how -- the ground that we've covered in
24 the working group.

25 **MR. GRIFFON:** Yeah.

1 **DR. ULSH:** I mean at first, when Kathy first
2 noticed this issue, we didn't have any idea why
3 the -- why there would be this particular gap,
4 and so we threw a lot of hypotheses on the
5 table and we systematically started testing
6 those hypotheses. The first and most obvious
7 one was the fire, and so we tested that. It
8 didn't work out; we discarded it; we looked for
9 another one. So I mean to say that we've
10 tested a number of hypotheses I think is a good
11 thing. I mean we considered all the -- all the
12 plausible alternatives that we could think of.
13 Finally when we hit on this --

14 **MR. GRIFFON:** Well, I didn't really say you
15 tested a hypothesis. I said you offered
16 hypotheses. I meant -- you know --

17 **DR. ULSH:** We did, but --

18 **MR. GRIFFON:** Yeah.

19 **DR. ULSH:** -- then we followed --

20 **MR. GRIFFON:** Yeah.

21 **DR. ULSH:** -- on and tested them.

22 **MR. GRIFFON:** And -- but I -- I guess that's
23 the details I haven't seen or -- you know, so -
24 - I mean there -- there -- you know, all these
25 -- a lot of this seems to be, again, you know,

1 so-and-so's recollection about computers
2 switching over and --

3 **DR. ULSH:** No, that's actually --

4 **MR. GRIFFON:** -- now these zero sheets I
5 haven't seen, so I --

6 **DR. ULSH:** -- that's documented. I mean that's
7 --

8 **MR. GRIFFON:** Well --

9 **DR. ULSH:** -- in the monthly progress reports,
10 so --

11 **MR. GRIFFON:** -- that -- that was another
12 action item I just wanted to add onto your
13 action that was previously there. We had --
14 previously you had agreed to post the monthly
15 progress reports. Maybe that would be helpful
16 --

17 **DR. ULSH:** Okay.

18 **MR. GRIFFON:** -- to -- yeah.

19 **DR. ULSH:** But I think that's a sign of the
20 strength of the approach that we took, that we
21 considered all of the plausible hypotheses and
22 we were left with one that fit.

23 **MR. FITZGERALD:** I guess the one related issue
24 -- and this is -- this is something that came
25 up in our review of the accident investigation

1 that Mel briefed us on, and then we went
2 through a series of discussions in terms of
3 cross-walking the -- it was -- 110 is the
4 number I remember that were identified in the
5 AI report as having been monitored, either 24
6 hours --

7 **DR. ULSH:** Lung counting.

8 **MR. FITZGERALD:** -- or afterwards, and I think
9 we came up with a list of 77 names or it was
10 something in the -- 70-something to -- that
11 were identified. And Brant, the last time we
12 hit this ping-pong ball back it was -- okay,
13 what about the balance of the individuals; is
14 there any way to figure out -- you know, if 110
15 were monitored, one should be able to at least
16 find the 110 --

17 **MR. GRIFFON:** That was -- that was in vivo
18 counts, right, or --

19 **DR. ULSH:** Lung counts.

20 **MR. FITZGERALD:** Lung counts.

21 **DR. ULSH:** Yeah, these were -- this was
22 mentioned in the -- the 19-- the fire report --

23 **MR. GRIFFON:** Right.

24 **DR. ULSH:** -- and it was mentioned that there
25 were I think 40-some people counted within the

1 first 24 hours --

2 **MR. FITZGERALD:** Twenty-four hours, right, for
3 the (unintelligible) --

4 **DR. ULSH:** -- and then some 110 within the
5 first month, I think.

6 **MR. FITZGERALD:** Right.

7 **DR. ULSH:** So but the names of those people
8 weren't -- wasn't given --

9 **MR. FITZGERALD:** Right.

10 **DR. ULSH:** -- in the fire report, so --

11 **MR. FITZGERALD:** In the report itself.

12 **DR. ULSH:** -- we've -- we went to some length -
13 - I mean we took all the steps that we could
14 think of easily to identify the people who
15 might have been lung-counted. Gene Potter put
16 some work into this. Gene, are you still out
17 there?

18 **MR. POTTER:** Yes.

19 **DR. ULSH:** Okay. Thank you. Can you walk us
20 through your report in terms of the sources of
21 data that we looked at and what we found?

22 **MR. POTTER:** On lung counting?

23 **DR. ULSH:** Yeah, lung counting in the aftermath
24 of the '69 fire.

25 **MR. POTTER:** Okay. I'll try and rely on my

1 memory here, which is not always the best, but
2 -- and I think this is incorporated into
3 Craig's report.

4 **DR. ULSH:** No --

5 **MR. LITTLE:** Yeah, some of it -- some of it is
6 in there. I didn't put all the detail in,
7 but...

8 **MR. POTTER:** Yeah, basically we had a list of
9 interviewees that were available from the
10 declassified Rocky Flats investigation report -
11 - or the fire investigation report, and we went
12 after the people in that group who were either
13 claimants or that we had -- that -- or had had
14 their records scanned for other purposes and
15 tried to do matches on that. And I'm afraid
16 I'll have to -- if you give me a minute I can
17 look up what those statistics were.

18 **DR. ULSH:** Well, not -- not necessarily
19 important if you -- I -- I think there was
20 another source of data that we looked at when
21 we had the interview list, as Gene said, but we
22 didn't know whether those people corresponded
23 to the people who should have been -- who, you
24 know, were in the 110. Separately from that we
25 also had a document -- I think it's Plot, is

1 the reference -- another document that listed
2 people who were sent to medical/decon, and we
3 took a look at that, too. And as Gene said, we
4 looked at the files that we had in hand, either
5 because they were claimants or because we had
6 pulled them as part of the logbook review, so
7 we had them on hand. And of the people that we
8 know were sent to medical and decon and we had
9 the files available, we checked and yes indeed,
10 the lung counts are in there. Now that's a
11 fairly small number. That doesn't account for
12 the 110, or even the 40.

13 **MR. FITZGERALD:** You were going to look at the
14 classified version of the report to see if
15 there might be some names in there, too.

16 **DR. ULSH:** We did, and we didn't find --

17 **MR. FITZGERALD:** There were none --

18 **DR. ULSH:** -- any names there.

19 **MR. FITZGERALD:** -- there were none, okay.

20 **DR. ULSH:** So that kind of led us to the point
21 where the next step would be pretty resource-
22 intensive, and that would be pulling all of the
23 rad files, and we wanted to discuss that with
24 SC&A and the working group before we took that
25 step. I mean we kind of went as far as we

1 could easily, and stopped. So...

2 **MR. FITZGERALD:** Now I think our interest in
3 the beginning was just simply to use this as an
4 opportunity, in the face of the AI report, just
5 to validate that in fact if these were
6 identified explicitly in the AI report as the
7 number of individuals being monitored, could
8 you in fact find these individuals in terms of
9 the dose file. Again another test of
10 validation, particularly given the fact it
11 falls within the '69/'70 period where there's
12 some questions about, you know, were people in
13 fact monitored. So that was the reasoning.

14 **DR. ULSH:** But that was external monitoring.

15 **MR. FITZGERALD:** I am sorry, internal. That's
16 where we are now --

17 **DR. ULSH:** Yes.

18 **MR. FITZGERALD:** -- so -- and there's been no -
19 - I don't think there's been any actual cross-
20 validation with the data file, just simply
21 trying to identify who the people are.

22 **DR. ULSH:** Yeah, just those ones that we knew
23 were sent to medical and decon and we have the
24 files on hand, we checked. And indeed, in
25 every one of those there were lung counts in

1 there.

2 **MR. FITZGERALD:** Right.

3 **DR. ULSH:** That's as far as we can -- that's
4 about as much as we can say at --

5 **MR. GRIFFON:** And those indivi-- those files,
6 are -- are they --

7 **DR. ULSH:** Well, actually --

8 **MR. GRIFFON:** -- accessible to us?

9 **DR. ULSH:** Well, they will be, since --

10 **MR. GRIFFON:** Yeah.

11 **DR. ULSH:** -- you've asked that we post those -
12 - I think it's part of the logbook --

13 **MR. GRIFFON:** Yeah --

14 **DR. ULSH:** -- those individuals
15 (unintelligible) --

16 **MR. GRIFFON:** -- I mean I would say why don't
17 we start there and --

18 **MR. FITZGERALD:** All right.

19 **MR. GRIFFON:** -- I don't think we need to
20 request broader --

21 **MR. FITZGERALD:** No, no, this is an adjunct
22 that --

23 **MR. GRIFFON:** -- you know, more rad files at
24 this point.

25 **MR. FITZGERALD:** -- came up with the AI --

1 **MR. GRIFFON:** Yeah.

2 **MR. FITZGERALD:** -- discussion, so I wasn't
3 proposing a new avenue, but more or less make
4 it part of what we're doing already.

5 **DR. ULSH:** And those are identified by name in
6 -- in the --

7 **MR. FITZGERALD:** Right, you gave us the
8 spreadsheet.

9 **DR. ULSH:** Yeah, and the files will come over
10 as part of the (unintelligible) --

11 **MR. FITZGERALD:** That was a spreadsheet -- CEDR
12 60 or 70, I can't remember...

13 **MR. GRIFFON:** And you...

14 **MR. FITZGERALD:** I think we're talking about
15 the same thing.

16 **DR. ULSH:** I'll show you what I'm talking about
17 and you can tell me if that's what you're
18 talking about.

19 **MR. FITZGERALD:** Sixty-nine -- 69 -- 69 people
20 were interviewed. These are people interviewed
21 for the unclassified report, yeah. This is the
22 one you gave me in Las Vegas.

23 **MR. GRIFFON:** How many of those, Brant -- you
24 talking a handful or...

25 **DR. ULSH:** What's that?

1 **MR. GRIFFON:** How many of those people did you
2 find in your records, do you know off-hand? Is
3 it four or five or --

4 **DR. ULSH:** Gene, do you recall how many we
5 found? It was a pretty small number, I think -
6 -

7 **MR. GRIFFON:** Yeah, but that's --

8 **DR. ULSH:** -- maybe six.

9 **MR. GRIFFON:** That's fine. I think that's --

10 **MR. POTTER:** Yeah, of the ones that were sent
11 to medical that we have records for?

12 **DR. ULSH:** Yes.

13 **MR. POTTER:** I think that was six out of six we
14 found lung counts in records.

15 **DR. ULSH:** So we still don't have a really good
16 handle on who the 41 might have been or who the
17 100 might have been.

18 **MR. FITZGERALD:** Right.

19 **DR. ULSH:** I can only --

20 **MR. CHEW:** The -- I'll just make the point that
21 the number of people interviewed -- quite a few
22 of them were management because they were
23 talking about the management issues. They
24 would not have been involved with any cleanup
25 of fire so they would not have been monitored.

1 So don't correlate the 77 interviewed with
2 (unintelligible) data.

3 **MR. FITZGERALD:** Yeah, good point.

4 **DR. ULSH:** I would caution, the stuff going
5 around the table right now contains Privacy Act
6 information, so please be appropriately careful
7 with it.

8 **MR. FITZGERALD:** I agree with the idea of
9 trying to go ahead and cojoin (sic) this with
10 some of the other reviews and --

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

12 **MR. FITZGERALD:** -- validate it, so --

13 **MR. GRIFFON:** I don't think we need to dig for
14 further files related to that fire, rea-- at
15 this point, anyway. And -- and I was just
16 going to ask Mel a follow-up on the -- you said
17 that individuals that were double-badged, those
18 were probably the first responders kind of
19 thing, is that...

20 **MR. CHEW:** No, no, they weren't. They were the
21 -- after the fire was put out --

22 **MR. GRIFFON:** Uh-huh.

23 **MR. CHEW:** -- then the next level was to go
24 back to recover the plutonium --

25 **MR. GRIFFON:** Right.

1 **MR. CHEW:** -- yeah, and then also the people
2 who were part of the investigating team, those
3 are the ones who were --

4 **MR. GRIFFON:** Okay. And then there was this
5 sort of lower tier de-- after the material was
6 recovered, then there was a lower tier --

7 **MR. CHEW:** Yeah.

8 **MR. GRIFFON:** -- cleanup work, which then they
9 would have been at lower --

10 **MR. CHEW:** Yes, uh-huh.

11 **MR. GRIFFON:** -- exposure risk, certainly.
12 Right? Right. From an external standpoint.

13 **MR. CHEW:** Uh-huh.

14 **MR. GRIFFON:** Right? Okay. And -- do -- do
15 you -- do we have any sense of -- of the --
16 that group that went in initially? I mean I
17 imagine it's a small group, select group.

18 **DR. ULSH:** We do have individuals, but I don't
19 know that we could --

20 **MR. CHEW:** Oh, yeah, I don't know -- I don't
21 know --

22 **MR. FITZGERALD:** (Unintelligible) that 41 that
23 were monitored the first 24 hours --

24 **MR. CHEW:** Yeah, we're talking about the
25 follow-up group that went in after we put out

1 the fire to now make the investigation on the
2 fire --

3 **MR. FITZGERALD:** Ah.

4 **MR. CHEW:** -- (unintelligible) couple of months
5 and also to recover the material. Recovery of
6 the material is the key one here, 'cause now
7 that there was -- remember, we had the
8 discussion they were professional people who
9 went in, remember, and volunteers, but everyone
10 volunteered, as I understand, and -- and they
11 very carefully went back and spoon-by-spoon
12 recovered because criticality was an issue
13 here, remember, potential, so that's why they
14 were double-monitored -- double-badged.

15 **MR. FITZGERALD:** Okay.

16 **MR. GRIFFON:** And -- but we don't necessarily -
17 - wouldn't be a way to easily find --

18 **MR. FITZGERALD:** We can't pinpoint who they
19 are.

20 **DR. ULSH:** We would know a few --

21 **MR. GRIFFON:** Yeah.

22 **DR. ULSH:** -- individual names, but certainly
23 not in a comprehensive way we wouldn't be able
24 to say (unintelligible).

25 **MR. CHEW:** We certainly know some of the key

1 people who were involved --

2 **DR. ULSH:** Yeah.

3 **MR. CHEW:** -- example like REDACTED, REDACTED*
4 were there, but you know, they would know --
5 remember names of people, that's about all I
6 (unintelligible).

7 **MS. MUNN:** Ken said that the number of people
8 who actually went into the building was never
9 more than a dozen --

10 **MR. CHEW:** Oh, yeah.

11 **MS. MUNN:** -- or 15 at a time, very small
12 numbers --

13 **MR. CHEW:** Very small num-- very controlled.

14 **MS. MUNN:** -- all double-badged --

15 **MR. FITZGERALD:** That makes sense.

16 **MS. MUNN:** -- all professionals, yeah.

17 **MR. CHEW:** Double-suited, too.

18 **MS. MUNN:** Yeah -- oh -- oh, you can bet your
19 bottom dollar.

20 **MR. GRIFFON:** No, I was just thinking if we,
21 you know, can track them and they'd be likely
22 higher exposed, at least those initial people -

23 -

24 **MR. CHEW:** Well, not necessarily.

25 **MR. GRIFFON:** -- that -- that would be a --

1 **MR. CHEW:** You know, we're talking about really
2 a oxide sitting on a --

3 **MR. GRIFFON:** Yeah.

4 **MR. CHEW:** -- a --

5 **MR. GRIFFON:** Yeah.

6 **MR. CHEW:** -- not a chunk of plutonium anymore,
7 you know, so --

8 **MR. GRIFFON:** I'm just thinking of non-- non-
9 zero, you know --

10 **MR. FITZGERALD:** Well, that was the whole
11 exercise I think --

12 **MR. GRIFFON:** -- ways of cor--

13 **MR. FITZGERALD:** -- focused around the AI --

14 **MR. GRIFFON:** Yeah, exactly.

15 **MR. FITZGERALD:** -- report was to see if we
16 could find those people that --

17 **MR. GRIFFON:** Yeah.

18 **MR. FITZGERALD:** -- might have had the higher
19 potential. But like everything else, it's
20 turning out --

21 **MR. GRIFFON:** Right.

22 **MR. FITZGERALD:** -- not to be straightforward.

23 **MR. GRIFFON:** Right. Right, right. Okay. I
24 don't know that -- other than -- I would like
25 to see those monthly progress reports. I did

1 catch that when I re-- this weekend when I was
2 reviewing transcripts, I said oh, there's
3 another action item for the matrix, but that
4 might be helpful for me just to put -- put your
5 -- you know.

6 **DR. ULSH:** SC&A actually already has those.
7 You may not know it. I think you do.

8 **MR. GRIFFON:** Oh.

9 **DR. ULSH:** There was a large volume of material
10 that Kathy requested. I actually --

11 **MR. FITZGERALD:** (Unintelligible) discs, maybe.

12 **DR. ULSH:** Yeah, I actually found them in a
13 miscellaneous document.

14 **MR. GRIFFON:** Oh, okay.

15 **MR. FITZGERALD:** Brant may be correct. We may
16 have this on a disc that --

17 **DR. ULSH:** But --

18 **MR. FITZGERALD:** -- you know, is four months
19 old.

20 **DR. ULSH:** -- that's probably not going to be
21 as easily retrievable. I mean I pulled out
22 (unintelligible) --

23 **MR. FITZGERALD:** Kathy, do you remember that?

24 **MS. ROBERTSON-DEMERS:** Say that again?

25 **MR. FITZGERALD:** The quarterly progress

1 reports, you remember getting that by disc or -
2 - I -- I seem to remember something way back --
3 prehistoric times, April, May maybe.

4 Well, we can --

5 **MS. ROBERTSON-DEMERS:** I think that was in hard
6 copy actually.

7 **MR. GRIFFON:** At -- at any rate --

8 **MR. FITZGERALD:** -- we can figure it out. All
9 right.

10 **MR. GRIFFON:** Yeah, or Brant --

11 **DR. ULSH:** It'll be easier if I just
12 (unintelligible) --

13 **MR. FITZGERALD:** All right.

14 **MR. GRIFFON:** Yeah, just post them and it'll be
15 easy.

16 **DR. ULSH:** Let me -- let me warn you, Mark.
17 It's not a complete set. I mean I don't start
18 in January of '52 and go all the way up to
19 December of --

20 **MR. GRIFFON:** Understood, yeah.

21 **DR. ULSH:** -- '71. There are some holes in
22 there --

23 **MR. GRIFFON:** Understood.

24 **DR. ULSH:** -- that I wasn't able to find, but
25 there's a lot of them.

1 **NEUTRON DOSIMETRY**

2 **MR. GRIFFON:** All right. Are we on the next
3 topic?

4 **DR. WADE:** Yes, we are.

5 **MR. GRIFFON:** Neutron -- this is a -- I think
6 there's a list of five or seven --

7 **MR. FITZGERALD:** Yeah, this is the external
8 dosimetry, more specifically neutron,
9 discussion that -- we had a conference call
10 between NIOSH, I think Ron was the star for our
11 team, and basically I think that was a very
12 good call. We came up with five agreed-to
13 actions which there was one or two that were
14 added at a subsequent workgroup meeting, and I
15 think they're pretty -- pretty clear and crisp
16 and there's ongoing actions. It's just -- I
17 think they stand as open only because, you
18 know, the OTIBs are being revised in some cases
19 --

20 **MR. GRIFFON:** What's the -- Brant, you've got
21 the matrix item open, I don't know --

22 **DR. ULSH:** It's item number 23, if that helps.

23 **MR. GRIFFON:** Item number 23.

24 **MR. FITZGERALD:** Right.

25 **DR. ULSH:** It's on page 11 of 16 of the --

1 **MR. FITZGERALD:** And Brant -- Brant and I have
2 been exchanging status reports, mostly just to
3 make sure that we're clear on where things
4 stand, but I would defer to you as far as --
5 since these are kind of actions on NIOSH.

6 **DR. ULSH:** Yeah. Joe suggested that we have a
7 number of issue-specific conference calls and I
8 kind of kicked the can down the road until
9 after this working group meeting. I just -- we
10 just couldn't swing it, but this is one where I
11 think that that would be good to have another
12 conference call on the neutron action items.
13 And like Joe said, there were -- I see seven
14 items here listed on the matrix. Two of those
15 I think that we can agree have been completed,
16 and that is NIOSH to provide identifiers for
17 the HIS-20 database; we've done that one. And
18 then the other one was Roger was going to
19 provide background for NDRP report
20 (unintelligible) 1.1; we've done that one.
21 We are in progress with revising OTIB-58 right
22 now, which is the external coworker data. We
23 are also in process of testing the N/P ratios
24 in the '50s. That's in process. And let me
25 see, calculated versus measured, that's going

1 to be part of that -- well, wait a minute. No,
2 expand the explanation of the technical basis
3 for N/P ratios in the '50s. I actually
4 provided the language that we were going to put
5 into the OTIB, provided that to Ron, and I
6 think Ron took a look at that, and I think the
7 piece that you were waiting on there was just
8 to see that yes, in fact that had been
9 incorporated into the OTIB.

10 **MR. FITZGERALD:** Yeah.

11 **DR. ULSH:** Okay, so that's the status on that
12 one. And then we come to the spot-check the
13 coworker methods by comparing calculated versus
14 measured neutron doses. A draft of that hit my
15 desk late last week and I just couldn't turn it
16 around, so that's one that we should be ready
17 to talk about fairly soon I think.

18 NIOSH to provide benchmark N/P ratios in the
19 '50s and '70s, and I think what we were talking
20 about here was measured -- I think maybe John
21 Mauro requested if there were any measured N/P
22 ratios during those time periods, early in the
23 '50s, early in the '70s.

24 **MR. FITZGERALD:** *Coup de gras*, remember that
25 whole --

1 **DR. ULSH:** Yes.

2 **MR. FITZGERALD:** His -- his thing was that --

3 **MR. GRIFFON:** Well, that would bound it, yeah,
4 yeah.

5 **MR. FITZGERALD:** Yeah, that would bound it and
6 --

7 **DR. ULSH:** Actually I think he talked about
8 that with the measured versus -- at any rate,
9 he said it at some point.

10 **MR. FITZGERALD:** At any rate, right. Right.

11 **MR. GRIFFON:** Several *coup de gras*.

12 **DR. ULSH:** Yeah.

13 **MR. FITZGERALD:** *Coup de gras*.

14 **DR. ULSH:** The -- I think we actually looked
15 for some of that, some measure neutron to
16 photon ratios in the '70s, and we didn't have
17 much luck finding that. I don't want to say
18 that's our final answer yet, but we hadn't had
19 a lot of initial success. Roger, is that
20 correct?

21 **MR. FALK:** Brant, when the NDRP project
22 started, we looked very extensively for
23 measured values in the '50s and we found
24 nothing, so I'm not sure that we're going to
25 have any more success looking for the values in

1 the '50s. Now we did not look for the field
2 measurements in the -- we did not look for the
3 field measurements in the 1970s, but I've not
4 seen any in a data capture so far.

5 **DR. ULSH:** So I just want to prepare you that
6 we may not have any luck in the '50s, probably
7 won't. I don't know about how the '70s is
8 going to turn out. We'll just have to look and
9 see.

10 And then number seven I think was a fall-back
11 position that if nothing else worked we might
12 want to consider an alternative coworker model.
13 I think that's -- these are issues that I think
14 we agreed that we need to have a conference
15 call with SC&A. We're not quite ready, but --

16 **MR. FITZGERALD:** All right.

17 **DR. ULSH:** -- sometime soon.

18 **MR. BUCHANAN:** This is Ron. I would like to
19 iterate one point was that I sent an e-mail re-
20 requesting the individual neutron and photon
21 doses for '52 through '61, and I'd like to --
22 to state that that is not the individual
23 identifiers that you talked about in action
24 item number one. Anyway, it didn't fulfill
25 that request and -- so Brant, are you still

1 working on getting that data?

2 **DR. ULSH:** Ron, I think I'd like to defer that
3 to the conference call. I'm looking at -- Joe
4 just handed me your e-mail and I've of course
5 seen it before. I'm not sure -- I'm looking at
6 the column headers on what you're requesting --
7 year, quarter, employee number of building,
8 neutron (unintelligible) and total. I know
9 that we didn't -- when we were constructing
10 OTIB-58 we didn't poll the data in that level
11 of detail. Now that's not to say that it is
12 inaccessible. Certainly on an individual by
13 individual basis that's available in NDRP -- in
14 the NDRP files. But in terms of a collected,
15 like into one spreadsheet, I don't know that we
16 would have the level of detail that you're
17 asking about here, but -- we might need to have
18 some more correspondence about that.

19 **MR. BUCHANAN:** Okay. I just wanted to go on
20 record that that wasn't fulfilled in item
21 number one and, you know, we can discuss that
22 further.

23 **DR. ULSH:** Okay.

24 **MR. GRIFFON:** Joe, can you forward this e-mail
25 to the other workgroup --

1 **MR. FITZGERALD:** Yes, I will.

2 **MR. GRIFFON:** -- nobody has this, right? So --
3 I don't want to --

4 **MR. FITZGERALD:** Yeah, this -- this is a couple
5 weeks ago.

6 **MR. GRIFFON:** Yeah, maybe forward it to
7 everybody, you know, so we can all...

8 **MR. FITZGERALD:** Now just to reiterate --

9 **MR. GRIFFON:** Anything else --

10 **MR. FITZGERALD:** -- we've had a ongoing
11 discussion and exchange on this issue all
12 along, so this has been sort of a -- evolving,
13 you know, as we closed things out or have tried
14 to close things out, we've been moving this
15 thing forward, so I think it would benefit from
16 a call or two.

17 **MR. GRIFFON:** All right.

18 **MR. FITZGERALD:** And I don't think it's --

19 **MR. GRIFFON:** I think those --

20 **MR. FITZGERALD:** -- I don't think we've
21 identified necessarily, although I don't want
22 to close the door on SEC issue, but certainly
23 it would be useful to, on the benchmarks
24 question, just be sure that the back
25 extrapolation approach is going to be, you

1 know, sound and there's been questions raised
2 on that.

3 **MR. GRIFFON:** I think that's probably a good
4 place to handle this more technical discussion
5 of these -- you know, this -- these issues is a
6 call in between the next workgroup -- now and
7 the next workgroup or now and the next Board
8 meeting, whatever, can (unintelligible) that so
9 --

10 **DR. ULSH:** We're getting some kind of a weird
11 echo in here.

12 **DR. WADE:** Yeah, we're getting feedback.

13 **MR. GRIFFON:** I think we --

14 **DR. WADE:** I'm sure -- I don't know, someone
15 has done something in the last five minutes
16 that's resulted in our getting feedback. It
17 could involve a speaker phone or a speaker
18 phone near a -- I don't know, so I would just
19 ask each of you to think about if you've done
20 anything in the last five minutes, don't do
21 that anymore -- stop doing that. Anybody going
22 to -- ah, that fixed it. Thank you.

23 **MR. GRIFFON:** Okay. Anything else on that
24 topic that --

25 **MR. FITZGERALD:** No, I think we can --

1 **MR. GRIFFON:** Arjun --

2 **MR. FITZGERALD:** -- go ahead and schedule some
3 technical specific issues phone calls.

4 **DR. MAKHIJANI:** Yeah, there is -- there is one
5 neutron-to-photon ratio question that came up -
6 - I mentioned it -- from the data completeness
7 review, is -- we haven't kind of focused in on
8 the '58 to '59 -- now Roger Falk, did -- when
9 you -- when you looked at the -- this question
10 relates to the completeness of the photon data
11 in the late '50s for the 700 building.

12 **DR. ULSH:** Photon data?

13 **DR. MAKHIJANI:** Photon data.

14 **DR. ULSH:** Okay.

15 **DR. MAKHIJANI:** So that if the photon data are
16 not complete, then the neutron-to-photon ratios
17 calculated from the monitored workers at that
18 time would be uncertain in some way. Did you
19 come ac-- when you -- when you did the
20 compilation of the -- now this is from my
21 memory -- when we talked about the 700 building
22 or the 70-series buildings, that you had no
23 neutron monitoring up to '57. And as I recall,
24 you said that you would calculate the N/P
25 ratios for '58, '59 and extrapolate -- use

1 those, because it was the same process. I'm
2 wondering, when you compiled the data in the
3 NDRP, did you come across gaps in the -- in the
4 photon -- in the -- in the gamma records that
5 were a year, two years in the kind -- the kind
6 of gaps that we were talking about and how did
7 you fill the gaps?

8 **MR. FALK:** We did not find any significant gaps
9 for the building 71 people except for the
10 foundry workers from '53 through January of --
11 through January of 1957, and we addressed that
12 in the NDRP protocol by basically using their
13 wrist dosimetry to then calculate what their --
14 what the body gamma dose would be, and that is
15 all documented in the NDR-- that's all
16 documented in the NDRP protocol and is also
17 part of the -- part of the reports for the
18 claimants who are -- were affected by that.
19 That is the only significant problem that we
20 found with the gamma results for '71 workers.

21 **DR. MAKHIJANI:** So -- so you didn't find any
22 sort of '58 -- problems in that time frame
23 after 1957?

24 **MR. FALK:** No, we didn't find any -- we did not
25 -- we did not find any really significant

1 problems after that, no.

2 Now also keep in mind that in September of 1957
3 they had that fire in the plenum* of the
4 building 71 that basically shut down most of
5 the building for several months, but that is a
6 real discontinuity and not a gap in the
7 monitoring records.

8 **DR. MAKHIJANI:** Okay. That -- that was the one
9 question I had, Mark.

10 **MR. GRIFFON:** All right. So we'll -- we'll set
11 up a conf-- you know, some sort of conference
12 call between SC&A and NIOSH on that -- okay, so
13 -- anything else on your side, Brant, to add?

14 **DR. ULSH:** No.

15 **SUPER S**

16 **MR. GRIFFON:** Okay. I think the next topic is
17 super S -- did I skip...

18 **DR. WADE:** No, super S.

19 **MR. GRIFFON:** Super S, okay. And Joe, I think
20 this is kind of a quick update item, if --

21 **MR. FITZGERALD:** Yeah, it's --

22 **MR. GRIFFON:** Joyce sort of gave you a --

23 **MR. FITZGERALD:** Joyce is not on the -- on --

24 **MR. GRIFFON:** Right.

25 **MR. FITZGERALD:** -- the call, but she's been

1 very busy just finishing up her validation,
2 frankly, of the model cases and has gone
3 through what I -- I think you described earlier
4 as going from HIS-20 to CEDR now looking at
5 some way to compare some of these model cases
6 to the raw data. She's finding some
7 disparities with -- you know, understandably
8 with some of the data in HIS-20 and CEDR. And
9 at this stage as I think the status is -- is
10 her, in order to tie this up and finish it,
11 being able to compare the -- I think she's
12 doing five or six model case comparisons with
13 the actual claimant file in terms of the
14 bioassay data. And I think that was the only
15 thing I would report from her end, that -- and
16 this is part and parcel the same thing we've
17 been talking about all day. I think the
18 realization independently on her part,
19 empirically going through this, that yeah,
20 there was -- you know, she found that CEDR was
21 actually more complete than HIS-20 in some case
22 and there were holes in HIS-20, and now she's
23 recognizing that in order to do a uniform and
24 consistent comparison she needs to have access
25 to the raw --

1 **DR. ULSH:** Rad files?

2 **MR. FITZGERALD:** -- (unintelligible) rad files,
3 right. So that's -- I think she's --

4 **MR. GRIFFON:** With -- again, with -- the goal
5 of this was to look at the others involved in
6 the fire and see if the design cases were
7 bounding.

8 **MR. FITZGERALD:** Right.

9 **MR. GRIFFON:** That was the -- the original
10 action.

11 **MR. FITZGERALD:** And the question of -- of --
12 yeah, bounding and -- that's the issue she's
13 really trying to resolve and finish up on at
14 this stage. No issues to report, but just
15 simply trying to finish that up and demonstrate
16 that that is in fact the case in terms of the
17 model cases, the 28 (unintelligible). So
18 that's the status of that. I think, assuming
19 we can work out the arrangement to -- and we
20 have these cases identified, so it should be
21 pretty straightforward, you know, getting to
22 the actual -- the raw bioassay data that --
23 whatever.

24 **MR. GRIFFON:** So -- so we're close to clo--

25 **MR. FITZGERALD:** We're close to closure on the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

--

MR. GRIFFON: -- to closure on that, yeah.

MR. FITZGERALD: -- right, close to closure.

MR. GRIFFON: It would -- probably would have been closed by now except for the fact that we -- we were --

MR. FITZGERALD: Well, yeah.

MR. GRIFFON: -- really looking at HIS-20, then --

MR. FITZGERALD: She went to different --

MR. GRIFFON: -- we needed the -- needed the rad files, right.

MR. FITZGERALD: -- databases and realized, as we have (unintelligible) to say that really she's going to need to compare it with the raw data in order to be confident, and that -- that's where we are.

MR. GRIFFON: Yeah.

MR. FITZGERALD: So we'll need to come -- somehow I guess identify those five or six cases and then get those numbers or those identi-- identifications to you somehow and then get the actual file, and that should take care of the high-fired super S issue from that standpoint.

1 **SAFETY CONCERNS**

2 **MR. GRIFFON:** And I guess we're all winding
3 down here a little bit, but the -- I mean I --
4 I don't want to forget these items which are
5 sort of the safety concerns, and then I don't
6 even think I put it on my list of -- of -- on
7 the agenda, but I -- I think the safety
8 concerns and the individual petitioners' --

9 **MR. FITZGERALD:** Affidavits and allegations.

10 **MR. GRIFFON:** -- affidavits, yeah, that follow-
11 up that you did. I think -- I think there were
12 two separate --

13 **DR. ULSH:** They were separate.

14 **MR. GRIFFON:** -- actions, right, so --

15 **MR. FITZGERALD:** Right.

16 **MR. GRIFFON:** And you've provided responses on
17 both of them at this point.

18 **DR. ULSH:** I'll let --

19 **MR. GRIFFON:** Yeah.

20 **DR. ULSH:** -- Karin perhaps summarize the
21 safety concern issue in terms of the concerns
22 expressed by the workers. We made an effort to
23 capture all of the concerns that were expressed
24 either in the petition or in public comment
25 sessions at the Advisory Board meeting or

1 during working group meetings, captured all of
2 those. Karin actually pulled that document
3 together and we responded. And we sent that
4 out some time ago, so I -- but it was pretty
5 massive, so I can understand if it takes some
6 time to review.

7 In terms of the safety concerns -- well, unless
8 you want to talk about --

9 **MR. FITZGERALD:** No, I --

10 **MR. GRIFFON:** No, huh-uh.

11 **MR. FITZGERALD:** I -- I would certainly say,
12 you know, we've had both documents, and Kathy
13 Robertson-DeMers, are you still on?

14 **MS. ROBERTSON-DEMERS:** Yeah, I am.

15 **MR. FITZGERALD:** Okay. And certainly Kathy has
16 done her usual yeoman's job of going through,
17 and it was a lengthy review, and I think that
18 review is complete, although we're still
19 finishing the write-up. And this will be
20 treated in the evaluation that we're going to
21 provide the Board.

22 Is there anything you want to speak to in
23 general terms on either the safety concerns
24 piece or the -- I guess it's called Rocky Flats
25 data integrity examples, something -- that's

1 close.

2 **MS. ROBERTSON-DEMERS:** (Unintelligible) spoke
3 to the safety concerns, there's just a few
4 items that we probably should discuss at some
5 point when -- after the report is delivered to
6 NIOSH, or at least that portion. There are
7 some issues that we don't agree on.

8 **MS. JESSEN:** Can I --

9 **MS. ROBERTSON-DEMERS:** Not very many, but a
10 few.

11 **MS. JESSEN:** Can I ask, is this the first set
12 of safety concerns or the second set of safety
13 concerns?

14 **MS. ROBERTSON-DEMERS:** I have rolled them all
15 together.

16 **MS. JESSEN:** Oh.

17 **DR. ULSH:** Yeah, if you -- if you recall -- I
18 can't even remember how we became aware of
19 these safety concerns. Kathy may have --

20 **MR. GRIFFON:** Yeah, yeah, that's --

21 **DR. ULSH:** -- (unintelligible), I don't -- but
22 there's a database of about 5,000 safety
23 concerns. And for those listening in who may
24 not know, this was a formal reporting mechanism
25 where workers could raise particular issues

1 that they were concerned about and, if necess--
2 if it couldn't be resolved with the line
3 management, then they went to a joint
4 company/union safety committee -- JCUSC -- and
5 so there were about 5,000 of those throughout -
6 -

7 **MR. GRIFFON:** Started in the '70s. Right?
8 Yeah.

9 **DR. ULSH:** -- '70s I think and went up to the
10 2000s, I think. And I first took a pass
11 through those and identified -- I don't even
12 know how many, a number, a set --

13 **MS. JESSEN:** I think there were 33 or something
14 the first --

15 **MR. GRIFFON:** Thirty-five, 33, yeah, something
16 like that.

17 **DR. ULSH:** -- 30-something safety concerns
18 that, just from the title and the brief
19 description, looked to be of interest, perhaps,
20 from a data integrity standpoint. SC&A then
21 proposed a second set of about 17 or so, and so
22 that brings our total to about 50 I guess that
23 we've looked at. We provided the -- our
24 evaluation of the first set, and we discussed
25 that at the last working group meeting, and I

1 think there were one or two perhaps that we
2 weren't in complete agreement on from the first
3 set.

4 The second set of 17 we provided -- I don't
5 know, a couple of weeks ago maybe, and so that
6 brings our total to about 50, but SC&A is still
7 reviewing that second set I think.

8 **MR. FITZGERALD:** Right, I think Kathy's gone
9 through them. You want to add anything to
10 that, Kathy?

11 **MS. ROBERTSON-DEMERS:** No, I -- that pretty
12 much -- we're going to have to go through some
13 of these because we disagree with the NIOSH
14 evaluation and we'll have to work together
15 through them. There's not too many out of the
16 50.

17 **MR. GRIFFON:** Okay.

18 **MR. FITZGERALD:** Yeah.

19 **MS. ROBERTSON-DEMERS:** And we still owe you a
20 report on all 50.

21 **MR. FITZGERALD:** Right, I was saying earlier I
22 think we've gone through them, but we haven't
23 actually written up a response that would be
24 the response on this.

25 **DR. ULSH:** Will that be separate from the

1 larger report, or will that be --

2 **MR. FITZGERALD:** Well, this -- this is a
3 question I think we're not quite settled on the
4 timing because if the timing for submitting the
5 evaluation is fairly tight, then I guess it
6 would be part of that report. And with Y-12,
7 which is the only precedent we can look to, it
8 was an internal report so we're not quite sure
9 how that's going to play out, and that's really
10 up to the workgroup and the Board as to some of
11 this timing 'cause certainly that's --

12 **MR. GRIFFON:** I think our target realistically
13 is the February Denver meeting, you know, but
14 it -- but we want to walk --

15 **MR. FITZGERALD:** If that's the case, then --

16 **MR. GRIFFON:** -- back from that.

17 **MR. FITZGERALD:** Yeah, and if that's the case,
18 then --

19 **MR. GRIFFON:** Right.

20 **MR. FITZGERALD:** -- I think we would have a
21 report on safety concerns and the data
22 integrity examples ahead of time.

23 **MR. GRIFFON:** Right.

24 **MR. FITZGERALD:** So that was the only thing we
25 weren't sure about, but we certainly have

1 completed the review, we're just writing it all
2 down.

3 **MS. ROBERTSON-DEMERS:** Now with respect to the
4 73 pages of examples, you can kind of break
5 them into categories. Obviously we have many
6 that we concur with. We have some that I
7 didn't feel like the -- the concern that was
8 being conveyed was answered, and so when we
9 give you the evaluation report I'll put some
10 questions in there. Then we have others that I
11 felt needed clarification from the person
12 originating the affidavit. In other words, I
13 wasn't clear what they were getting at.

14 **MS. JESSEN:** Are you referring to, Kathy, just
15 the affidavits, or are you also referring to --

16 **MS. ROBERTSON-DEMERS:** That 73-page document --

17 **MS. JESSEN:** Okay --

18 **MS. ROBERTSON-DEMERS:** -- (unintelligible).

19 **MS. JESSEN:** -- because in there there were
20 concerns mentioned at the meeting in April.

21 **MS. ROBERTSON-DEMERS:** Right.

22 **MS. JESSEN:** Okay, so you're --

23 **MS. ROBERTSON-DEMERS:** Those are included.

24 **MS. JESSEN:** Okay.

25 **MR. FITZGERALD:** But you know --

1 **MS. ROBERTSON-DEMERS:** So that's --

2 **MR. GRIFFON:** Sim-- similar stuff.

3 **MS. ROBERTSON-DEMERS:** -- kind of where we
4 stand on that. There are some concerns that
5 were brought up that are just not relevant at
6 all to this process, like the exposure to
7 chemicals. And the individual making that
8 comment needs to be redirected in another
9 direction if they're truly concerned about
10 that. In general I believe we concur on the
11 lead apron issue, and there are a couple of
12 other general issues that are mentioned
13 repeatedly throughout that we have concurrence
14 on.

15 **MR. FITZGERALD:** Right.

16 **MR. GRIFFON:** Okay.

17 **MR. FITZGERALD:** So given the time frame, I
18 think we can certainly disposition this in
19 advance of any Board action, but certainly be
20 able to lay it out, and I think we do owe the
21 Board sort of a bottom line. I mean I think
22 there's specific issues, but in terms of a -- a
23 overall conclusion (unintelligible).

24 **MS. MUNN:** I would hope we would have that
25 early enough so that if there were any last-

1 minute threads that needed to be tucked in we'd
2 certainly be able to do that well in advance of
3 the February meeting --

4 **MR. GRIFFON:** Yeah.

5 **MS. MUNN:** -- (unintelligible). I really don't
6 want to --

7 **MR. GRIFFON:** Well, I think you're -- you're --

8 **MS. MUNN:** -- find us --

9 **MR. GRIFFON:** Yeah.

10 **MS. MUNN:** -- in a last-minute situation in
11 February, for crying out loud. I --

12 **MR. GRIFFON:** With big disagreements, right,
13 right.

14 **MS. MUNN:** -- (unintelligible).

15 **MR. FITZGERALD:** No, I think you're -- you're
16 hearing full agreement. In fact, given the
17 (unintelligible) of NIOSH's review and the fact
18 that we've gotten it now for a few weeks, I
19 think we're in a good position, having looked
20 at that, reviewed it and now simply writing it
21 up, I think it's, you know, going to be doable
22 probably in the next several weeks to actually
23 give a, you know, a product back and be able to
24 disposition it well before the meeting.

25 **MS. MUNN:** If we're -- if we're not going

1 (unintelligible) --

2 **MR. GRIFFON:** Hopefully the next couple of
3 weeks, yeah.

4 **MS. MUNN:** Yeah.

5 **MR. GRIFFON:** I would hope, yeah, yeah.

6 **MS. MUNN:** If we're not going away from here
7 with another heavy list of additional to-dos.

8 **MR. FITZGERALD:** I don't -- I don't think so.

9 **MR. GRIFFON:** No, I think this is on SC&A's
10 side at this point, no further action on
11 NIOSH's side.

12 **MR. FITZGERALD:** I -- I think it's really an
13 issue, you know, for a number of specific items
14 -- sort of glass half-full/glass half-empty.
15 It's subjective judgment. There's not any
16 corroborating evidence, per se, but what we're
17 saying is that you can view it two different
18 ways. Now I don't know if that changes -- I
19 don't think it changes the bottom line
20 conclusion, but I think it's something we want
21 to offer back, you know, for the record. So I
22 think that -- that process can happen in the
23 next few weeks and -- and the Board will still
24 be in a good position by the end of this
25 calendar year, let alone in February, to -- to

1 have that settled and be able to move forward
2 on it.

3 **MS. MUNN:** So we'll -- we'll be in good shape
4 as far as our contractor's concerned. Are we
5 going to be in good shape as far as the
6 agency's concerned?

7 **DR. ULSH:** We'll just have to wait and see.

8 **MR. GRIFFON:** That -- that's why I say, you
9 know, you get a draft report now, hopefully
10 within the next two weeks, I think we can --

11 **MR. FITZGERALD:** Yeah, My -- my judgment cert--

12 **MR. GRIFFON:** -- try to commit to getting them

13 --

14 **MR. FITZGERALD:** But my judgment at this point

15 --

16 **MR. GRIFFON:** -- something so there's time,
17 yeah.

18 **MR. FITZGERALD:** -- if we had something that
19 was that significant, we would be raising it at
20 the table today. Okay? I think there -- like
21 some of these other issues -- with the logbooks
22 there are specific issues within the report
23 that we have questions on or concerns about the
24 interpretation, but I don't think we're --
25 we're raising any showstoppers today, based on

1 what we've seen so far. So -- and we've seen I
2 think everything that you've provided, so...

3 **DR. WADE:** Good.

4 **MATRIX**

5 **MR. GRIFFON:** All right. Then -- then I'm just
6 coming to the matrix. The other thing that it
7 strikes me that -- it's like groundhog day.
8 The other thing that I'm afraid is going to
9 come up is the coworker -- the coworker --

10 **MR. FITZGERALD:** OTIB-38?

11 **MR. GRIFFON:** -- yeah, OTIB-38 and 58 to maybe
12 a lesser extent.

13 **MS. MUNN:** Yeah. That's the question I was
14 going to --

15 **MR. GRIFFON:** Yeah, I know, and we -- we talked
16 about this this morning, if we're going to --

17 **MS. MUNN:** And what about TIB-38?

18 **DR. ULSH:** Just to perhaps bring you up to
19 speed with where we are with that, Joyce sent
20 over -- well, SC&A sent over everything Joyce
21 authored, some concerns about OTIB-38. Dave
22 Allen responded to some of those concerns, but
23 some of them Dave felt like were --

24 **MR. FITZGERALD:** Application (unintelligible).

25 **DR. ULSH:** -- application issues --

1 **MR. FITZGERALD:** Downstream issues, right.

2 **DR. ULSH:** -- and I don't know, before this
3 meeting I was thinking that that might be an
4 appropriate topic for one of these issue-
5 specific conference calls, but it -- it's taken
6 on more significance during the day and I don't
7 know if that's appropriate or not. I leave
8 that to the working group to decide. I -- it
9 seems like it's a pretty important issue.

10 **MS. MUNN:** Well, yeah, I mean it's --

11 **MR. GRIFFON:** Well, I mean I also -- I also
12 would think that -- that there could be some
13 discussions and the people on -- on a technical
14 call, if we can call those technical calls --
15 in between the meetings. Anyone at any time
16 can say, you know, listen, we're getting into
17 some territory where I think the full workgroup
18 should be involved and play it out like that.
19 I would think --

20 **MR. FITZGERALD:** And there's some overlap --

21 **MR. GRIFFON:** Yeah.

22 **MR. FITZGERALD:** -- because one of the three
23 issues that actually she and Dave have come to
24 agreement --

25 **MR. GRIFFON:** Because that's what I mean, I

1 don't want to slow progress if we can get Dave
2 and Joyce on the phone and --

3 **MR. FITZGERALD:** Right.

4 **MR. GRIFFON:** -- maybe Jim and Brant, yourself,
5 and work out some of the technical details,
6 that might save going through all that at the
7 workgroup level. On the other hand -- on the
8 other hand, we want a -- you know, fairly --

9 **MR. FITZGERALD:** Well, it's -- it's --

10 **MR. GRIFFON:** -- full -- full report back to
11 the workgroup.

12 **MR. FITZGERALD:** -- unclear to us because
13 before when it was looking like it was specific
14 to OTIB-38 --

15 **MR. GRIFFON:** Yeah.

16 **MR. FITZGERALD:** -- then between Joyce and
17 Dave, but I think both agree that it's really
18 downstream now and it gets into the application
19 --

20 **MR. GRIFFON:** Yeah, right.

21 **MR. FITZGERALD:** -- it sounds like a larger
22 group of people and some questions that we've
23 already touched on today.

24 **MR. GRIFFON:** Right.

25 **MR. FITZGERALD:** So it is kind of intertwined

1 in the overall larger issue now. So I don't --
2 I don't know how to proceed and who should be
3 involved, but that's something I think we need
4 to --

5 **DR. ULSH:** Well, if the working group's
6 comfortable with -- Wanda?

7 **MS. MUNN:** Well, and -- and have we -- did I
8 miss the answer to the question, are we going
9 to extend OTIB-38 --

10 **DR. ULSH:** I don't know if we necessarily --

11 **MS. MUNN:** -- into the --

12 **DR. ULSH:** -- answered it.

13 **MR. GRIFFON:** No.

14 **MS. MUNN:** Did we ever answer that or was the
15 question --

16 **MR. GRIFFON:** I don't think we did.

17 **MS. MUNN:** -- just posed and left hanging in
18 the air?

19 **MR. FITZGERALD:** That's not --

20 **MS. MUNN:** I didn't hear the answer. It's in
21 the air.

22 **MR. GRIFFON:** It didn't get answered. I mean
23 it -- the way we handled D and D at the mean--
24 I guess I was looking for sort of an interim
25 measure that would give us confidence that you

1 could at least bound the D and D workers, and
2 that was by asking for the termination bioassay
3 information. So -- 'cause I think, you know,
4 again, trying to -- to save some time --

5 **DR. ULSH:** Well, how does --

6 **MR. GRIFFON:** -- you know, instead of asking
7 for ever-- for -- for -- okay, you've got the D
8 and D period, I think your bio-- OTIB-38 ends
9 in '88 or '89, whatever --

10 **DR. ULSH:** Right around there.

11 **MR. GRIFFON:** -- so you know, I don't think we
12 -- we want to say, you know, well, give us '90
13 through 2005 or '06 or whatever and show us how
14 this coworker model's going to be used for --
15 or -- or if it's going to be used. I don't ev-
16 - I haven't even heard a definitive -- that the
17 D and D workers are going to require the use of
18 coworker models.

19 **MS. MUNN:** I haven't either.

20 **DR. ULSH:** Well, I have a proposal.

21 **MR. GRIFFON:** So I was -- I was saying -- go
22 ahead.

23 **DR. ULSH:** How about if we -- if we take the
24 interim measure that you've --

25 **MR. GRIFFON:** Yeah.

1 **DR. ULSH:** -- that we've agreed to here, look
2 at the -- the fecal -- early fecal data, we put
3 that out in an e-mail to the working group and
4 to SC&A, and at that time I think NIOSH at
5 least will be in a better position to offer an
6 opinion on whether or not we think OTIB-38
7 should be --

8 **MR. GRIFFON:** That was my feeling. That was --

9 **DR. ULSH:** -- extended, and put that out there
10 for comment by the working group and by SC&A --

11 **MR. GRIFFON:** Right.

12 **MR. FITZGERALD:** But the early fecal -- I guess
13 lung count was the termination --

14 **DR. NETON:** See, these termination bioassays
15 are important, though, because --

16 **MR. GRIFFON:** Yeah.

17 **DR. NETON:** -- the issue was raised about
18 people leaving site without leaving a bioassay,
19 so --

20 **MR. GRIFFON:** Right.

21 **MS. MUNN:** Yeah.

22 **DR. NETON:** -- if we had a fair population of
23 termination samples that we could rely on to --

24 **MR. GRIFFON:** And it's representative, then --
25 then we --

1 **DR. NETON:** -- as representative, then we can
2 say that we -- we've got some sense for what --
3 what the end game's going to be on that, so...

4 **DR. ULSH:** Does that sound --

5 **MR. GRIFFON:** And we've got at least that
6 safety net that we were saying -- we have a way
7 to -- and it -- and --

8 **MR. RICH:** But you're going to have to extend
9 38 anyway, aren't you?

10 **DR. NETON:** Yeah, yeah, but -- but Mark's
11 saying that they're not necessarily requiring
12 us to extend 38 to a definitive model if we can
13 show that we have the data to do that.

14 **MR. FITZGERALD:** The data's sufficient.

15 **MS. MUNN:** Yeah, yeah.

16 **DR. NETON:** I mean that's the point.

17 **MR. RICH:** You got a little time on
18 (unintelligible) --

19 **DR. ULSH:** Okay, so we'll check back in with
20 SC&A and the working group once we have that
21 piece.

22 **MR. GRIFFON:** But then -- I mean I -- I don't
23 want to throw --

24 **MS. MUNN:** (Unintelligible) that kind of bottom
25 line is what you have represented here, or do

1 we have to go chasing that (unintelligible) --
2 **DR. NETON:** Yeah, we need to figure out --
3 **MS. MUNN:** -- missing 40?
4 **DR. NETON:** -- what we have --
5 **MS. MUNN:** Yeah.
6 **DR. NETON:** -- with the terminations.
7 **MR. GRIFFON:** Yeah, and -- and not -- not to
8 throw a fly in the ointment, but just some --
9 some thought on -- 'cause we are cycling back
10 to the coworker model. I mean if in fact
11 there's -- there's a broader use of these
12 coworker models, which apparently it's not too
13 -- I'm not saying it ever was, but you know, as
14 you've found cases where you need it, you've --
15 you've finalized your -- your coworker models
16 and you're starting to use them now, and that's
17 fine. But our answer's along the lines of sort
18 of validating those models all along. We've
19 gone down this path of well, yeah, we found --
20 we found problems with HIS-20, we admit these.
21 We found problems with CEDR -- or -- or we
22 found differences between CEDR and HIS-20, we
23 admit these. What -- you know, I'm not sure --
24 and maybe people disagree with me, but I'm not
25 sure that I'm -- that gives me a lot of

1 confidence that CEDR and HIS-20 give me the
2 same intake result when both have been shown to
3 be kind of -- you know, like --

4 **DR. ULSH:** Well --

5 **MR. GRIFFON:** -- what's going on with these
6 databases, you know, so --

7 **DR. ULSH:** -- I do need to clarif--

8 **MR. GRIFFON:** -- so the -- you know, that goes
9 back to the question of is it a valid cowor--
10 you know, is the data you're using for the
11 coworker model valid.

12 **DR. ULSH:** Well, I do need to clarify a little
13 bit there, Mark.

14 **MR. GRIFFON:** Yeah.

15 **DR. ULSH:** We said in the evaluation report
16 that if you're looking for lung count model --
17 I mean if you're looking for lung data, I think
18 -- I think we said this in the evaluation
19 report -- to look at the rad file.

20 **MR. GRIFFON:** Yeah.

21 **DR. ULSH:** We also said that there was an issue
22 about some people who were not included in HIS-
23 20. We then found, through later -- you know,
24 comparisons with CEDR and what-not and you were
25 concerned about the greater number of records

1 in CEDR, so we did find a difference in terms
2 of the number of records in HIS-20 compared to
3 CEDR, but that's entirely consistent with what
4 we know about the limitations of HIS-20.

5 Now if you look at the intake values that you
6 would calculate from either one, we presented
7 an analysis that shows that the two are in
8 agreement, essentially, HIS-20 and CEDR.

9 **DR. NETON:** Well, really what it comes down to
10 is the 95th percentile and the 50th percentile.

11 **MR. GRIFFON:** It drives it, yeah.

12 **DR. NETON:** That drives it. I mean there's no
13 -- the distribution is irrele-- I mean not
14 irrelevant, but what meth--

15 **DR. ULSH:** So --

16 **DR. NETON:** -- you're going to use one of two
17 points out of that distribution. If those two
18 points are within, you know, of saying very
19 close --

20 **DR. ULSH:** And I think our analysis showed that
21 it was.

22 **DR. NETON:** -- so then you're not going to get
23 a different number, then bottom line then is --
24 it appears that maybe HIS-20 was not
25 preferentially censored one direction or the

1 other -- you know what I'm saying? So we have
2 to show that.

3 **MR. GRIFFON:** Yeah, I know.

4 **DR. ULSH:** We presented an analysis that showed
5 that. Now I don't know, maybe you want to come
6 back and say that's not sufficient, but --

7 **MR. GRIFFON:** Well, we -- we've always -- I
8 don't disagree with what you're saying, Brant.
9 It's just that each time these conclusions have
10 been couched with the -- but we don't even use
11 these models. So you know, let's not get
12 overly concerned or dig into this too much
13 because it's not even being used, it's two out
14 of 1,100. So -- so we -- you know, I don't
15 know -- I'm not saying there's any there there,
16 but I'm saying when I see, you know, two vast--
17 you know, we're not -- we're not talking slight
18 differences in CEDR. We're talking -- when you
19 -- CEDR versus HIS-20, when the number of
20 individuals included are all over the place,
21 you know, and -- and -- and I think in '72 it
22 switches, but there's a vast more number in one
23 than the other all of a sudden, and I don't
24 have that chart yet. You have that chart -- so
25 -- in my -- I'm not -- I don't think I'm

1 exaggerating when I say that there's big
2 differences in numbers in these databases, and
3 maybe the driver is -- you know, I think the
4 higher numbers obviously drive this thing, but
5 I think we might want to do -- I'm just saying
6 that we might need to revisit that a little bit
7 because now it seems like --

8 **DR. NETON:** I don't disagree --

9 **MR. GRIFFON:** -- we're back to coworker models.

10 **DR. NETON:** Yeah, it didn't -- it didn't get a
11 thorough vetting, it sounds like, at least in
12 your mind, and so -- you know.

13 **MR. GRIFFON:** And -- and I'm not even saying
14 that's not -- maybe the reports are there by
15 NIOSH already, you know, that we have to maybe
16 look back at that analysis that they've done
17 already and just -- but I -- I think it's on
18 the table, maybe in a different light now
19 because clearly it seems like it may be -- it
20 already or may be used to a larger extent for
21 more of the workers than I was ever -- ever
22 under the impression, you know, that it's -- so
23 -- Wanda.

24 **MS. MUNN:** But they're close -- the agreement
25 is close.

1 **MR. GRIFFON:** But it -- look at the data,
2 Wanda, they -- they --

3 **MS. MUNN:** The agreement is close. It's
4 claimant-friendly.

5 **MR. GRIFFON:** The agreement is close.

6 **MS. MUNN:** Yeah.

7 **MR. GRIFFON:** And you've looked at the data.

8 **MS. MUNN:** No, I have not --

9 **MR. GRIFFON:** That's all I'm asking. Maybe the
10 agreement's close.

11 **MS. MUNN:** I haven't looked -- I haven't looked
12 at the data. I'm relying on the reports, that
13 I haven't heard anybody challenge, that -- that
14 they are; that -- that you come out with the
15 same -- if you use their data, you come out
16 with the same -- very close to the same
17 answers. And if that's true and if it is -- if
18 -- if all of our processes are claimant-
19 friendly, which they are, then even if we come
20 around to the fact that we are going to use
21 them, then why is it not okay? I guess I'm --
22 I don't understand why it's not okay. I'm --
23 am I missing something?

24 **MR. GRIFFON:** I have a little bit of problem
25 responding to reports that I -- you know, you -

1 - you remember the history. You've been here
2 with me.

3 **MS. MUNN:** Oh, yeah. I think I was here.

4 **MR. GRIFFON:** I mean I -- I think we -- we've
5 always -- you know, we get these reports -- I
6 mean let's look at the -- the analysis of the
7 individual radiation files versus the database.
8 I mean there was a large -- the Craig Little
9 report -- high degree of confidence expressed
10 that reviewing individual radiation files we
11 got a great match with HIS-20, so his -- you
12 know, HIS-20 looks good. I think we've come a
13 distance from there 'cause now I'm seeing a --
14 a large step back from HIS-20 as far as any
15 confidence in that data -- I mean large holes
16 in it. I'm wrong?

17 **DR. ULSH:** It might be a matter of semantics.

18 **MR. GRIFFON:** Yeah.

19 **DR. ULSH:** Let me --

20 **MR. GRIFFON:** Yeah.

21 **DR. ULSH:** -- state what -- what we know about
22 HIS-20, and we've talked about this today. We
23 know that there are some people who are not in
24 HIS-20, and we've talked about who those people
25 are, if they terminated prior to '72. Some of

1 them were later added back in. That is true,
2 and that was in our ER.

3 We've also talked about the in vivo results,
4 the lung counts. You need to go to the rad
5 file for that. We know that. If that, to you,
6 constitutes large holes and problems, that's
7 what we have, but --

8 **MR. GRIFFON:** Can you -- I don't -- I -- I
9 can't find my electronic version, the report
10 you just had out with the table of CEDR/HIS-20?

11 **DR. ULSH:** Yeah.

12 **MR. GRIFFON:** In the last paragraph or the next
13 to last paragraph it says something to the
14 effect that if we were relying on coworker
15 models, this could be a problem.

16 **DR. ULSH:** Okay. You want me to just read it
17 to you?

18 **MR. GRIFFON:** Yeah.

19 **DR. ULSH:** Okay. (Reading) This known and
20 acknowledged limitation of the HIS-20 database
21 is consistent with the great-- now we're
22 talking about the people who are not in HIS-20
23 -- is consistent with the greater number of
24 records and monitored individuals observed in
25 the CEDR database throughout the '50s, '60s and

1 into the '70s. As our previous analysis
2 demonstrated, this issue did not substantively
3 affect the values of coworker distribution
4 parameters. The generation of coworker
5 distributions is the primary use made of the
6 HIS-20 and CEDR databases. This absence of
7 workers who terminated prior to '77 -- not '72
8 -- from HIS-20 would not be expected to bias
9 the parameter values, and indeed the comparison
10 of HIS-20 to CEDR showed no evidence of a bias.
11 The absence of these workers' data could
12 present a problem for dose reconstruction of
13 the affected individuals if dose reconstruction
14 relied on the data in HIS-20 -- if the dose
15 reconstruction relied on the data in HIS-20.
16 However, this is not the case. The primary
17 source of an individual's dosimetry data is the
18 individual -- individual's radiation records
19 file.

20 **MR. GRIFFON:** Okay. So -- but the data -- but
21 the dose reconstruction now does rely in the
22 data in HIS-20 if you're using coworker models.

23 **DR. ULSH:** If we're using coworker models,
24 yeah, that's --

25 **MR. GRIFFON:** That's all -- that's all I'm

1 saying is that that -- that seems like -- and
2 maybe it's not stronger to you, but it seemed a
3 little stronger to me that, you know -- again,
4 we're -- the point there was -- to me, anyway,
5 the way I interpreted that was, you know, it
6 may be a problem if we're relying on HIS-20,
7 but again -- Mark, you know, knock you over the
8 head -- we're -- we're -- got the individual
9 rad files we're going to use and we're relying
10 on those, so --

11 **DR. ULSH:** It certainly wasn't my intent to say
12 Mark, knock you over the head. I apologize if
13 you (unintelligible) --

14 **MR. GRIFFON:** That was subliminal, I was
15 putting the subliminal reaction in there.

16 **DR. ULSH:** I would never say that, Mark.

17 **MR. GRIFFON:** It's getting late.

18 **DR. WADE:** Yeah, it's getting late.

19 **MR. GRIFFON:** But anyway, that -- that -- I
20 mean I -- the bottom line I think is that we
21 might want to revisit those analyses of the
22 coworker models, especially if this is going to
23 re--

24 **DR. NETON:** Well, I think you have to look at
25 it --

1 **MR. GRIFFON:** -- return to that end, yeah.

2 **DR. NETON:** -- in light of what the analysis
3 that SC&A's going to do with the missing --
4 missing or gaps in the data and what that
5 really means.

6 **MR. GRIFFON:** Right.

7 **DR. NETON:** I mean we're going to try to look
8 at cases where there would have been high
9 exposures, significant exposures among
10 production workers and -- and if it shows that
11 there are gaps in those areas, then I would
12 totally agree with this. But if it comes out
13 to be --

14 **MR. GRIFFON:** Right.

15 **DR. NETON:** -- administrative workers in
16 general and we can deal with those, then I
17 don't think it becomes a challenge.

18 **MR. GRIFFON:** Yeah, okay. I agree -- I agree
19 with that yeah.

20 **DR. WADE:** We have a path for that.

21 **MR. GRIFFON:** Right. So I've just closed the
22 matrix so I'm not going to walk through -- but
23 what I will do is update -- based on today's
24 discussion I'll turn this matrix around a
25 little quicker 'cause I don't want -- I think

1 we did have -- I -- I should have been a little
2 more judicious about updating the matrix so we
3 didn't have any confusion on what actions were
4 going on in between meetings.

5 **MR. CHEW:** Mark, I -- I would like to have a
6 clarifying point with Joe. Joe, I'm thinking
7 about -- just one thing I want to make sure
8 we're -- we're -- discussion. Let's go back to
9 those 110 people we mentioned in the AI report
10 -- okay? -- for -- that was lung counted. Or
11 you -- are you -- is your expectation that we
12 will have -- able to find results of those lung
13 counts for those 110? Is that what I'm
14 hearing?

15 **MR. FITZGERALD:** No, I think your answer is
16 already evident that no, you haven't been able
17 to find those 110.

18 **MR. CHEW:** Right.

19 **MR. FITZGERALD:** What we're saying is that
20 well, given the original -- the origin of that
21 particular issue, we will simply be able to use
22 the access to the claimant files and cross-walk
23 --

24 **MR. CHEW:** Okay.

25 **MR. FITZGERALD:** -- what is there in terms of

1 identified people. That's going to be --
2 that's going to be part and parcel to the
3 overall thing we're doing with the validation.
4 We're not going to make it a separate -- keep
5 it as a separate stream of inquiry.

6 **MR. CHEW:** Yes, I think the report that you're
7 going to -- you just received said Dr. Baseline
8 -- Bistline was involved with that --

9 **MR. FITZGERALD:** Right.

10 **MR. CHEW:** -- and he recalled that there were
11 15-minute screening counts at that particular
12 time.

13 **MR. FITZGERALD:** Yeah, I think the difficulty
14 is that, because it's based on interviews and
15 everything, as you're finding out, it's just --
16 to come up with those 110, as we thought we
17 might be able to do, it just isn't going to be
18 feasible, so --

19 **MR. CHEW:** Okay, that's good. I was going to
20 make sure that was --

21 **MR. FITZGERALD:** Right.

22 **MR. CHEW:** Very good. We're not going to chase
23 something again.

24 **DR. WADE:** No, claim--

25 **MR. GRIFFON:** I did want to -- just one more

1 thing, Lew. I just want to go over -- I told
2 Larry that I would do this with regard to the
3 first item, as far as actions on that. I think
4 we agree that SC&A is going to draft a -- a
5 sampling plan or strategy, and then work
6 iteratively with NIOSH on -- on the path
7 forward there. He's -- he asked that I stress
8 this point, that any product -- we said it
9 earlier, but any -- any product that SC&A has,
10 before it's released publicly, will go through
11 Emily for a review on Privacy Act concerns
12 before --

13 **MR. FITZGERALD:** Is that presumably before it
14 goes to the workgroup?

15 **MR. GRIFFON:** Before it's released publicly.

16 **MR. FITZGERALD:** I was wondering what that
17 threshold is.

18 **MR. GRIFFON:** Yeah, I wish Larry were still
19 here for a --

20 **DR. NETON:** I think it's before the workgroup.

21 **MR. FITZGERALD:** Before the workgroup would
22 actually get a product.

23 **DR. WADE:** Because our workgroup products we've
24 made public, so --

25 **MR. GRIFFON:** Yeah, we've made public, yeah,

1 so...

2 **MS. MINKS:** This is -- this is -- this is Erin
3 Minks again from Senator Salazar's office, just
4 in line with what Mark's reiterating from this
5 morning, we just want to be sure that -- that --
6 -- obviously there's this additional layer added
7 with the Privacy Act concerns, which I'm --
8 we're surprised it's coming up now and not
9 months ago when there was efforts previously,
10 but regardless of that, we just want to -- the
11 Senator's concerned that -- that there -- that
12 this is -- not be a perception of obstruction
13 of access to this information again, and so
14 we're just reiterating that again.

15 **DR. WADE:** Thank you.

16 **MR. GRIFFON:** Yeah, the other thing I -- I just
17 -- along those lines -- thanks for those
18 comments. Along those lines, I did talk to
19 Larry during the break and he -- he told me
20 that we can, for this process, open up access
21 to the -- all Rocky Flats claims, not just
22 adjudicated claims, with the clear
23 understanding from this workgroup that the task
24 at hand is completeness of the DOE records, not
25 to go beyond that. And -- and all -- all he

1 would ask is that if -- and I talked to John
2 about this before he left. If John can just
3 let -- let us know, let NIOSH know who needs
4 access from the SC&A team, he'll make that
5 happen.

6 He also said that as far as the Advisory Board
7 goes, they're going to reinstate access across
8 the board so we don't have to request
9 individuals, so to that extent I think we --
10 we've moved forward on that and --

11 **DR. WADE:** And the only issue --

12 **MR. GRIFFON:** Yeah.

13 **DR. WADE:** -- that Mark is talking about now is
14 the -- we're now into an area outside of --

15 **MR. GRIFFON:** Yeah.

16 **DR. WADE:** -- outside of the Task IV reviews,
17 that we are starting to produce reports that
18 contain information that's private -- Privacy
19 Act sensitive, and we just need to be sure
20 that's looked at by counsel before it's
21 released. That's all we're doing here, nothing
22 more.

23 **MR. GRIFFON:** And I -- I think we're in
24 agreement with that, so -- okay.

25 **DR. MAKHIJANI:** Well, can I raise a question

1 about that? One -- one idea that might kind of
2 simplify the process might be for us to produce
3 reports -- I mean obviously it would still have
4 to be reviewed in some way that -- that really
5 have almost no identifying information, but can
6 -- but the underlying -- underlying report -- I
7 guess everything -- since everything at the
8 workgroup has to be public --

9 **DR. WADE:** But I --

10 **DR. MAKHIJANI:** I'll withdraw (unintelligible).

11 **DR. WADE:** I would have had discussions with
12 John today, with counsel, sort of describing
13 the ground rules for him. I'll do that by
14 phone tomorrow. This is not a -- this will not
15 be a major issue.

16 **MR. GRIFFON:** I think that's it if -- anything
17 else -- Joe, anything else from your side or --

18 **MR. FITZGERALD:** No, no.

19 **MR. GRIFFON:** -- pressing? I mean it is 5:30,
20 so --

21 **DR. WADE:** Give me five minutes. I mean we are
22 -- we are looking at --

23 **MR. GRIFFON:** Hold on a second.

24 **DR. WADE:** -- a February Board vote on the
25 Rocky Flats SEC petition. At least that's the

1 stated goal, so we need to keep in mind that
2 the space between that date and now is
3 narrowing. We have a Board meeting in
4 February. We have a Board call in January.
5 You need to think about these work products and
6 getting them to the workgroup so there's time
7 to process. If there -- if there's
8 intermediate Board action required, we still
9 have opportunities, but we need --

10 **MR. GRIFFON:** Clearly the --

11 **DR. WADE:** -- to start using those
12 opportunities.

13 **MR. GRIFFON:** Clearly the biggest time-
14 consuming work item is the completeness issue,
15 so the sooner we can start that -- plan it all
16 and process and get that -- that move--
17 movement on that front, I think the better.

18 **DR. WADE:** And if we need guidance from the
19 Board, we've got them in February and we've got
20 them the middle of January.

21 **MR. GRIFFON:** And we'll -- I -- I might even
22 try to -- to step back and through e-mail maybe
23 we can work on this is to set some time goals
24 for products so that we -- I mean certainly
25 NIOSH needs time to respond and the-- you know,

1 and then I think SC&A wants to give us a final
2 review of the evaluation report, which is still
3 out there, obviously. And I think you --
4 you've been drafting as -- as we've gone along,
5 Joe, I think --

6 **MR. FITZGERALD:** Yeah, yeah.

7 **MR. GRIFFON:** -- yeah, so it's not --

8 **MR. FITZGERALD:** It's pretty far along, but
9 I've --

10 **MR. GRIFFON:** -- but again, we don't want to
11 receive that --

12 **MR. FITZGERALD:** Right.

13 **MR. GRIFFON:** -- you know, days before the --
14 you know.

15 **MR. FITZGERALD:** No, I think we agree. I think
16 we want to --

17 **MR. GRIFFON:** So we want to try to step back
18 and set some time lines --

19 **MR. FITZGERALD:** We need to back-engineer the
20 schedule so there's plenty of time for
21 (unintelligible).

22 **MR. GRIFFON:** Right.

23 **MS. MUNN:** Would it not be wise --

24 **MR. GRIFFON:** And we really want to vote in
25 February, you know, on this -- yeah.

1 **MS. MUNN:** Now -- yeah. Would it not be wise
2 for this working group to meet in January to
3 make sure that we are in fact ready to do that
4 in February?

5 **MR. GRIFFON:** Yeah, yeah --

6 **DR. WADE:** I can't imagine --

7 **MR. GRIFFON:** -- I just don't know --

8 **MS. MUNN:** Right? I think that would be very
9 wise.

10 **MR. GRIFFON:** I didn't know if we were ready to
11 -- to -- I agree, Wanda. I just don't know if
12 we're ready to set a date or wait to see how
13 work products are evolving. What's the
14 pleasure of folks -- you want to set a
15 tentative date so we have a calendar date?

16 **MS. MUNN:** I would certainly like to do that --

17 **MR. GRIFFON:** All right.

18 **MS. MUNN:** -- it would help me a great deal.
19 And since Joe has told me that -- that one of
20 our biggies is going to be wrapped up before
21 the end of the year, then we have -- I -- I
22 hope that we're not pushing ourselves too much
23 to say that if -- if we're going to meet in
24 Denver in the first week of February, then
25 wouldn't it be wise for us to plan something

1 like the second week in January for this group
2 to meet to make sure that we had at least two
3 weeks?

4 **MR. GRIFFON:** We have a Board call scheduled on
5 the 11th. Right?

6 **DR. WADE:** The 11th is a Board call.

7 **MR. GRIFFON:** So we could do it shortly before
8 that. I think it would make sense.

9 **DR. WADE:** Just in case you had something you
10 needed --

11 **MR. GRIFFON:** Yeah.

12 **DR. WADE:** -- the Board's guidance on.

13 **MS. MUNN:** I would think that would be wise.

14 **MR. GRIFFON:** The 8th or 9th? The 8th or 9th -
15 - 9th would be better for me, Tuesday the 9th.

16 **MS. MUNN:** Tuesday the 9th would work for me.
17 Tuesday the 9th at (unintelligible) --

18 **DR. WADE:** Mike, are you still on the line?

19 **MR. GRIFFON:** Is that a hol-- there's no
20 holidays there in January --

21 **MS. MUNN:** No, no, New Year's Day and Martin
22 Luther King is the next --

23 **MR. GRIFFON:** Okay, Martin Luther King, I knew
24 it was around there.

25 **DR. WADE:** It's the 15th. Okay, so the 9th of

1 January --

2 **MR. GRIFFON:** Back here in Cincinnati, I would
3 assume.

4 **DR. WADE:** -- Cincinnati, this very table or
5 one like it.

6 **MR. GRIFFON:** And I -- I think -- I think 10:00
7 a.m. still works. I know that John and
8 sometimes I travel in the morning, so hopefully
9 item one won't take as long at the next
10 meeting.

11 **MS. MUNN:** Maybe not.

12 **MR. GRIFFON:** Right, right, right, right. But
13 -- okay, 9th it is.

14 **DR. WADE:** 10:00 a.m.

15 **MR. GRIFFON:** Any other closing items, Lew?

16 **DR. WADE:** No, just to thank everyone for their
17 efforts certainly.

18 **MR. GRIFFON:** All right. I think we're
19 adjourned. Thanks.

20 (Whereupon, the meeting concluded at 5:30 p.m.)

21

22

23

24

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 November 6, 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 2nd day of January, 2007.

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