

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

ABRWH WORKING GROUP MEETING
ROCKY FLATS

The verbatim transcript of the Working Group Meeting of the Advisory Board on Radiation and Worker Health held at the Marriott Cincinnati Airport, Hebron, Kentucky, on May 30, 2006.

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TRANSCRIPT LEGEND

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

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P R O C E E D I N G S

(10:15 a.m.)

WELCOME AND OPENING COMMENTS

1 **DR. WADE:** Again, welcome all. This is Lew Wade.

2 This is a meeting of the working group of the
3 Advisory Board. This is the working group that
4 looks at a variety of issues including
5 individual dose reconstruction procedures
6 review and site profile review. Because this
7 group has worked so diligently on the Rocky
8 Flats site profile the full Board asked them to
9 take on the task of pursuing the remaining
10 issues that relate to Rocky Flats as it relates
11 to the SEC petition and there have been a
12 number of meetings trying to work those issues
13 down to the bare minimum so that this working
14 group can bring back findings and possibly a
15 recommendation to the Advisory Board. That's
16 what we're here to do today. Around the table
17 we're going to introduce ourselves but before
18 we do general introductions I would ask if any
19 members of the Board are on the telephone, if
20 you would identify yourselves.

21 **MR. GIBSON:** Mike Gibson is here on the Board.

1 No conflicts with Rocky.

2 **DR. WADE:** Okay. No other Board members? We
3 have three Board members. We have Mark, Mike
4 and Wanda. We don't have a quorum so we can
5 certainly do our working group business. Let's
6 start by going around the table here and simply
7 identifying ourselves. And then we can come
8 back and do our conflict of interest discussion
9 briefly once we've completed the general
10 introductions. Again this is Lew Wade. I work
11 for NIOSH and support the Advisory Committee.

12 **MR. FITZGERALD:** And this is Joe Fitzgerald.
13 I'm with the SC&A audit team.

14 **MR. GRIFFON:** Mark Griffon with the Advisory
15 Board.

16 **DR. BISTLINE:** Bob Bistline with SC&A Advisory.
17 Used to be at Rocky Flats for 39 years.

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

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

20 **DR. NETON:** Jim Neton, NIOSH.

21 **MS. MUNN:** Wanda Munn, Advisory Board.

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

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

24 **DR. ULSH:** Brant Ulsh with NIOSH.

25 **DR. WADE:** Now, let's start and identify other

1 members of the SC&A team that might be on the
2 telephone.

3 **DR. LIPSZTEIN:** Joyce Lipsztein.

4 **DR. WADE:** Welcome, Joyce.

5 **DR. LIPSZTEIN:** SC&A.

6 **DR. BEHLING:** Hans Behling, SC&A.

7 **DR. WADE:** Good morning, Hans.

8 **DR. BEHLING:** Good morning.

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

10 **DR. WADE:** Good morning, Ron.

11 **MR. BUCHANAN:** Good morning.

12 **DR. WADE:** Anybody else from SC&A?

13 (No response)

14 **DR. WADE:** How about NIOSH OM?

15 **MR. RUTHERFORD:** LaVon Rutherford, NIOSH.

16 **DR. WADE:** Good morning.

17 **MR. FALK:** This is Roger Falk and I'm with
18 ORAU.

19 **DR. WADE:** Okay.

20 **MR. LANGSTED:** This is Jim Langsted. I'm with
21 ORAU.

22 **MR. ROBINSON:** Al Robinson. I'm with ORAU.

23 **DR. WADE:** Anybody else?

24 **UNIDENTIFIED:** (Inaudible)

25 **DR. WADE:** All right. Any other federal

1 employees on the line?

2 (No response)

3 **DR. WADE:** Anyone who --

4 **MS. WARDER:** Amy -- Amy Warder with the office
5 of Congressman Beauprez.

6 **DR. WADE:** Good morning.

7 **MS. WARDER:** Good morning.

8 **DR. WADE:** Anyone else on the line who would
9 like to identify themselves? It's not
10 required.

11 (No response)

12 **DR. WADE:** Okay. Then let's spend a moment
13 just having the leaders of the -- the
14 appropriate organizations identify if any of
15 their members are conflicted. John Mauro for
16 SC&A?

17 **DR. MAURO:** No one in SC&A is conflicted on
18 Rocky Flats.

19 **DR. WADE:** Just --

20 **DR. MAURO:** That includes myself, John Mauro,
21 Joe Fitzgerald, Arjun Makhijani, Bob -- oh,
22 excuse -- forgive me, please, Bob. This man
23 has recently joined SC&A as part of our team.
24 Thank you very much, Bob. Bob, of course, is
25 conflicted for his many years working for

1 Rocky.

2 **DR. WADE:** I understand.

3 **DR. MAURO:** My apologies.

4 **DR. WADE:** Not a problem. And we're pleased to
5 have Bob here. I was chatting with Bob
6 earlier. I mean what this Board and this
7 working group is about is getting it right and
8 we welcome people who have knowledge. We
9 certainly think it's important that conflicts
10 be identified but that those voices not be
11 silenced. So Bob, welcome. We're pleased to
12 have you here. Brant, your team?

13 **DR. ULSH:** Gene Potter, are you on the line?
14 (No response)

15 **DR. ULSH:** Okay, he's --

16 **MR. POTTER:** Yes, yes. I'm -- Gene Potter's on
17 the line.

18 **DR. ULSH:** Okay. We've got -- from the ORAU
19 team we've got Gene Potter, Roger Falk and Jim
20 Langsted, all of whom have conflicts at Rocky
21 Flats. They -- Similar to Bob they worked
22 there for a number of years. No one from the
23 NIOSH team has any conflicts.

24 **DR. WADE:** And I assume the Board members have
25 no conflicts on Rocky Flats?

1 **MS. MUNN:** None here.

2 **DR. WADE:** Okay. Mark?

3 **MR. GRIFFON:** No.

4 **DR. WADE:** It's all yours.

5 **SUPER S ISSUE**

6 **MR. GRIFFON:** All right. Okay. I think we --
7 we sent around a matrix, the latest matrix from
8 the Rocky Flats site profile review, and it's
9 dated April 22nd, 2006 for those people on the
10 phone call. Really, and it tracks pretty well
11 with the -- I've come up with like five major
12 topics that I think we're going to cover and
13 the matrix sort of goes along in this order.
14 The first one being Super S plutonium question;
15 the second one neutron dose reconstruction and
16 several other matrix items related to that so I
17 thought I'd lump them into one -- one item on
18 the agenda. A third item is other
19 radionuclides and that includes the americium
20 question. A fourth item is data reliability
21 which includes both questions on database as
22 well as these more specific I guess case
23 follow-up questions that we've been pursuing.
24 And then the fifth -- the last one is kind of a
25 new item that came up at the last Advisory

1 Board meeting which was the question on D&D
2 workers, how dose reconstruction would be done
3 for D&D workers. So I think we're going to
4 start with discussion on Super S plutonium and
5 I think that where we left it was that SC&A was
6 going to follow up on the TIB freon model,
7 looking at the design cases and the USTR cases
8 a little more in depth. I think they had done
9 a general review of that but I think they were
10 going to do more follow-up on that. And I
11 guess I can turn it over to SC&A unless --
12 unless Brant or Jim have comments. I think
13 it's really in SC&A's court on this one.

14 **DR. MAURO:** Yeah, I guess over the last few
15 weeks Bob and Joyce have been looking very
16 closely into the lab exchange and lab analysis.
17 I guess I -- I would like to turn that over to
18 -- to start it off. Joyce really has taken the
19 lead and Bob came in and hooked up with the
20 team and -- to pick up from where we left off.
21 So with that, Joyce, if you could provide a --
22 an overview of the follow-up investigations,
23 maybe even starting a little earlier. Sort of
24 set the table where we left off at the last
25 meeting, get everybody oriented, sort of on the

1 same page and then pick it up from there and
2 how the -- your investigations progressed and
3 how Bob and you -- where Bob and you are at
4 this point in time in that process.

5 **DR. LIPSZTEIN:** Okay. One of the things that I
6 started doing was to look at the data from
7 Rocky Flats that are part of the uranium --
8 U.S. Transuranic and Uranium Registry. So I
9 looked at several of the cases and on those
10 cases there are some bioassay data and the
11 autopsy data. So I looked at several of them
12 to see if the -- the model that NIOSH presented
13 for us, Super Type S, which is an -- an
14 empirical model, would be claimant favor on
15 those cases. Other -- Saying it in another
16 way, to see if the predicted or the -- or the
17 quantities would be higher than the ones or --
18 or similar to the ones on the autopsy data. So
19 far all the cases that I have analyzed -- I
20 didn't analyze all of them. So far if you im--
21 if you use the high fired approach I always get
22 predicted quantities that are higher than the
23 quantities from the autopsy data. I am finding
24 some problems with the bioassay data that is
25 presented on the Transuranic Registry and I

1 will need to look at -- at this then. Like for
2 example I -- I got into a bioassay table where
3 I had a urinary excretion with a date after the
4 person died so I have -- I have to look to see
5 how -- how well in another place the bioassay
6 data that is on the -- the registry. But I
7 think that most if -- the predictions from the
8 high fired model are so much higher than what
9 we find on autopsy that I think this model will
10 envelope everything of problems. Now, we, I
11 think then Mark develop of this also. We want
12 to input the -- the data for the cases itself.
13 If -- If you apply of course the -- the
14 empirical model it -- it's exactly what you get
15 from the -- the curves that were shown. And
16 then I think Mark can -- probably more about
17 that because I didn't get into exactly all of
18 the -- the -- the database but some of the data
19 from the people that were used to -- to devise
20 the models, not all the bioassay agree that
21 were used so one is wondering why this
22 happened. And I think that's where we stand
23 for now.

24 **MR. GRIFFON:** What Joyce -- I -- I went with
25 the cases, mainly the -- well, the fired cases

1 and also there's -- there's I think two or
2 three other cases that are design cases. And I
3 -- I tried to look -- well, let me just -- this
4 -- I mean part of what led me to this was when
5 I looked at the spreadsheets provided it was
6 clear in all the fired cases that the in vivo
7 counting started right away and they did counts
8 daily right after the incident. On the urine
9 side often that wasn't the case at least for
10 the data provided in the spreadsheets and I
11 thought that was rather peculiar so I tracked
12 back. Without having identified data I had to
13 kind of do it detective style and identify high
14 points and find the right exposure ID and sort
15 it by that. But I -- I identified for several
16 of the cases where they were they were missing
17 a large chunk of data at the beginning, a large
18 chunk of urinalysis data. Case 825 in
19 particular since that is the bounding case,
20 that was missing a big chunk of data from the
21 date -- date up to the accident, 10/19/65 'til
22 2/10/66 I think if my -- if my notes are right
23 here. But there was a large chunk of data
24 missing. So I just wondered was that -- on
25 that -- I think on that case in the spreadsheet

1 there is actually a note saying that all the
2 data wasn't retrieved and I just wondered why -
3 - why this was and at first I thought, well,
4 825, 872 and 934 -- or 825 and 872, those two
5 cases in particular were chelation cases so I
6 thought maybe that's why the early data was
7 excluded because it had a spike in the data and
8 -- and you want it to fit the long-term
9 component or whatever. But -- But then I -- I
10 just -- I just wanted maybe an explanation from
11 NIOSH ORAU team on why that, you know, was that
12 intentional or was that just that you didn't
13 have the right data together. Also I -- I --
14 and I -- I -- I did this -- I tried to look at
15 the intakes calculated from the urinalysis and
16 the lung data. And in TIB 49 they say you
17 modify the parameters, you did this empirical
18 fit to basically make the best fit but also to
19 -- so that the calculated intakes would be
20 basically the same from the urinalysis or the
21 in vivo. And if I use all the data on these
22 cases I get a slightly dif-- slightly -- a more
23 -- a more different intake calculated which I
24 guess is no surprise really but -- and it
25 actually ends up with a lower intake for

1 whatever that -- that means. But I -- the main
2 question I have was why was that data excluded
3 and was that -- that pattern sort of consistent
4 with all the cases. Did the chelation case --
5 was the chelation effective basically? Because
6 I was hearing sort of maybe mixed stories on
7 that whether the chelation did anything at all.
8 And so maybe I'll just ask that.

9 **DR. NETON:** Yeah, I think Roger Falk is on the
10 phone --

11 **MR. GRIFFON:** Yeah.

12 **DR. NETON:** -- and he should be -- he's in the
13 best position to answer.

14 **MR. GRIFFON:** Right. Right.

15 **MR. FALK:** Yes, this is Roger Falk. The --
16 The -- The practice is that if a case was
17 actually chelated that a person should not use
18 the urine data which is less than 90 days past
19 the date of the last chelation because that is
20 actually perturbed urine data and therefore
21 should not be used for the modeling purposes.
22 And that's why -- that's why we -- that's why
23 we excluded the urine data that could have been
24 potentially affected by the actual chelation
25 process. Also for a couple of the cases I did

1 not have all of the person's urine data
2 available, and that was especially true for the
3 case 872. Since the Super Type S is mainly the
4 lung retention I was focused on getting the --
5 I was focused on getting the complete setup of
6 the lung data. But the only data that I was
7 really concerned about was the modern long-term
8 urine data that I did have on the data floor.
9 So it was more of a practicality as to whether
10 it was useful especially during the early
11 development of the models to try to get all of
12 the early urine data, and the choice that I
13 made was no, that was not necessary because it
14 is a lung retention issue that we focused on.

15 **MR. GRIFFON:** Okay. I mean I -- I do -- what
16 you said, that 90-day thing doesn't quite fit
17 with the three cases but case 825 actually the
18 90-day idea -- notion that you -- you indicated
19 seems to be what -- what went on. Case 934 is
20 a chelation case though and the -- well, that --
21 -- that may be consistent, too. And then like
22 you said, 872, it -- it was just a question of
23 not being able to recover the early data
24 because 872 was the most -- the one that I
25 looked at first and the data in the spreadsheet

1 you used didn't start 'til 7/10/1980. And
2 there were -- there -- there were probably
3 about 50 data points prior to that from
4 10/17/65 so that's what kind of prompted my
5 looking into this. But I don't disagree with
6 what you said about the long-term component
7 being the critical one. I -- I guess the
8 other thing this brought me back to was -- was
9 the -- just how did -- did we -- how did you
10 arrive at the case selection. And I did
11 actually in looking at this it did allow me to
12 confirm that all these six fired cases that I
13 looked at seemed to have no previous -- they
14 seemed to be clean cases prior to the fire, at
15 least where I could find data. Some had no
16 data before the fire but the ones that I looked
17 at did seem to be "clean cases". They had
18 zeros or less than MDA prior to the fire so
19 that would support your -- your assertion about
20 that which is good. That makes sense. But I
21 didn't know otherwise how these six were
22 determined out of the 25 or so that you said
23 had high lung burdens. And I don't know if you
24 can shed any more light on those. Were these
25 the -- these weren't necessarily the highest

1 exposed; they were just the best clean cases
2 that you had?

3 **MR. FALK:** They were the best clean cases and
4 they also participated in the medical
5 monitoring program --

6 **MR. GRIFFON:** Oh, later?

7 **MR. FALK:** -- later on so that we had the
8 modern lung counts and we had the modern urine
9 data. And -- And the modern lung counts was
10 the most crucial because then we got -- then we
11 got the long-term retention profile and that
12 was essential.

13 **DR. LIPSZTEIN:** I -- I have another question
14 for you. When I look at the autopsy cases
15 there are some people that did not participate
16 in the -- were not contaminated in the
17 plutonium fire. In fact they dealt with
18 (unintelligible). And when I use the high
19 fired plutonium model I always get the amount
20 in organs that are higher than the ones from
21 autopsy but if instead of using high fired
22 plutonium model I use simply Type S plutonium
23 sometimes I get lower amounts in -- depending
24 on the scenario of course, if I interpret the
25 bioassay data I -- sometimes I get lower

1 quantities in lung than they are from the
2 autopsy data. So are we going to treat all
3 plutonium cases as high fired or how -- or
4 what's the proposal of NIOSH?

5 **DR. NETON:** Yes, we will if we don't know any
6 better we're going to treat them all as Super S
7 type material. It's the issue we're dealing
8 with, not only Rocky now but other sites. But
9 it's -- it's -- it does seem to be that it
10 doesn't necessarily have to be high fired from
11 a fire. I mean we're seeing that and we
12 noticed that as well in the autopsy cases.

13 **DR. ULSH:** Or it could be not this particular
14 fire but another fire event.

15 **DR. NETON:** Or whatever but, you know, if --
16 we're going to default for these cases when
17 it's claimant favorable to the high fired Super
18 S material.

19 **DR. MAURO:** One of the -- this is John Mauro.
20 One of the subjects we talked about at an
21 earlier meeting was that it wasn't only
22 necessarily the fires that produced it so -- so
23 there actually were operations going on where
24 the potential to produce high fired plutonium
25 was also. So I think it's --

1 **DR. ULSH:** Yeah.

2 **DR. MAURO:** -- true.

3 **DR. NETON:** It's just not high fired any more.
4 I think it's just the Super Soluble form of
5 plutonium that, you know, one sees it at -- at
6 Mayak and other places. It's -- It's a
7 reality.

8 **DR. MAURO:** Now, would they also -- I'm sorry.
9 Would they also in those circumstances, I know
10 the fire -- we're dealing with these very small
11 particle size distributions that were a
12 fraction of a micron. Is that also the case
13 for operations or is there really a clean
14 divide between the particle size, EMAD, for the
15 high fired, versus let's say, operations? Was
16 there a clean distinction there or is -- are we
17 in a situation where the high fired -- we're
18 actually moving in a direction where the high
19 fired plutonium was known to be the default?

20 **DR. NETON:** The high fired chemical form but
21 not necessarily the particle size distribution.
22 Right now I think our particle size
23 distribution if a person is involved in the
24 fire is .3 microns. I'm not sure. I think
25 it's .3 microns. But we were not intending to

1 default to smaller particle size unless we knew
2 the person was involved in -- in the fire.
3 Right now our default for the normal operations
4 of the plant is for -- as is for other sites
5 unless -- I haven't seen anything to the
6 contrary on that.

7 **MR. GRIFFON:** Do you know if you have enough
8 information to determine whether a person was
9 or was not exposed to Super S or is that going
10 to be based on the --

11 **DR. NETON:** Super S is going to be on --

12 **MR. GRIFFON:** -- urinalysis data itself or --

13 **DR. NETON:** Well, the Super S is just another
14 one of the -- looking at other sites we have
15 three default solubility classes.

16 **MR. GRIFFON:** Right.

17 **DR. NETON:** But Rocky Flats we have four
18 default. And whichever one gives you the
19 largest -- the larger dose to the organ --

20 **MR. GRIFFON:** So you're applying it across the
21 board you're saying?

22 **DR. NETON:** Yeah.

23 **MR. GRIFFON:** Okay. That wasn't clear.

24 **DR. NETON:** We're not going to triage them
25 based on whether they're --

1 **MR. GRIFFON:** I thought you said unless you
2 knew otherwise.

3 **DR. NETON:** I'm talking about the particle
4 size. That's a different issue.

5 **MR. GRIFFON:** Okay.

6 **DR. NETON:** The fire we know is a false
7 particle size.

8 **MR. GRIFFON:** Particle size. Oh, for
9 solubility.

10 **DR. NETON:** Solubility we're going to apply.

11 **MR. GRIFFON:** Got you.

12 **DR. BISTLINE:** So you're using .5 micron for
13 the particle size default?

14 **DR. NETON:** I believe that's the case at Rocky
15 right now, yes.

16 **DR. ULSH:** I think so. That's the ICRP
17 default.

18 **DR. NETON:** Well, you can -- unless we know
19 otherwise. Now, that's, you know, depending
20 upon the situation. If we get data that --
21 that indicate that there are smaller particle
22 size distributions for other operations we'd
23 certainly use them but right now when I -- I
24 haven't looked at the profile awhile but --

25 **DR. ULSH:** But am I correct that that's not as

1 critical an issue when you're starting with
2 urine samples?

3 **DR. NETON:** Right. When you start with urine
4 data which we believe we have most people from,
5 then particle size is not an issue.

6 **DR. BISTLINE:** Well, I think it's -- I think
7 it's claimant favorable, any approach that
8 you're taking in terms of -- in treating the
9 high fired data because there are areas in
10 production processes where you have a mixture
11 and there's certainly an indication that
12 there's a mixture. You have some -- some high
13 fired as well as -- and case number 1228 is a
14 good example of that over-pressure condition
15 that was -- that was brought out in 049. And I
16 think that's true of -- of a lot of cases that
17 -- if you look at it carefully you'll see that
18 it fits that profile.

19 **DR. MAURO:** Yeah, this is John.

20 **DR. LIPSZTEIN:** I couldn't hear anything.

21 **DR. MAURO:** Go on, Joyce.

22 **DR. LIPSZTEIN:** I couldn't hear anything that
23 was said now.

24 **MR. GRIFFON:** Oops.

25 **MS. MUNN:** Oh, dear.

1 **DR. NETON:** Are these microphones live on our
2 end of the table? I assumed they were.

3 **DR. LIPSZTEIN:** I can hear you perfectly, Jim,
4 but I couldn't hear --

5 **MR. GRIFFON:** Okay. We'll have to make sure we
6 lean toward the table and speak up. Can you
7 hear me, Joyce?

8 (No response)

9 **DR. MAURO:** Try it again.

10 **MR. GRIFFON:** Joyce, can you hear me?

11 **DR. LIPSZTEIN:** Yes.

12 **MR. GRIFFON:** Okay. We'll just have to be
13 careful to speak up a little louder and toward
14 the mike. Sorry about that. Bob, do you want
15 to maybe repeat what you said if you can
16 remember it, repeat what you said and --

17 **DR. BISTLINE:** Well, one of the -- one of the
18 points that I was making was that I feel --
19 feel pretty comfortable that the -- the
20 approach that NIOSH is using with regard to the
21 use of high fired oxide is making those
22 calculations both directions using S as well as
23 Super S, are -- are -- are a good approach for
24 conservatism for -- for the workers because
25 some of the operations -- the foundry

1 operations, calcining operations and so forth
2 that workers were involved in -- involved both
3 there was an appearance that there may have
4 been some high fired mixed in with the -- with
5 the little, slightly more soluble form and the
6 case 1 -- 1228, if you look at it, it was a
7 case that there was no fire involved but there
8 was an over-pressure and certainly fall -- it
9 fits that pattern. And I know other sites have
10 seen some similar types of profiles in -- in
11 their -- in their workers.

12 **DR. ULSH:** I think that's a good argument for
13 why we're just going to default the Super S
14 because like you said, I mean there are other
15 situations that could lead to exposure to Super
16 S and sorting that out would just be a -- a
17 nightmare so...

18 **MR. GRIFFON:** That wasn't clear to me earlier
19 but maybe -- maybe it was to you guys. That --
20 That -- That's good to hear. Are there any
21 other questions on Super S? I think what
22 remains -- I think that Joyce and Bob are going
23 to finish up and provide us with a written
24 piece on the analysis, right? Your comparison
25 with the USTR cases and --

1 **DR. MAURO:** Yes.

2 **MR. GRIFFON:** Is that correct?

3 **DR. MAURO:** Well, before we talk about the
4 closeout, there was one issue that emerged.

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

6 **DR. MAURO:** I think it was a week ago yesterday
7 we had a call. I missed yesterday's call. But
8 Bob, you -- you pointed something out about the
9 actual empirical measurements that were made on
10 the autopsy data and it was your -- and you
11 were personally involved in some of that. And
12 it was your experience that there was a fairly
13 large uncertainty in the measured values that
14 was -- and as a result I think everybody has
15 been operating on the -- on the premise that
16 while we've got some very nice numbers from the
17 autopsy data and then we use those as our
18 benchmark. Okay, here's a number. How do we
19 predict against that number? But Bob pointed
20 out that there was a pretty wide uncertainty on
21 some of these measured values and during the
22 conversation, Bob, you -- you have indicated
23 that it was your sense at the time that there
24 was enough conservatism built into the protocol
25 that accounted for let's say the -- the

1 significant amount of uncertainty. You -- You
2 indicated you were going to look into that a
3 little bit.

4 **DR. BISTLINE:** Yeah. Yes, John. Just -- Just
5 to point out, one of the cases that was not
6 included in this but -- and -- and I think
7 rightfully so for the most part is -- is the
8 highest case that -- that occurred at Rocky
9 Flats in the 1965 fire. And in this particular
10 case the -- the individual had a -- a very high
11 deposition, lung deposition at the time, died
12 in 1973, and -- and in the autop-- just prior -
13 - the last lung count that was done on him
14 showed -- showed 107 nanocuries in his lungs.
15 But when we did the autopsy and analyzed the
16 tissue in the lungs this individual had 222
17 nanocuries of plutonium and 48 -- 47 nanocuries
18 of americium in his lungs at the time of his
19 death so -- so, you know, there's quite a bit
20 of disparity here in the -- in the count. And
21 yet looking at this I would say that the
22 approach that NIOSH is using with this
23 empirical format is -- has a large enough
24 uncertainty associated to it to -- to make it
25 conservative. And I -- I feel fairly

1 comfortable with it so in -- in some cases we
2 may be over -- may be over-predicting the
3 amount considerably but in other cases there is
4 enough disparity in -- in the analysis that --
5 from what the lung count indicated and what the
6 autopsy data indicated that -- that we -- we
7 can't close that gap too much or we may -- we
8 may -- may not be as conservative as we thought
9 we were.

10 **MR. GRIFFON:** All right. So I think SC&A is
11 still going to provide a written piece on this,
12 right?

13 **DR. MAURO:** Let's -- Let's talk about that a
14 little bit.

15 **MR. GRIFFON:** Yeah.

16 **DR. MAURO:** We are -- our -- our overarching
17 plan is not to deliver the official report,
18 which is the review of the evaluation report,
19 until after the June Board meeting. That would
20 be our official work product because I think
21 there's a lot of word-smithing, a lot of work
22 to be done, lots of issues to be covered. But
23 we did talk about I guess trying to bring to
24 the table closure on at least some issues in
25 some form. I'd like to talk a little bit

1 about, you know -- really to talk to Bob and
2 then Joyce, you know, Joe. Right now are we --
3 are we -- are we in a position now where we can
4 start to put together white papers? I'm not
5 even sure what you would call it. Prior to the
6 meeting, and perhaps have the working group,
7 deliver something to the working group along
8 the lines of the conversations we're having
9 right now where you'd be in a position to
10 report back to the Board for the Washington
11 meeting. I'm not quite sure how do we bring
12 this -- this home without the actual having the
13 -- the official work product delivered.

14 **MR. GRIFFON:** Right.

15 **DR. MAURO:** I mean I guess I -- you know, what
16 would you -- what would you like?

17 **MR. GRIFFON:** I'm not sure either. I -- I
18 mean I was thinking more of a, you know, we've
19 had responses going back and forth in our work
20 group process and if this could still be just
21 considered another response to matrix item
22 number one in a Word document. But I -- I
23 guess it's leading us to your final product
24 which is your review report or your evaluation
25 report. Hopefully where, you know -- so that

1 we don't have surprises in that evaluation
2 report.

3 **DR. MAURO:** So this would be a work in progress
4 though. Is that what you're suggesting?

5 **MR. GRIFFON:** Yeah, a draft.

6 **MR. FITZGERALD:** In terms of evaluation. I
7 mean --

8 **MR. GRIFFON:** Yeah. In terms --

9 **MR. FITZGERALD:** It's really our evaluation at
10 this point in time.

11 **MR. GRIFFON:** Right.

12 **MR. FITZGERALD:** And that would proceed to be
13 included in this overall ER, evaluation that we
14 put together after the meeting so I think it
15 would be --

16 **MR. GRIFFON:** Just so you're not saving
17 everything until the final report.

18 **MR. FITZGERALD:** Right.

19 **MR. GRIFFON:** So NIOSH has some sense and the
20 work group has some sense of the direction.

21 **MR. FITZGERALD:** Yeah.

22 **MR. GRIFFON:** And where we're at on each issue.
23 So an interim report would be great for -- for
24 -- and I think you're probably going to be in a
25 position to do that on several of these major

1 topics that we discussed.

2 **DR. WADE:** On the Board's agenda we have --

3 **MR. GRIFFON:** At least a few of them.

4 **DR. WADE:** On the Board's agenda we have a
5 block of time allocated for Rocky Flats SEC
6 update so there's time. I think the more you
7 can bring to -- to further the discussion with
8 the process I think the better.

9 **DR. MAKHIJANI:** Mark, the -- the -- the matrix
10 item, the really technical items, maybe the
11 format -- this is the first time we would be
12 kind of doing a piece for an evaluation report
13 review that comes from a matrix item.

14 **MR. GRIFFON:** Right.

15 **DR. MAKHIJANI:** And maybe -- maybe a format --
16 thinking about it as a -- as a technical
17 memorandum on a matrix, corresponding to a
18 matrix item. Because that's what it is really.
19 It's a -- It's not a white paper that's
20 definitive on a subject that covers everything
21 because NIOSH has done so much work on it. So
22 I would hesitate for it to be thought of as a
23 white paper.

24 **DR. MAURO:** Yeah, I -- I --

25 **DR. MAKHIJANI:** But maybe a technical

1 memorandum of SC&A's review.

2 **MR. FITZGERALD:** That was kind of my fault.
3 Not a white paper but really an update in term
4 -- a report in the form of a memorandum would
5 be fine. That would keep it in the context
6 that we've done in the work group before.

7 **MS. MUNN:** Certainly you need --

8 **MR. GRIFFON:** Same -- Same thing there, yeah.

9 **MS. MUNN:** Yeah. Any technical report that
10 indicates agreement -- closure on a specific
11 major guideline would certainly be greatly
12 appreciated here.

13 **DR. ULSH:** All right. Well, that was my
14 question. Is -- Is -- Is that what you're
15 talking about, John? Limit it to those issues
16 where you feel that we can close or is this --

17 **DR. MAURO:** Well, yeah. I'd like to hear a
18 little bit more from Bob and from Joyce on --
19 you folks feel you're done I mean other than
20 let's say assembling material?

21 **MR. FITZGERALD:** She's done three or four cases
22 so there's certainly more on her plate.

23 **DR. MAURO:** Okay.

24 **MR. FITZGERALD:** But I think we're progressing
25 pretty well. I think, Joyce, you were saying

1 maybe the end of next week we would be pretty
2 close.

3 **DR. LIPSZTEIN:** Yes, but I still have a lot to
4 do.

5 **MR. FITZGERALD:** Yeah.

6 **DR. LIPSZTEIN:** So I don't know. One of the
7 things that is bothering me is the bioassay
8 data from the uranium (unintelligible) data
9 that is on the -- I think it's from the ORAU O-
10 drive, there is a part on the Rocky Flats
11 uranium transuranium registry. Is this
12 bioassay data, can we trust it? Has ORAU
13 looked at it? Because it's bothering me a lot
14 that if I -- I -- I went into one of the cases
15 and there was a urine of bioassay value that
16 was taken on a date after the person was dead
17 so I -- I don't know how to -- if -- if I
18 should trust it.

19 **MR. GRIFFON:** I don't know to what extent
20 you've val-- you went in and validated the
21 USTUR.

22 **DR. NETON:** Are you talking about the USTUR
23 data?

24 **MR. GRIFFON:** Yeah.

25 **DR. NETON:** Yeah. That -- That is provided as

1 it was given to us from the USTUR.

2 **MR. GRIFFON:** All right.

3 **DR. NETON:** So we did not go through and --

4 **MR. GRIFFON:** Right.

5 **DR. NETON:** -- go through and do a reliability
6 check or whatever on it.

7 **MR. GRIFFON:** You're using that sort of as a
8 confirmation of your --

9 **DR. NETON:** Right.

10 **MR. GRIFFON:** -- a check on your model, right?
11 Yeah. So the answer is no, Joyce, I don't
12 think they've --

13 **DR. NETON:** We haven't explored those -- those
14 data points at all.

15 **MR. GRIFFON:** And I don't know what process
16 USTUR has for quality control for their case
17 data.

18 **DR. NETON:** I don't know. I mean we can find
19 out and certainly -- Tony James provided those
20 to us.

21 **MR. GRIFFON:** Right.

22 **DR. NETON:** For this program.

23 **DR. MAKHIJANI:** In light of Joyce's question it
24 might be useful to have a couple of -- a
25 document from Tony James saying what they did

1 to validate the data so, you know, so we have
2 some confidence in that procedure. Or listing
3 some documents.

4 **DR. NETON:** I'm not sure they've done anything
5 to be honest with you. I mean these cases were
6 put out there for people to look at.

7 **DR. MAKHIJANI:** Oh, I see.

8 **DR. NETON:** We -- You know, we didn't use them
9 in our model. They're there to do comparisons.

10 **DR. MAKHIJANI:** I see.

11 **DR. NETON:** And now if we -- you know, we -- we
12 never --

13 **DR. MAKHIJANI:** Okay.

14 **DR. NETON:** -- purported that these were going
15 to be used --

16 **MR. GRIFFON:** Right.

17 **DR. NETON:** -- for anything other than a --

18 **MR. GRIFFON:** A check.

19 **DR. NETON:** -- a check.

20 **MR. GRIFFON:** Yeah. Yeah.

21 **DR. NETON:** And -- And so one asks -- asks the
22 question how much do we go down that path then
23 to validate data; then we have to validate
24 another set.

25 **MR. GRIFFON:** Well, I guess -- I guess I would

1 say, Joyce, if you find a lot of these problems
2 or, you know, maybe keep note of these concerns
3 but the answer is no, the -- ORAU didn't -- and
4 I don't know that they should have but they
5 didn't attempt to validate that.

6 **DR. LIPSZTEIN:** Just one --

7 **MR. GRIFFON:** And as Joe said -- go ahead.

8 **DR. LIPSZTEIN:** Just one other thing. On the -
9 - On -- You provided together with OTIB 49 a
10 draft approach to those (unintelligible) for
11 super type S material and there is a table here
12 comparing lung and liver estimates through
13 autopsy data. Is it possible to get which
14 cases you got this, from which cases?

15 **DR. ULSH:** I think we had talked about that
16 after the Y-12 conference call. However, they
17 all kind of run together now. Joe, were you
18 guys going to send over -- I can't remember
19 what the action was. They were going to -- I
20 think you were going to send over a list of
21 ICD-9 codes that you were interested in and we
22 were going to tell you the case numbers? Am I
23 confusing a couple of issues or --

24 **MR. FITZGERALD:** No, actually you did send over
25 the codes, the general codes and Joyce, you've

1 got the codes I think, and we're going to -- I
2 think Brant's right. You were going to select
3 which ones.

4 **DR. ULSH:** And then we pulled all the Rocky
5 cases with those ICD codes.

6 **MR. FITZGERALD:** Right.

7 **DR. ULSH:** At least I can get a list of them.

8 **DR. LIPSZTEIN:** I don't honestly -- there's a
9 table there with some autopsy data.

10 **MR. FITZGERALD:** No, no. There was a table of
11 codes for the different cancer types and the --
12 the notion was to select from those codes which
13 ones we want the data for.

14 **DR. ULSH:** That was in OTIB-5 I think, lists
15 the ICD-9 codes and cancer types.

16 **MR. GRIFFON:** I think you're talking about the
17 Super S. She's talking about the Super S.

18 **DR. LIPSZTEIN:** Yeah, I'm talking about the
19 Super S.

20 **MR. GRIFFON:** It's called the Super S.

21 **DR. LIPSZTEIN:** There is a code, Super S, the
22 ratio of lung estimates to autopsy measurements
23 and the ratio of liver estimates to autopsy
24 measurements and --

25 **DR. NETON:** Is that --

1 **DR. LIPSZTEIN:** -- because I don't know from
2 which data they took, which list.

3 **DR. NETON:** It's not in -- well, there's TIB-49
4 and then there's a supplement to TIB-49 that we
5 intend to use.

6 **DR. LIPSZTEIN:** Exactly, yes. It's on the
7 supplement.

8 **DR. NETON:** Okay. I don't remember --

9 **DR. LIPSZTEIN:** That's when you -- you tried to
10 build, when you were building that the -- the --
11 -- the Super S assumption is claimant favorable
12 so you are comparing autopsy data with the
13 estimate.

14 **MR. GRIFFON:** Super S.

15 **DR. LIPSZTEIN:** And I don't know from which
16 cases they were taken.

17 **DR. NETON:** That was -- That was a handout I
18 think at -- at a -- at a --

19 **MR. GRIFFON:** At the working group meeting.

20 **DR. NETON:** Yeah.

21 **MR. GRIFFON:** It's called approach to dose
22 reconstruction for super type S material.

23 **DR. NETON:** That was a presentation. It's not
24 part of any official document that we've
25 generated. But I can -- I can -- we can find

1 that table and I can -- we can definitely get
2 you the numbers or the cases that were --

3 **DR. LIPSZTEIN:** Okay.

4 **DR. NETON:** That was -- That was one of the
5 last slides I presented at the Boston working
6 group meeting but to my knowledge it was not
7 incorporated into any of our -- our procedures.

8 **MR. GRIFFON:** And Joyce, you wanted to know
9 from what cases that table was derived? Is
10 that --

11 **DR. NETON:** Yeah.

12 **DR. LIPSZTEIN:** Yes.

13 **DR. NETON:** We can do that, yeah. I -- I
14 guess I was confused because it wasn't in any
15 document that we have. It was something I
16 presented.

17 **MR. GRIFFON:** Yeah. Is it table -- which table
18 is it, Joyce?

19 **DR. LIPSZTEIN:** It's the -- It's the -- It's
20 table 2.

21 **MR. GRIFFON:** Table 2, I got it.

22 **DR. LIPSZTEIN:** The approach to dose
23 reconstruction for super type S material.

24 **MR. GRIFFON:** Okay. We -- I got it here,
25 yeah. I had to find it on my computer.

1 Super S.

2 **DR. NETON:** Yeah, we can get you those numbers.

3 **DR. LIPSZTEIN:** Okay.

4 **MR. GRIFFON:** Okay. So we still got some
5 closeout to do with the comparisons but we
6 think that probably by the Board meeting you'll
7 have an interim report or technical memo
8 related to this subject on Super S; is that --

9 **DR. NETON:** Yes.

10 **MR. GRIFFON:** Is that fair?

11 **DR. NETON:** Yeah.

12 **DR. MAKHIJANI:** But I didn't hear Bob say
13 anything about the uncertainties on the -- on
14 the measurements.

15 **MR. GRIFFON:** He did -- He did mention it a
16 little.

17 **DR. MAKHIJANI:** I thought he was talking to the
18 other case.

19 **DR. BISTLINE:** I didn't say -- say -- Yeah, I
20 really -- Yeah, I -- I still feel fairly
21 confident in the -- the other organs as well
22 that were -- that were -- that the model is --
23 is probably overestimating and is -- is
24 claimant favorable.

25 **DR. MAKHIJANI:** Yeah, but will you have some

1 discussion in this memorandum about the
2 uncertainties and measurements?

3 **DR. BISTLINE:** I think --

4 **DR. MAKHIJANI:** That's all I want.

5 **DR. BISTLINE:** Okay.

6 **DR. MAKHIJANI:** In your work with Joyce will
7 you address this question because it's come up
8 and I think if we're going to put something to
9 bed than all the issues that have come up --

10 **DR. BISTLINE:** Joyce --

11 **DR. MAKHIJANI:** -- be put to bed.

12 **DR. BISTLINE:** Joyce, you were -- you were
13 planning on addressing that, too, weren't you?
14 The --

15 **DR. LIPSZTEIN:** Yes.

16 **DR. BISTLINE:** -- other organs as well?

17 **DR. LIPSZTEIN:** Yes. I'm doing -- what I'm
18 doing now is liver and bone which I think is
19 the most important organs for our plutonium.

20 **DR. BISTLINE:** Correct.

21 **DR. LIPSZTEIN:** And so that's what I'm trying
22 to do is liver, bone and lungs. That's the
23 three systemic organs that I'm testing. And I
24 think that if it works for those three organs
25 it's okay. I'm a little bit concerned about

1 the thoracic but I -- I have to take another
2 look at the thoracic corrections
3 (unintelligible). But for all the others I can
4 -- I'm pretty comfortable with it.

5 **DR. ULSH:** Just to clarify again. What you're
6 talking about --

7 **DR. LIPSZTEIN:** I'm -- I'm talking about the
8 (unintelligible) adjustment corrections for the
9 thoracic region which is 49-plus the draft.
10 There is an adjustment factor for the GI tract
11 and there is adjustment factor for systemic
12 organs and there is an adjustment factor for
13 extra-thoracic.

14 **DR. NETON:** Right.

15 **DR. LIPSZTEIN:** And I -- I didn't check the
16 extra-thoracic yet.

17 **DR. ULSH:** Just to step back for just a second
18 though. The products that you're talking
19 about, John, the interim evaluations I think
20 they've been called. Super S might be one of
21 them and there might be others. Are these
22 issues that we agree that we can come to --
23 that we've come to closure on or are these
24 other issues, too, or what?

25 **DR. MAURO:** My objective -- My objective --

1 and I guess this is really out for discussion -
2 - is that the Super S issue is, as we can hear,
3 has a lot of sub-elements to it. And as I --
4 as I'm hearing it a lot of those sub-elements
5 have been put to bed. However, there are
6 certain sub-elements that Joyce is still
7 looking at which may very well be put to bed
8 within a week. I don't know. So at a minimum
9 -- at a minimum we will be able to deliver a
10 status report that will come in written form to
11 the working group shortly that will identify
12 exactly where our position is yes, closed out.
13 Issue -- Sub-issue number one, whate--
14 whatever they are 'cause there sounds like
15 there's some texture here --

16 **DR. ULSH:** Right.

17 **DR. MAURO:** -- that -- and -- but -- where we
18 can say right now yes, we agree.

19 **DR. ULSH:** Okay.

20 **DR. MAURO:** Then the methodology you proposed
21 does the trick. But there are other areas that
22 I'm hearing Joyce that would like to do a
23 little bit more work. Sounds like extra-
24 thoracic region, the GI tract; she mentioned
25 one other that she's still checking. I don't

1 know, you know. My objective quite frankly is
2 to be able to say here's a full list of issues
3 and sub-issues associated with the high fired
4 plutonium. Here's what we did to check them
5 and here's what we found out. And maybe I'll
6 be at the end saying we concur in the
7 methodology. It is claimant favorable and
8 scientifically plausible and -- and just move
9 down each one of them. Places that we either
10 have not had adequate time to check out or
11 there -- we still have some questions, maybe
12 things just don't seem to make -- ring true,
13 we'll point that out also. I hope those are to
14 the minimum. That'll be the next thing we
15 deliver to the working group. Joe, please, if
16 you think that way of looking at it is --
17 **MR. FITZGERALD:** Yeah, I think we might very
18 well say that there's a specific piece of
19 information that in the process of revealing it
20 we discover we need but, you know, I think this
21 is a process of converging. I think what we're
22 saying is we're converging on this issue. We
23 just want to account for how far that's gone.
24 And we want to make sure the Board's aware of
25 that.

1 **DR. NETON:** I think we ought to be careful.

2 I'm -- I'm hearing now --

3 **DR. LIPSZTEIN:** I --

4 **DR. NETON:** -- in principle people are --

5 **DR. LIPSZTEIN:** I have -- I have another
6 question for Jim, for NIOSH. What about the
7 lymph nodes? Hello?

8 **DR. NETON:** Yes, this is Jim. I'm thinking. A
9 three-day weekend. We -- The lymph nodes are
10 included in -- as part of the lung model, are
11 they not?

12 **DR. LIPSZTEIN:** No.

13 **DR. NETON:** Which lymph nodes are you talking
14 about?

15 **DR. LIPSZTEIN:** The -- The one -- one -- you
16 put the -- 0049 --

17 **DR. NETON:** Right.

18 **DR. LIPSZTEIN:** You've decided it wasn't valid
19 for lymph nodes.

20 **DR. NETON:** Right.

21 **MR. GRIFFON:** That's right.

22 **DR. LIPSZTEIN:** And this draft, approach to
23 dose reconstruction that complements 49 also
24 doesn't touch on lymph nodes.

25 **DR. NETON:** I'm trying to think of what we did

1 with that now. I'll have to -- I'll have to
2 get back to you on that. I just -- I just am
3 drawing a blank right now. I know -- I know
4 I've had these discussions but I can't -- I
5 can't -- it can't come to me right now. What I
6 was going to say earlier though I think is that
7 it seems like we've -- the approach we've
8 adopted seems in principle to have been
9 generally agreed to. And then how far we go
10 down this path of validating every single
11 calculation seems to me to be sort of outside
12 the realm of the SEC process. I'm just -- my --
13 -- my opinion. So whether or not the -- the GI
14 tract model is sufficiently bounding or not is
15 really sort of out of the realm of the SEC
16 process. It's can we -- can we bound it, and
17 not is it exactly correct. And so I hope that
18 we don't start going down and validating every
19 number here and delay the SEC decision because
20 we're still worrying about, you know, certain
21 approaches that might be a little higher than
22 what we expected.

23 **DR. BISTLINE:** Let me say with regard to the
24 lymph node issue that that's -- that's a touchy
25 one because most people -- I was one of the

1 three prosectors for the U.S. Transuranium
2 Registry, and when I did all my autopsies I
3 dissected out the trachea-bronchial lymph nodes
4 and the bronchial-pulmonary lymph nodes, which
5 was a very tedious job. But -- And those were
6 separated and counted separately but that
7 wasn't always done by everybody else. And so
8 some cases may have not had that separation of
9 lymph nodes. But most of the cases that I did
10 at Rocky did have that. And with the high
11 fired oxide, for instance, on the case that I
12 just mentioned the -- the lymph nodes was where
13 a great deal of the trachea-bronchial lymph
14 nodes was where a great deal of that activity
15 was at. In fact Jim McEnroy (ph) did the --
16 the laboratory analysis of that and craft up
17 these low level counting facility for about a
18 year. It took about a year to recover so...

19 **DR. NETON:** It's -- It's tricky. I -- I'm
20 just trying to think. It seems to me if you've
21 got intake you can get the lymph node content
22 though.

23 **DR. BISTLINE:** But it may be different on high
24 fired oxide than --

25 **DR. NETON:** Yeah, it might be. I'm just trying

1 to --

2 **DR. BISTLINE:** -- because it's so insoluble
3 that --

4 **DR. NETON:** Right.

5 **DR. BISTLINE:** That's where we really found a
6 lot of the activity in high fired oxide.

7 **DR. NETON:** But then if they all go to the
8 lymph nodes then the lung doses are way
9 overestimated so you can't --

10 **DR. BISTLINE:** Yep. Yep.

11 **DR. NETON:** -- have it both ways as usual.
12 It's either a lymph node dose or a lung dose.

13 **DR. BISTLINE:** Right.

14 **DR. MAURO:** Jim, I think this is important.
15 Bob, in your opinion, given this -- this
16 tension, where do you go, if you're looking at
17 the dose to the lung as opposed to the dose to
18 the lymph node? Now, what I'm hearing is that
19 you folks have a protocol which will drive the
20 two, if you happen to be concerned with a
21 particular type of cancer, you're going to make
22 the assumptions that drive it -- the worst case
23 to that direction as opposed to the other.
24 Now, have you had an opportunity to look at
25 that, the way that -- those decision points and

1 you feel as if it's bounded on the lymph node
2 side also? I mean or --

3 **DR. BISTLINE:** I haven't looked at it real
4 closely, John.

5 **DR. MAURO:** It sounds like something we should
6 look at.

7 **DR. BISTLINE:** I need to look at it a little
8 bit more but I still think that the -- overall
9 I think that the conservatism that -- that you
10 folks have built into it is -- is pretty
11 adequate.

12 **MR. GRIFFON:** I have a more general question,
13 Jim. I think, you know, part of what we've
14 been -- SC&A and I think I've been trying to do
15 is to some extent pull the string on some of
16 these things. I think we have to know when --
17 when enough is enough on that. But, you know,
18 I don't think, like for instance the USTUR --
19 for instance we have to understand how they're
20 being used so I don't know. I feel it is
21 reasonable to consider that ORAU should have
22 validated that data. But we also have to
23 understand a little about -- a little more
24 about how useful they are, you know, and so
25 that's why we're pulling these strings.

1 **DR. NETON:** I'm not arguing with that.

2 **MR. GRIFFON:** Right.

3 **DR. NETON:** I'm just trying to keep a focus on

4 --

5 **MR. GRIFFON:** I agree.

6 **DR. WADE:** Yeah, I think it's important Wanda
7 be at the table when we have these discussions.

8 **MR. GRIFFON:** You're -- You're absolutely
9 right, though. I agree.

10 **DR. WADE:** Because there is -- there is a
11 tension. We've always lived with this tension
12 of how much is enough.

13 **MR. GRIFFON:** Right.

14 **DR. WADE:** You know, NIOSH has presented a
15 petition evaluation report to the Board. The
16 Board has not acted upon that petition
17 evaluation report. The Board will have to face
18 that in June and if it doesn't decide in June
19 it'll have to deal with that in September. I
20 think it falls to the Board members on this
21 working group to make the decision as to how
22 you're going to drive this process. I would
23 ask you as a designated federal official that
24 you keep in mind always this tension that that
25 -- where it's really your judgment call that

1 needs to be made here and -- But again
2 sometimes we look at an issue technically and
3 it's so fascinating to us we want to spend a
4 great deal of time. I would ask you that you
5 keep your mind on the overall process as well
6 because in time if you don't decide on Rocky
7 Flats at this meeting or the next meeting we'll
8 start to face significant amounts of pressure,
9 the Board will. And so I mean you have to
10 really take that into account. But that's for
11 the Board members to act on.

12 **DR. MAURO:** When Wanda gets back there is a
13 question I'd like to ask Bob which is posed I
14 think along the lines that we'd like to craft
15 it. I -- I guess right now our main concern
16 is in principle could you envision that by
17 picking the proper parameters you will be able
18 to place a plausible upper bound? Now, there
19 may be some disagreement about what the optimum
20 parameters are based on the data. The data --
21 you looked at a certain amount of data so far
22 and in your judgment what I'm hearing is that
23 the lung into the systemic organs, there
24 certainly appears that it bounds -- so -- in a
25 way not only you -- you also -- you've come to

1 a place where you believe that it's a plausible
2 upper bound, if not conservative. Now we -- we
3 raise the question I guess of lymph nodes in
4 the thoracic region and in principle do you
5 visualize that you can come up with an approach
6 that would, for those individuals that have
7 suffered from that condition, do you envision
8 that the basic methodology be employed and
9 developed by NIOSH could in principle deal with
10 that? Or do we -- or are there some underlying
11 issues that would prevent a plausible upper
12 bound from being placed on that particular
13 organ dose? Do you see what I mean? As
14 opposed to trying to find what the right number
15 is, is it plausible to accept that? Because,
16 see, I notice that we're spending a lot of time
17 trying to decide what's the best assumption to
18 make to get the best number. I think I -- what
19 we're all more interested in is do we have a
20 process that -- that you can find a plausible
21 upper bound that gives the benefit of the doubt
22 to a particular claimant for his particular
23 cancer.

24 **DR. BISTLINE:** I think that's something that
25 maybe Joyce can answer better than I can at

1 this point. She --

2 **DR. LIPSZTEIN:** The -- The only thing that --
3 is that we don't have the upper bounds for
4 lymph nodes. NIOSH didn't give us -- they gave
5 us for thoracic, for extra-thoracic, for GI
6 tract, and it said it doesn't apply to lymph
7 nodes so I'm asking what about lymph nodes.

8 **DR. NETON:** We -- We could answer that.

9 **DR. LIPSZTEIN:** The upper bounds for NIOSH.

10 **DR. NETON:** Rather than speculating on an
11 answer I'll get -- I'll get the real answer.

12 **DR. WADE:** Wanda, while you were gone we had a
13 discussion just about as to how much is enough
14 discussion and I wanted to have a little bit of
15 that with you here also. I mean if you step
16 back on the Rocky Flats SEC petition you look
17 at the broad issue. NIOSH has presented a
18 petition evaluation report. The Board has
19 decided at its last meeting not to vote. And
20 now we'll have to, at each meeting, we will
21 have to come to that decision again. As a
22 designated federal official, if I felt
23 compelled to instruct the Board that I felt
24 that it needed to vote more than it was out of
25 bounds in terms of this issue I'll do that. I

1 don't think that's the case but what I would
2 say to the Board members on this working group
3 is you need to always sort of keep that -- that
4 process in mind. You should have a sense of
5 how much effort you want to spend in going deep
6 in some of these issues to make sure that you -
7 - you in a timely way bring a recommendation
8 that the Board can indeed vote on.

9 **MR. GRIFFON:** Right.

10 **MS. MUNN:** And it is a major concern of mine
11 because these types of issues that we deal with
12 here are issues that any one of us could make a
13 life work of if we so chose to do that. We
14 simply cannot afford to do that, neither in
15 terms of time for the claimants' sake nor in
16 terms of -- of reasonable approach to the
17 issues. So how much is enough is a thing that
18 I think it's imperative the working group come
19 to an agreement on. Otherwise we can't have a
20 very firm recommendation to give to the Board.
21 And those Board members who have not been privy
22 to the kinds of discussions that go on here are
23 relying on us I believe to make that very
24 decision.

25 **DR. WADE:** And let me say for the record that I

1 think the process that you all have engaged in
2 is outstanding. I think it is an appropriate
3 process. I think it's just a matter of
4 deciding how to manage is all. So maybe -- and
5 I don't think we're out of bounds at all. It's
6 something for you all to keep in mind as you
7 sort of move forward in this.

8 **MS. MUNN:** My -- My sense is we're nearing a
9 point where we have to make some of these
10 decisions, whether we're -- whether everybody
11 is completely happy with them or not.

12 **DR. MAURO:** I'd like to take it a step further.
13 I think NIOSH has come up with a strategy to
14 dealing with a situation where ICRP does not
15 have models but we do have empirical data. And
16 -- And it sounds to me that we have enough
17 empirical data so that if we could look at
18 enough cases we still have to get to the point
19 where you believe that there are adjustment
20 factors that could be applied. And this is
21 really what it comes down to. There are
22 adjustment factors that could be applied to the
23 models so that you can bound what the dose
24 might be to any particular individual, any
25 particular cancer. This is in essence what

1 we're talking about. The particular value you
2 pick, and the -- it's almost -- it's almost
3 like secondary to the SEC issue. In my mind, I
4 mean I don't know if anyone agrees with it but
5 in my mind, in a way, once we all have embraced
6 the philosophy that yes, going to these real
7 data for real people in the transuranic
8 registry and looking at and testing the
9 strategy against them and saying yeah, it looks
10 like it works, I think we're there. Now, what
11 I'm hearing is there may be some questions
12 regarding some particular organs with, you
13 know, the lymph nodes and whether or not they
14 pick the best strategy. But once you buy in on
15 the idea that you can do that and the data
16 exists out there at a level of precision that
17 doesn't leave you out in a void where you
18 really can't -- don't know what to pick, to me
19 we're -- we're beyond the SEC issue then. I
20 mean the SEC issue has been solved. Now, it
21 may rear its ugly head again during site
22 profile review. I'm not sure. It seems to me
23 that what we've done to date is not only engage
24 the SEC issue as best we can, but we have gone
25 a long way toward engaging the site profile

1 aspects of this issue also. And I think we're
2 -- we're trying to find a place where we're all
3 comfortable; where we can say, okay, I think we
4 can put this SEC part behind us and where we
5 have a little bit more to do. The only thing I
6 heard out of this discussion so far includes --
7 correct me if I'm wrong -- is that there's
8 still a little bit more room for discussion
9 regarding the lymph nodes. Other than that --

10 **MR. GRIFFON:** I mean I'll correct you a little.

11 **DR. MAURO:** Please.

12 **MR. GRIFFON:** Only a little.

13 **DR. MAURO:** Please.

14 **MR. GRIFFON:** But Joyce said she was going to
15 do more work on the USTR cases, too. She's
16 done three.

17 **DR. MAURO:** Okay.

18 **MR. GRIFFON:** So so far, you know, it looks
19 conservative and we all agree with that.

20 **DR. MAURO:** Let me take you --

21 **MR. GRIFFON:** You want -- You want complete
22 data.

23 **DR. MAURO:** Well, let me -- let's -- let's say
24 Joyce looks at a -- a number of additional
25 cases and ah, holy mackerel, you found one

1 that's worse. Let's say we run into one that's
2 worse, okay? A factor of four isn't good
3 enough. Where does that put us? Does that
4 mean we use a different factor number?

5 **MR. GRIFFON:** And then you'd -- and then you'd
6 run into that question of plausible, too.

7 **DR. MAURO:** And -- And plausible.

8 **MR. GRIFFON:** Don't start just throwing factors
9 around.

10 **DR. MAURO:** This is -- you see where we're
11 going. This is a very strange place where --
12 where -- where I think that you guys picked a
13 strategy that to date seems to work and -- and
14 -- and gets us to an upper bound that you still
15 feel is plausible but probably conservative to
16 most people but plausible for some. Okay. One
17 of the --

18 **DR. BEHLING:** Can I make a comment here?

19 **DR. MAURO:** Yes.

20 **DR. BEHLING:** Regarding the lymph nodes I was
21 looking through some of the ICRP documents and
22 at this point while they didn't give a
23 definitive number they did in fact make
24 comments such as the thoracic lymph nodes would
25 probably experience a dose that was at least

1 equal to or possibly greater than the lung.
2 Therefore the lung may serve as a surrogate
3 organ for estimating doses to the thoracic
4 lymph nodes as a default value.

5 **MR. GRIFFON:** Well, let's not -- Jim has an
6 answer for this so I think we'll just wait for
7 him.

8 **DR. NETON:** And that was my thought, Hans, you
9 know. If you can get to intake, then if you
10 put all the activity into the lymph nodes you
11 bound it. I mean --

12 **DR. BEHLING:** Yeah.

13 **DR. NETON:** You can't have it both ways but you
14 can certainly say it's all in the lymph nodes I
15 mean if you can believe our intake estimates.

16 **MR. GRIFFON:** And just to respond to -- to --
17 to John's thing. I think -- I mean I think
18 we're all seeing the same thing. I think we're
19 converging on this as Joe said. And I don't
20 think, you know -- I think we just need to
21 carry it through the last look at the design
22 cases, looking at a few more USTR cases and
23 then -- and then having an interim report.
24 And, you know, I think we're -- I think we're
25 close on all the sub-issues under this even.

1 But I think we need to, you know, complete that
2 component anyway. And I, you know, I think
3 that's where it has -- where we have to take
4 it. I don't expect any -- any -- I don't know.
5 I -- I mean I think we just carry it on
6 through.

7 **MS. MUNN:** I would feel more comfortable if we
8 had, for example, agreed on a general number of
9 -- of cases that we would feel comfortable
10 having Joyce review. I don't -- This again is
11 the how much is enough issue.

12 **MR. GRIFFON:** Well, there's only so many high
13 fired plutonium cases. How -- How many --

14 **DR. NETON:** Transuranic Registry has got a lot
15 of --

16 **MR. GRIFFON:** A lot of them?

17 **DR. NETON:** A lot of plutonium cases. I mean
18 there's a lot out there. See, I thought that -
19 -

20 **MR. GRIFFON:** Yeah, I mean --

21 **DR. NETON:** -- at the last Board meeting Joyce
22 had compared this model against Eckerman's
23 model, some Mayak models. It turned out we
24 were more favorable. I thought that was the
25 end of the issue to be honest you. And now

1 that we're going back into the Transuranic
2 Registry and validating cases that's fine I
3 suppose --

4 **MR. GRIFFON:** Yeah.

5 **DR. NETON:** But again, how far do we want to go
6 here? And like John said, it's quite plausible
7 there's going to be one analysis that's going
8 to maybe be an outlier maybe just based on
9 purely statistic -- for purely statistical
10 reasons as an outlier and then where does that
11 leave us? I don't know.

12 **MR. GRIFFON:** Well, I mean --

13 **DR. NETON:** In cases pick the highest, the most
14 dose --

15 **MR. GRIFFON:** I think where we left it at the
16 last Board meeting was that the analysis quite
17 frankly didn't go beyond the TIB's. I mean
18 that's where Joyce stopped and we just asked
19 her --

20 **DR. NETON:** (Unintelligible)

21 **MR. GRIFFON:** (Unintelligible) certainly case
22 data and that's where it ends I think.

23 **DR. NETON:** She cleared the ICRP models already
24 that Eckerman's put out, and postulating --

25 **MR. GRIFFON:** She did that model to model,

1 right. Right. She did that.

2 **DR. NETON:** -- Which is based on real data as
3 well --

4 **MR. GRIFFON:** Right.

5 **DR. NETON:** So you've got two cases of real
6 sets of data and now we're going back and
7 looking at the transuranic... It's fine. I
8 mean I certainly --

9 **MR. GRIFFON:** All we ask is that, you know, you
10 cite those in your TIB and I guess I pushed
11 this -- this issue maybe but all I said is
12 let's look at the design cases and -- and --
13 and some USTR cases. I think it's fair to ask
14 how many, you know, and that's why -- and I was
15 kind of leaving that up to SC&A and Joyce to
16 kind of -- but I agree we need an end point on
17 that.

18 **MS. MUNN:** Yeah.

19 **MR. GRIFFON:** I don't, you know --

20 **MS. MUNN:** And the other issue --

21 **MR. GRIFFON:** I don't want -- I don't want them
22 to look at every USTUR case.

23 **MS. MUNN:** And the other issue is so there's an
24 outlier.

25 **DR. NETON:** Right.

1 **MS. MUNN:** Do you know of any data set that
2 doesn't have outliers? You know, just because
3 you encounter one or two still does not
4 indicate that there is a systemic problem with
5 any of the data that exists in the uranium --
6 plutonium uranium registry.

7 **MR. GRIFFON:** This is just this level of
8 thoroughness I guess that we have to grapple
9 with as a work group that, you know, my feeling
10 is that if -- if -- if you find like these --
11 these unusual things that I found in the cases,
12 Roger -- Roger had explanations for them.

13 **MS. MUNN:** Yeah, he told you.

14 **MR. GRIFFON:** And that's good. And now we have
15 to weigh those. And the same thing with USTR
16 cases. If you have a lot of cases that Joyce
17 looks at that have a lot of abnormalities then
18 you start to maybe be concerned. But on the
19 other hand that's only being used as a
20 comparative -- it's not used in TIB 49
21 necessarily. You're comparing against that so,
22 you know, I don't even know if that's a big
23 thing but, you know, I guess that would raise
24 questions.

25 **DR. NETON:** I guess I would argue these are all

1 Rocky Flats cases. The design model is based
2 on all Rocky Flats cases.

3 **MR. GRIFFON:** Right.

4 **DR. NETON:** So that -- that's the best
5 population you can use.

6 **MR. GRIFFON:** Yeah.

7 **DR. NETON:** Now, if you find some other --
8 other -- other --

9 **MR. GRIFFON:** Well, actually the Hanford cases
10 --

11 **DR. NETON:** Well, the -- No, the Hanford case
12 was just one; they were equal.

13 **MR. GRIFFON:** Just the one case.

14 **DR. NETON:** They were equal to the Rocky Flats
15 design case and so -- but then you find some
16 ceramicized plutonium at Los Alamos that may
17 behave slightly differently. I'd say at this
18 point --

19 **MR. GRIFFON:** I mean I guess -- I guess the way
20 I would say, I still think maybe we'll leave
21 this to some extent to SC&A of how many USTUR
22 cases to take back but with the understanding
23 that we'd like an interim report on this issue
24 before the next Board meeting so that kind of
25 dictates how -- how many they're going to do.

1 They're not going to spend all their resources
2 in the next two weeks delving into this. I
3 think Joyce is going to say I've looked at
4 three or four more; they've all -- you know,
5 they're all conservative.

6 **MR. FITZGERALD:** Do you have any --

7 **MR. GRIFFON:** Let's write an interim report and
8 be done with it, you know.

9 **MR. FITZGERALD:** Joyce, do you have --

10 **MR. GRIFFON:** That's just where it's going to
11 go.

12 **MR. FITZGERALD:** Joyce, do you have any sense
13 right now -- I think you were saying into next
14 week. How many cases do you see in that?

15 **DR. LIPSZTEIN:** I -- I don't know how many
16 because I have -- I'm now looking just at the
17 highest ones and I think I -- I'm going to just
18 look at the highest ones because the model that
19 is proposed is not really a model. It's an --
20 it is a like adjustment factors instead of
21 models which is okay. No problem with that.
22 But based on the highest possible amount in
23 system -- in the lung. So I have to look at
24 the -- the highest lung burden that have in
25 those cases and I think that Bob is now helping

1 me to choose the -- will help me to choose the
2 cases. He just gave you the one that was the -
3 - the worst exposed person to look at. And
4 then that's like I'm doing now so I think we --
5 we -- I feel pretty comfortable for -- for now
6 with -- with the -- the -- with the adjustment
7 factors that were proposed. I didn't see
8 anything that was against it, you know. All of
9 the data are favorable to the -- to the
10 proposed adjustment factors.

11 **MS. MUNN:** Yeah, boy.

12 **DR. LIPSZTEIN:** And now everything is good and
13 as Jim said, I -- if I compare Eckerman's model
14 for Mayak and these adjustment factors, the
15 adjustment factors, these are much higher dose
16 and a much higher content in organs than the
17 Eckerman's model. In Mayak they had very, very
18 high exposure, probably higher than at Rocky
19 Flats.

20 **MS. MUNN:** That certainly should get us into
21 bounding cases. Yeah. Thank you, Joyce.

22 **MR. GRIFFON:** All right. So I think, you know,
23 we don't know exactly how many more cases but
24 it's not going to be all the cases certainly.

25 **DR. MAURO:** What we're gonna do --

1 **MR. GRIFFON:** Right.

2 **DR. MAURO:** What we'll do is we're going to --

3 **MR. GRIFFON:** Some of the highest ones.

4 **DR. MAURO:** We're gonna show you what we have
5 and deliver a report in a timely fashion --

6 **MR. GRIFFON:** Right.

7 **DR. MAURO:** -- so you'll have a chance -- the
8 working group will have a chance to look at it.
9 You'll see how many cases we looked at and --
10 and you'll also have a sense whether, you know,
11 that's good enough, too. Rather than say how
12 many we're going to do --

13 **MS. MUNN:** Yeah.

14 **DR. MAURO:** -- we're going to do as many as we
15 can within a relatively short period, a time
16 period that will allow --

17 **MR. GRIFFON:** Right.

18 **DR. MAURO:** -- you folks to deliberate a bit
19 before the Washington meeting.

20 **MR. GRIFFON:** And use your judgment on your
21 resources.

22 **DR. MAURO:** And where our resources should go.

23 **MR. GRIFFON:** Right. Right.

24 **MR. FITZGERALD:** I think the key thing is to
25 manage that issue --

1 **MR. GRIFFON:** Yeah.

2 **MR. FITZGERALD:** -- such that it makes sense.

3 **MR. GRIFFON:** Right.

4 **MR. FITZGERALD:** There's a rhyme or reason for
5 what we're doing.

6 **MR. GRIFFON:** And are we done with this Super S
7 issue? I think we're done for now. We're
8 going to get the interim report and Jim's going
9 to follow up on the one lymph node issue. Can
10 I ask for a comfort break? I know some people
11 have been walking away but I haven't been able
12 to. So maybe just ten minutes and we'll
13 reconvene in ten minutes.

14 **MS. MUNN:** Fine.

15 (Whereupon, a brief recess was held from 11:25
16 a.m. to 11:40 a.m.)

17 **NEUTRON DOSE RECONSTRUCTION**

18 **MR. GRIFFON:** Okay. Everyone on the phone,
19 we're reconvening now. A little more than 15
20 minutes but Ray was a little late again.

21 (Group laughter)

22 **DR. WADE:** Let the record show.

23 **MR. GRIFFON:** These are casual. These are
24 working groups, right?

25 **THE COURT REPORTER:** That's right.

1 **MR. GRIFFON:** We're going to move on to the
2 second item, neutron dose reconstruction. And
3 Joe Fitzgerald, the SC&A team just handed out a
4 -- an analysis -- internal draft of SC&A's
5 review of external dose issues and NIOSH's
6 evaluation report. So this -- this is going to
7 overlap from what I understand some neutron
8 issues but also it might get into some of the
9 external dose data reliability questions.

10 **MR. FITZGERALD:** Yeah, let me preface first
11 off, certainly apologize for just handing this
12 out. Ron's been working this issue for a
13 couple weeks and we were trying to get a --
14 some information together for this discussion
15 today. And I thought it would be helpful to
16 have what he's produced as far as a working
17 draft available as he talks through. I think
18 he's done a good job of frankly distinguishing
19 what we think are some questions. I wouldn't
20 call them issues but questions that have SEC
21 implications, being data reliability
22 implications from that which I think we have
23 settled out in past meetings. We're not going
24 to revisit those. He identifies them. This is
25 sort of a -- a pre-piece for the evaluation

1 that we're going to generate so if they're in
2 here we're not going to bring them up. They're
3 just cataloged as issues that have been
4 resolved. And these also get into external --
5 external dose assessment. This piece covers I
6 think the waterfront as far as the external
7 dose side goes, the co-worker dose model and
8 all the rest. So I'm going to turn it over to
9 Ron to kind of focus really on the questions
10 that I think you've developed in this analysis
11 that deal with issues that might have some SEC
12 implications if in fact they're borne out as
13 uncertainties or areas where the data may be in
14 question. So we're going to just focus on that
15 and not get into the other items that are in
16 this piece. But for completeness you have it
17 all at this point.

18 **MR. BUCHANAN:** Okay. Okay, Joe. Do you want
19 me to just go down the -- on the main ones that
20 I feel could have SEC implications?

21 **MR. FITZGERALD:** Yes, please.

22 **MR. BUCHANAN:** If you read through this five-
23 page summary, like Joe says, a number of these
24 issues we've addressed in the past and we --
25 SC&A had some questions on them. We came back

1 and chewed on some of them and have addressed
2 them to our satisfaction that they'd probably
3 be site profile issues; however not necessarily
4 SEC issues. Now, there are two items though
5 that we still struggle with as far as SEC --
6 possible SEC issues and that's two items and
7 I'll identify those, and perhaps we can discuss
8 them and see how we could resolve them. Number
9 one is the fact that on page one, table 1 --
10 might be page two on your report -- we see that
11 in '69 and '70 we had a number -- a higher
12 number of zeros in our data entry than we did
13 the previous or the following years, 36 percent
14 for the average of ten percent. That's one
15 major issue I'd like to address. The other
16 major issue is that I looked over the -- the O-
17 TIB's 58 and of course the related O-TIB's 50
18 and NDRP report, and the question, the main
19 concern I have with there is the earlier data.
20 Now, I did go see on the O-drive you posted
21 some I think around the first of -- in April on
22 the -- some real data for individuals for '52
23 through '05. I looked at that data and the
24 problem is it doesn't separate out the neutron
25 and photon dose and I need to look at the

1 neutron dose and photon dose separately to see
2 how many neutron -- how much measurements was
3 done in '52 and '53, '54, '55 with the neutron
4 doses and what departments those were in to
5 determine if we can reconstruct the dose. And
6 so those are the two issues I'd like to address
7 today. Now, does anyone or has anyone looked
8 at or anyone could explain why the '69 and '70
9 data entries were so many zeros compared to the
10 previous or the post-era?

11 **DR. ULSH:** Well, my first reaction, Ron -- this
12 is Brant Ulsh, and I'm going to rely on Roger
13 and maybe Bob to talk about how credible or
14 incredible this might be, but the big fire
15 occurred in '69 and that pretty much ground
16 production activities in the plutonium building
17 to a halt after that fire and during the
18 cleanup stage. And those production workers
19 were reassigned to I believe the 850 cafeteria.
20 I had a conversation with Bob over the break.
21 And so you might expect that their doses would
22 be -- those are some of the higher dose people
23 but those doses would be low or zero. Now, I
24 don't know, Roger and Bob, does that sound like
25 a credible scenario or --

1 **DR. BISTLINE:** Roger, what's your thought on
2 thought -- thought on that?

3 **MR. FALK:** Yes, that is -- that is credible.
4 That would be the workers who were actually
5 assigned to building 7 -- 777 and 776. And
6 they were -- they were stationed there until
7 they could be reassigned to -- they -- until
8 they could be reassigned to other areas. But
9 yes, they -- some of those workers were there
10 for -- for probably -- for probably several
11 months.

12 **MR. BUCHANAN:** Wouldn't have this been -- now,
13 see, I guess the fire was like in the second
14 quarter of '69. Would have this extended in
15 through the year 1970? You know, would it --
16 would it last say six quarters of this
17 reassignment with no plutonium work?

18 **MR. FALK:** That is possible for some of the
19 workers. Also keep in mind in the summer of
20 1970 there -- there was a strike in the summer.
21 I'm trying to recall when it was. It was
22 probably for a month or two so that was another
23 discontinuity.

24 **DR. ULSH:** The only other event that comes to
25 my head, and I'm not sure that it would be

1 relevant to this, is the transition from film
2 badge to TLD. That occurred right around this
3 time frame, too, didn't it, Roger or Bob? But
4 I can't see why that would impact the number of
5 zeros. I'm just saying that that was --

6 **MR. FALK:** Yeah. We -- We -- We converted
7 the -- the plant to the beta gamma TLD's in
8 1970 but I don't think that would really affect
9 these zeros.

10 **DR. BISTLINE:** That would be my feeling, too,
11 Roger.

12 **DR. BEHLING:** This is Hans Behling and I do
13 have a comment on that issue. And is it
14 possibly that the duration of the wear period
15 was shortened significantly, especially when
16 you have a radiological crisis that you're
17 concerned about and the potential for exceeding
18 admin limits et cetera, that oftentimes what
19 happens is that you assign daily batches or go
20 from monthly to weekly or very short duration
21 meaning that if these people were exchanged
22 very quickly and -- and frequently that you
23 would have a series of batch cycles that simply
24 never reached the -- the limit of -- of
25 detection. And therefore you end up with a

1 quarterly dose that is zero.

2 **DR. ULSH:** Well, that sounds credible to me but
3 I don't know --

4 **MR. GRIFFON:** Is -- Is -- Actually -- I guess
5 I'm just wondering if there's a way to take
6 this to -- to completion. Is there any way
7 that we can check -- I don't recall if the
8 database has information on the building that
9 we could see, building 777/776 and compare
10 before and after the fire time frame and see if
11 the number of zeros is -- is consistent or if
12 it increases as that might -- that might
13 support your scenario. But I don't know if
14 that information exists in the database even,
15 if there's building -- I kind of doubt it
16 actually.

17 **DR. BEHLING:** It's not --

18 **DR. MAKHIJANI:** Well, Mark, it may not be a
19 question of zeros. Kathy Demers found that
20 there were gaps, nothing in the individual dose
21 records from those years for deep dose I think.
22 Is that what you were saying, Joe?

23 **MR. FITZGERALD:** Actually I think -- I think it
24 was no data, wasn't it?

25 **DR. MAKHIJANI:** No data.

1 **MR. GRIFFON:** But that could mean they were
2 reassigned.

3 **DR. ULSH:** I don't know. We were looking at
4 this last week. Kathy identified two
5 individuals, and I would caution everybody, you
6 may have to respect privacy acts. There were
7 just two individuals that we looked at their
8 RAD files and they appeared to have, you know,
9 results for all the years prior to and after
10 1969 but there was just nothing there for 1969.
11 As of now I don't have an explanation for that.
12 We are looking into it. Unless anything has
13 happened over the weekend, any -- any of my
14 team members out there?

15 (No response)

16 **DR. ULSH:** Okay. I think at the end of the
17 last weekend it appears to be the case now. We
18 didn't yet have an explanation for it so we are
19 still looking at that.

20 **MR. BUCHANAN:** Okay. I have a question. Is
21 Joyce still on the line?

22 **DR. LIPSZTEIN:** Yes, I am.

23 **MR. BUCHANAN:** On any of the bioassay did you
24 see the same scenario there? Did you have more
25 zeros or less MDA's there in '69 and '70 than

1 you did the prior or following five year or
2 have you looked at that?

3 **DR. LIPSZTEIN:** I didn't -- no, I didn't notice
4 anything. No.

5 **MR. BUCHANAN:** Okay. Could -- Could you --
6 Joyce, how much of a job would it be to send me
7 this -- a summary like I have? Do you have a
8 copy of what we're talking about in front of
9 you?

10 **DR. LIPSZTEIN:** No. No, I don't.

11 **MR. BUCHANAN:** Okay. I could send you this and
12 ask if you could do a quick compilation and see
13 if -- if the internal dose fills a similar
14 pattern or not.

15 **DR. LIPSZTEIN:** Okay.

16 **MR. BUCHANAN:** Okay.

17 **DR. LIPSZTEIN:** I'll do that today.

18 **DR. BEHLING:** This is Hans again. This is a
19 question for Ron. Ron, are the doses for those
20 years prior to '76 still only quarterly doses
21 that we assume were the composite of multiple
22 cycles possibly of expo-- of monitoring?

23 **MR. BUCHANAN:** Those are -- those are, yeah,
24 yearly doses. Just the sum of the total
25 penetrating yearly doses.

1 **DR. BEHLING:** But they were reported as
2 quarterly doses prior to '76; is that correct?

3 **MR. BUCHANAN:** I think so. I'm not sure
4 exactly how they were recorded. If there's --
5 I'd have to look up the database but I think
6 that that's true. Some of them were annual
7 doses and some of them were by quarter.

8 **MR. LANGSTED:** This is Jim Langsted.
9 Dosimeters were changed on a variety of
10 frequencies during those periods. The problem
11 is that the data was rolled up into quarterly
12 totals which is the only thing that survived in
13 the database. It's not true to say that --
14 that the data was reported on quarterly basis -
15 - a quarterly basis. That's just all we have
16 at this point.

17 **DR. BEHLING:** Yeah, and that was my -- my -- my
18 statement is that during a radiological crisis
19 oftentimes what happens is that you do tend to
20 shorten the wear cycle to a much lower --
21 shorter period meaning that you're likely to
22 report more frequency -- higher frequency of
23 below LOD readouts meaning that you may have a
24 person who is -- who is monitored weekly now
25 and you just have 52 or 13 zero recordings for

1 a quarter meaning that he ends up with nothing
2 because of the fact that he was monitored on a
3 weekly basis instead of a monthly or quarterly.

4 **MR. BUCHANAN:** I could see that in 1969. I
5 don't know if that sort of crisis would have
6 extended all the way through '70 though.

7 **DR. BEHLING:** Well, the question is to what
8 extent were some of these workers used for
9 cleanup?

10 **MR. BUCHANAN:** I don't know.

11 **MR. GRIFFON:** So we -- we -- we've put the
12 issue out there. I think -- I don't know that
13 we can take, you know -- we can speculate here
14 all we want but I think we need to look into
15 this issue.

16 **DR. WADE:** Do we have a new member of the team
17 at the table?

18 **DR. ULSH:** Yeah, I'll introduce him. This is
19 Craig Little. He just arrived. He is part of
20 the ORAU team. I guess we'll do the normal
21 conflict. I don't think you have any
22 conflicts.

23 **MR. LITTLE:** I have no conflicts with Rocky
24 Flats.

25 **DR. ULSH:** Craig is sitting in for Bob Meyer

1 who is the TBD team leader, and Bob is out of
2 the country right now.

3 **DR. WADE:** All right. Thanks.

4 **MR. BUCHANAN:** I did have a question. When we
5 were talking about what's available on a yearly
6 or a quarterly basis. Can someone answer the
7 question, do we have the quarterly records all
8 the way back to '52 or some of those yearly
9 doses?

10 **DR. WADE:** Could you repeat the question,
11 please?

12 **MR. BUCHANAN:** Do we have the quarterly doses
13 available all the way back to '52 or are some
14 of those only available on a yearly basis?

15 **MR. LANGSTED:** Well, I believe some of the
16 early data was -- is only available on a yearly
17 basis. This is Jim Langsted.

18 **MR. BUCHANAN:** Okay.

19 **MR. GRIFFON:** And Ron, did you -- to go back to
20 the other primary issue that you raised or
21 question that you raised, was that on the
22 rolled up data and how to separate up a neutron
23 and gamma? Was that your other -- other
24 primary question or -- or --

25 **MR. BUCHANAN:** Yes. The second of the two main

1 issues was the '69/'70 zeros and the second
2 issue was on the '52 through '57 especially
3 when they used mainly the neutron track plates
4 rather than the MPA film. I need to be able to
5 look at the details of the neutron dose each
6 year, individual. I don't need their Social
7 Security number or anything but I need how --
8 how many neutron measurements were actually
9 reconstructed during the NDRP project for each
10 year and hopefully some kind of identification
11 with them and then building number because I
12 need to look to see the validity of their
13 intake neutron dose. See, because in O-TIB's
14 58 which created table 7-1, and we get a 50 and
15 a 95th percentile on the penetrating dose which
16 is neutron plus gamma and I need to look at the
17 details of the neutron dose on that and what's
18 the present data on O-drive does not have that
19 broken down. And so what I'd like to know is
20 can -- can that be provided so that I have the
21 neutron -- individual neutron and gamma results
22 for each year and the building number?

23 **DR. ULSH:** Now, is that from the NDRP that
24 you're talking about, Ron?

25 **MR. BUCHANAN:** Well, no, this is -- it's

1 summarized in O-TIB's 58 in table 1, and it
2 lists 1952 through 00 -- 2005, the penetrating
3 dose, the 95th and the 50th percentile. And on
4 the O-drive they post it, the composite dose
5 but there's no separation of the neutron and
6 gamma dose. And what I need is table 7 -- what
7 I need is the individual doses, like there was
8 like 42 doses or something recorded in 1952. I
9 need to be able to go in there and look at what
10 the neutron component was and what the gamma
11 component was for each worker for that year.
12 And the -- especially '52 through '57 when NTP
13 plates were used.

14 **DR. ULSH:** Okay. I think I understand what
15 you're asking for, and I will try to get that
16 for you.

17 **MR. BUCHANAN:** And if --

18 **MR. FITZGERALD:** You're really working off
19 table 7-1?

20 **MR. BUCHANAN:** Right. I need -- I need to
21 break down 7-1 to see the details. I want to
22 see how many neutron monitoring say was done in
23 1952 or 1953 a year to see if the number they
24 give here is -- is valid, you know. If there
25 was just one measurement, well, this number

1 isn't very statistically valid. If there was
2 100 measurements it's useable. And I need to
3 see what the numbers were, what the range were
4 and what buildings they were in because I'm
5 concerned about 771, if there was any badging,
6 even empty plates in those in the early years.

7 **DR. BISTLINE:** Roger, do you have that
8 information on those 18 people that had neutron
9 badges between 1951 and 1957?

10 **MR. FALK:** Well, that's probably part -- that's
11 probably part of the NDRP database.

12 **DR. BISTLINE:** Yeah.

13 **MR. FALK:** But I'm thinking -- I'm thinking
14 that all of this might be moot because --
15 because the NDRP data would basically take
16 precedence over the old data, especially for --
17 especially for -- especially for the -- the
18 neutrons.

19 **DR. MAKHIJANI:** Which -- Which data? Sorry.
20 I did not get that, Roger.

21 **MR. FALK:** The NDRP data.

22 **DR. BISTLINE:** We're talking dose
23 reconstruction data because there were only 18
24 -- 18 people that were monitored from 1951 'til
25 1957, neutron monitored. And -- And that was

1 **DR. BISTLINE:** Yes.

2 **MR. FALK:** Right?

3 **DR. BISTLINE:** Yes.

4 **MR. FALK:** For the 18 or whatever that number
5 was in '56 and '57.

6 **DR. MAKHIJANI:** But Roger, I thought that no
7 people from the 71 building were monitored up
8 to '57; is that correct? Or '65 -- what was
9 the year?

10 **MR. FALK:** The year is 1957 when they started
11 to -- to use the NTA film. But I don't think
12 any building 71 person was monitored with the
13 glass plate method.

14 **DR. BISTLINE:** I don't either.

15 **DR. MAKHIJANI:** So how do we get to the neutron
16 photon ratio for the '52 to '57 period?

17 **MR. FALK:** You back extrapolate from the year
18 when we do have data which is actually 1959.

19 **DR. MAKHIJANI:** Assuming that all of the
20 working conditions were the same, so that's
21 sort of of a --

22 **MR. FALK:** That is a basic assumption.

23 **DR. MAKHIJANI:** Right.

24 **DR. ULSH:** Or at least the conditions that
25 would affect the neutron to gamma ratio.

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

2 **DR. MAKHIJANI:** Yeah.

3 **MR. BUCHANAN:** Yeah. And the neutron energy
4 spectrum. If -- If we didn't have any -- if
5 we only had 18 badges in '56 and '57 at
6 building 71 then we're going to have to use the
7 neutron plate information for the earlier years
8 for that building. And we have to assume that
9 the neutron energy spectrum was similar between
10 the other buildings and 71 during earlier
11 years. Would anybody care to comment on that?

12 **MR. FALK:** Well, yes, it turns out that -- it
13 turns out that I don't think you would use the
14 neutron plate data which is building 91 to --
15 to determine neutron gamma ratios for the
16 building 71 workers. Those ratios still need
17 to be back extrapolated from the 1959 data.

18 **MR. BUCHANAN:** Okay, Roger. What about the
19 actual dose? According to table 7.-- 7-1 we're
20 going to use the neutron plate data from
21 building 91 to assign unmonitored doses to
22 building -- workers in building 71 during the
23 early years when they weren't monitored. Do
24 you have comments on -- on the difference --
25 the similarity or difference between the -- the

1 neutron doses workers would receive in '91
2 compared to '71 during the early years?

3 **MR. FALK:** I would think they're -- they're
4 likely to be different and I'm kind of
5 surprised that -- I'm surprised that the O-TIB
6 58 has that statement in there. That is not
7 what I would recommend.

8 **DR. BISTLINE:** Yeah, those processes were
9 totally different in 71 -- in building 71.
10 That was a chemical process with fluorination
11 associated with it. In '91 it was -- it was
12 final assembly of components and that -- and so
13 there -- there'd be a total -- I mean a total
14 disconnect there.

15 **MR. GRIFFON:** Ron, can you give us a reference
16 in O-TIB 58 what page that's on and --

17 **MR. BUCHANAN:** Okay. Is anybody there that's -
18 - that wrote 58 or is more familiar with it
19 that has detailed information on it? We
20 understand O-TIB's 58 is that they're going to
21 use table 7-1 on page 10 to reconstruct neutron
22 doses to all unmonitored workers at Rocky Flats
23 throughout the years, so 1952 to 2005. And
24 that -- they give steps one through five in
25 section seven from page eight and nine and then

1 the final table on 7 -- 7-1 and 7-2. 7-2 is
2 the gamma only and the 7-1 is the composite
3 neutron plus gamma. You know, correct me if
4 I'm wrong but I understand the use of table 58
5 is -- is for everybody that worked at Rocky
6 Flats during those years and that would include
7 building 71 which did not have any neutron
8 monitoring per se other than maybe 18 total
9 plates. So they would use -- be using the
10 neutron track plates from building 91 to do a
11 co-worker model dose.

12 **DR. ULSH:** Unfortunately, Ron, I think you're
13 probably the one person around the table or
14 around the call who knows more about TIB 58
15 than anyone else. The guy who wrote this I
16 think is Matt Smith.

17 **MR. BUCHANAN:** Correct.

18 **DR. ULSH:** He is not on the call.

19 **MR. BUCHANAN:** Uh-huh.

20 **DR. ULSH:** So I'll have to follow up and get
21 back to you --

22 **MR. GRIFFON:** Follow up on this, okay.

23 **MR. BUCHANAN:** Okay.

24 **DR. ULSH:** On that question.

25 **MR. BUCHANAN:** That's the way I understand O-

1 at this point on these -- these years.

2 **DR. MAKHIJANI:** You know, Brant, it might be
3 very useful if we could know that, you know,
4 that -- I also know that as Ms. Munn did, that
5 the -- the percentage of zeros again goes up in
6 the -- in 1977. Wasn't there sort of a change
7 in the monitoring practices from '77? And so
8 if you could have this badge exchange
9 frequency, that type of issue that Hans has
10 raised, there may be a clearer explanation or
11 maybe a different explanation for the later
12 zeros. The 1990's clearly though was
13 production, so the high number would be
14 explained by the fact that there's no
15 production. But the '70's numbers are not so
16 clear.

17 **DR. ULSH:** Well, I know that in -- okay, Jim
18 Langsted, you might have to jump in here. But
19 in '77 -- after '77 -- okay, from '77 forward,
20 that's the years when they stopped doing the
21 rollup; is that correct, Jim?

22 **MR. LANGSTED:** Yeah, the recordkeeping changed
23 in about 1976 is when they implemented the --
24 well, they implemented a computerized data
25 keeping that we -- that we have the records on.

1 But again that's quarterly data. There was not
2 -- I don't believe there was a change in the
3 dosimetry -- the dosimeter hardware at that
4 point. It was a records keeping.

5 **MR. ROBINSON:** This is Al Robinson. I know
6 that in the TBD it does say that from '77 on
7 that all of the cycles that were read were
8 reported and that's been the way we've handled
9 it from '70 to '76 or prior to '77 we -- that
10 there was only rollup data. However, from '77
11 on we assumed that -- that the cycles are
12 there. And so that would -- could explain why
13 you see so many more zeros in '77 on.

14 **MR. BUCHANAN:** Well, I understand from what I
15 read that's the way I understand that it was
16 done also.

17 **DR. MAKHIJANI:** Could a column of the number of
18 badge exchanges be added to this? I guess we
19 could -- we could because that would clarify
20 it.

21 **MR. BUCHANAN:** Yeah. We don't really have that
22 information --

23 **MR. ROBINSON:** We don't have that.

24 **MR. BUCHANAN:** -- for earlier before '76 and
25 '77.

1 **DR. ULSH:** Jim, you're -- you're familiar with
2 this 20 and the -- the databases that we have.
3 Is that a -- an easy thing to do?

4 **MR. LANGSTED:** I'd have to look at that. I
5 can't tell you -- tell you right now.

6 **DR. ULSH:** Okay.

7 **DR. WADE:** This is Lew. We're very pleased to
8 have with us -- a petitioner has joined us.
9 Would you, Tony, identify yourself?

10 **MR. DEMAIORI:** Yeah, I'm Tony DeMaiori. I'm
11 the primary petitioner on behalf of the United
12 Steelworkers.

13 **DR. WADE:** Welcome, Tony.

14 **DR. ULSH:** We -- We'll take a look, Arjun.

15 **MR. GRIFFON:** Yeah. So I don't think we can
16 answer that right now but we're -- we're going
17 to look into that. And NIOSH just received
18 this so we don't expect an answer on the fly.

19 Anything else in this document, Ron, that --

20 **MR. BUCHANAN:** Not -- Not SEC concern. I --
21 I think that those are the two main issues.

22 **DR. MAKHIJANI:** Can I ask Roger a question
23 about the '52 to '57 period? Because I didn't
24 know this one thing that you said that 10 to 20
25 people were monitored but they wouldn't be the

1 same people necessarily. So you have a certain
2 number of badges but maybe you don't have
3 complete dose records for any one person? And
4 so you don't have a good neutron dose record
5 for like a particular job? Or how can we know?
6 Can we establish the representativeness of the
7 work of -- of how these badges actually relate
8 to individual workers? I looked at the NDRP
9 report some time back so part -- part of my
10 question, you already answered it but it's been
11 a couple of months since I looked at it.

12 **MR. FALK:** Well, that was kind of before my
13 time. I was in grade school and later in high
14 school during that time. But -- But -- But
15 looking at the records it seems like they chose
16 the people as being the most likely ones to
17 actually receive the highest neutron doses.
18 And so that was the basis for essentially
19 determining the 10 to 20 people who would be
20 issued the neutron dosimeter during that month.
21 And so it's probably not so much a cross-
22 section representativeness as more of the
23 bounding type of a situation.

24 **DR. MAKHIJANI:** Do we have any documentation
25 for that or is it kind of --

1 **MR. FALK:** Nothing -- Nothing that says that
2 explicitly but the rosters do change just a
3 little bit from month to month. And that is
4 certainly the way that other sites essentially
5 did it also. When you only have a small number
6 of the dosimeters to be issued, you want to
7 issue them to the people who are at the highest
8 risk during that month. That seems to be
9 standard practice.

10 **MR. GRIFFON:** Hey, Ron, I wanted to go back to
11 the -- the issue you just raised, '52 to '57,
12 building 771 neutron photon ratios. And on
13 matrix -- matrix item number 23. I don't know
14 if you have that in front of you.

15 **MR. BUCHANAN:** Yeah.

16 **MR. GRIFFON:** We visited this issue before and
17 the response I thought we got in a work group
18 meeting and -- and in this matrix resolution
19 column is that there were O-TIB 50 contained
20 building specific and time specific ratios. Is
21 that --

22 **DR. ULSH:** The NDRP.

23 **MR. GRIFFON:** The NDRP, I'm sorry. The NDRP.
24 Did I say --

25 **MS. MUNN:** You said O-TIB.

1 **MR. BUCHANAN:** Yeah, and -- and -- and that's
2 good. I need to go back -- what I'm saying is
3 I need to go back and look at -- at those
4 neutron entries in the neutron data for the
5 workers to see how many was entered each year.

6 **MR. GRIFFON:** Right.

7 **MR. BUCHANAN:** And the range to see if it's
8 appropriate to do co-worker models using that
9 approach. And -- but yes, it's true they
10 entered that and -- and, you know, like Roger
11 was saying, they were -- there was monitoring
12 each month or whatever period they chose at
13 different buildings. Now, when we talk about
14 only 18 being monitored, that was only building
15 771, and so I need to look at what buildings
16 these were -- were monitored at, too, the NTP's
17 were -- were used at.

18 **MR. GRIFFON:** Okay. I just wanted to relate --
19 I think it's related to that, matrix number 23,
20 item number 23.

21 **MR. BUCHANAN:** Yeah, the NDRP does provide that
22 overall information but it -- I don't have the
23 -- I can't get to the individual data and
24 that's what I'm requesting.

25 **MR. GRIFFON:** I got you. And is there anything

1 else? Have we hit on all the issues in the --
2 in the report you just handed out, Ron? Any
3 other SEC issues?

4 **MR. BUCHANAN:** Yes, uh-huh.

5 **MR. GRIFFON:** Anything else on the general
6 topic of neutron dose -- under the neutron dose
7 reconstruction topic?

8 **DR. WADE:** Could I propose just a brief summary
9 of what the SEC issues are in this document for
10 Tony's purposes since he just joined us? Ron,
11 could you again --

12 **MR. GRIFFON:** Yeah.

13 **DR. WADE:** -- just repeat your two questionable
14 issues?

15 **MR. GRIFFON:** Just those two.

16 **MR. BUCHANAN:** Okay, yeah. For Tony's sake.

17 **MR. GRIFFON:** Yeah.

18 **MR. BUCHANAN:** This is Ron Buchanan and I've
19 reviewed the neutron doses at Rocky Flats and
20 just Friday I summarized our position on that
21 and sent it to Joe Fitzgerald which handed out
22 the sheets this morning. And not everybody has
23 had a chance to digest this yet but essentially
24 it goes down all the issues that we have
25 raised, most of the major issues, and

1 determined which ones were SEC issues and which
2 ones were not, and which would just be site
3 profile issues. And the two site profile
4 issues -- I mean the two SEC issues we have
5 identified with the information we have
6 available at this time are are -- there's two.
7 Number one, we want to discuss why there was a
8 abnormal -- a high number of zeros there in
9 1969 and 1970 in the -- in the data entries.
10 Not abnormally high compared to later years but
11 abnormally high for those two years compared to
12 the five years adjacent to them. That was
13 number one. There might be some explanation
14 that they just put out. We wanted to discuss
15 that. And number two was I needed to look at
16 the detailed worker doses in the 1952 to 1957
17 time frame to determine if the co-worker model
18 can be used for the workers to assign doses to
19 those that weren't monitored for neutron doses
20 in those early years. And so those are the two
21 pending possible SEC issues that we have not
22 resolved at this point.

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

24 **MR. BUCHANAN:** Okay.

25 **MR. GRIFFON:** Okay. If there's nothing else on

1 the neutron topic I think we still have some
2 time. I was going to break for lunch at 1:00
3 o'clock but I think we want to go into --

4 **MR. FITZGERALD:** I guess I would just add one
5 thing. In the context of our discussion
6 earlier we would also build on this in terms of
7 trying to provide the working group a interim
8 report. I mean you're seeing probably a lot of
9 it here but assuming we get some answers to the
10 questions, we'll build on that and provide
11 that. We would plan to provide that certainly
12 by the meeting, probably before the meeting.

13 **MR. GRIFFON:** That makes sense.

14 **MR. FITZGERALD:** Yeah.

15 **OTHER RADIONUCLIDES**

16 **MR. GRIFFON:** Then to move on to the next topic
17 I have on my abbreviated agenda is other
18 radionuclides. And primarily the one we've
19 been discussing quite a bit from the matrix was
20 americium, but I think there's a few others
21 that SC&A wants to remind us that were on -- in
22 the original matrix and we don't want to lose
23 site of them so --

24 **MR. FITZGERALD:** Yeah, this was --

25 **MR. GRIFFON:** I'll turn it over to Joe.

1 **MR. FITZGERALD:** Yeah, this -- this was
2 circulated about a week ago. It was a piece
3 that Arjun summarized and we circulated to the
4 Board and to NIOSH as a discussion piece
5 almost. And you should all have a copy of it.
6 I guess if you don't we can make copies but --
7 does everybody have that?

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

9 **MR. FITZGERALD:** Okay. Do you want to --

10 **DR. MAKHIJANI:** Yeah, I -- I looked at the
11 evaluation report for what it said about the
12 other radionuclide and also the TBD, to pick up
13 that matrix item and try to see, you know, what
14 the SEC-related pieces of it were so we could
15 address it. NIOSH had said that for these
16 other radionuclides the gross alpha -- I'm
17 putting americium in there but I'll cover it
18 separately. Generally the -- the -- the
19 approach had been that the gross alpha
20 urinalysis and the most conservative
21 radionuclide could be chosen for that organ.
22 And what I found and what is stated in part B
23 of the memo, and I don't know whether I'm
24 interpreting this properly, but gross alpha
25 data are only available in what used to be

1 called plant B and plant D. But not for plant
2 -- sorry. Not -- No. Yes. Not for plant C
3 or plant A. And so I was -- it does seem that
4 the other radionuclides as listed in the
5 memorandum would work in the plants for which
6 no gross alpha data appears to be available. I
7 looked at americium in some more detail. There
8 are two issues that have arisen in relation to
9 americium which is how are we dealing with the
10 -- the plutonium in vivo measurements in the
11 plutonium streams where americium was depleted.
12 Specifically the issue that we raised before
13 was when you get aged, recycled uranium that's
14 already depleted, the first time around has
15 gone out and it's depleted in plutonium 241 and
16 so it has very little americium when it comes
17 back even though it's decayed. What happens
18 when that is purified? And Roger Falk had
19 given the answer that the production
20 specifications were that a certain amount of
21 plutonium 241 ratio had to be maintained and so
22 that -- that issue would not arise. You would
23 never get -- send out plutonium with very low
24 plutonium 241 as a product out of Rocky Flats,
25 so then you would not get something with very

1 low americium to start that in the return
2 component. Now, that explanation on reflection
3 seems to be a reasonable explanation. The only
4 issue raised here is we've not evaluated this
5 explanation, looked at the documents or
6 reviewed it in any way. Theoretically it seems
7 to be on the face of it a reasonable
8 explanation. It seems like if we were to
9 review it a classified investigation would be
10 necessary obviously because you have to get
11 into production specifications and so on so we
12 haven't done it because the Board -- Board
13 hasn't authorized it. So that's kind of an
14 issue for the working group and the Board to
15 deal with. The other americium issue which is
16 more directly -- which is not a in principle
17 settled issue as yet relates to the waste
18 streams where americium was concentrated and
19 the americium production itself that happened
20 until the late 1970s. And there's a separate
21 section in this little memorandum on that.
22 There are some questions regarding the
23 americium bioassay data which, well, there are
24 several parts. Americium bioassay, first of
25 all, began in 1963 so there's a gap between the

1 time that americium production was being done
2 starting in '57 -- '58 -- anyway in the late
3 '50s and 1963. And then there are some
4 questions about the interpretation of the
5 bioassay data in relation to americium. Later
6 on there -- there are -- there are five areas
7 that are identified in the site profile where
8 this issue would arise. We've delineated those
9 five areas. For the in vivo counts there is
10 the question of interpretation of in vivo data
11 until more sensitive detectors were used which
12 would be up until 1976. So there's a question
13 about whether we have adequate -- for sodium
14 iodide and then (unintelligible) detectors were
15 used. And Hans helped me out here because I
16 don't have -- you know, he has the field
17 experience so I basically ran this by Hans as
18 well as some comments that are there in the
19 site profile itself because of the interference
20 of thorium 234, especially for workers who are
21 also working with uranium. So you have a
22 problem of interpreting the -- the in vivo
23 counts for americium. Now, whether some
24 compensation of claimant favorable approach to
25 interpreting the in vivo counts could be made

1 or not we didn't yet -- we did not evaluate
2 that.

3 **DR. NETON:** Are you talking about the
4 resolution of the sodium iodide versus the
5 uranium system?

6 **DR. MAKHIJANI:** Yes, from the 63 TEB thorium
7 234 --

8 **DR. NETON:** You clearly have a 93 TEB peak for
9 the thorium 234 which could easily be stripped
10 out to measure the americium.

11 **DR. MAKHIJANI:** Yes, so --

12 **DR. NETON:** So it may not be a technical issue.

13 **MR. DEMAIORI:** I know we had a lot of expert
14 (unintelligible).

15 **DR. NETON:** (Unintelligible).

16 **DR. MAKHIJANI:** Well -- Well, I -- I just want
17 --

18 **DR. NETON:** Yeah.

19 **DR. MAKHIJANI:** It was raised in the -- in the
20 TBD I think and also we thought at least we
21 should put it on the table. I'm not saying
22 that it's not an issue that can't be resolved
23 or -- so basically it seems to me broadly that
24 there are some measurement -- there's a gap in
25 the americium monitoring up to 1963. There are

1 some measurement issues which could perhaps be
2 easily resolved until 1976. And then there's
3 the issue of how are we going to address -- how
4 is NIOSH going to address the radionuclides in
5 plants A and C for which it doesn't appear so
6 far as I understand it the TBD to be gross
7 alpha data.

8 **DR. ULSH:** I don't want to interrupt. Are you
9 done?

10 **DR. MAKHIJANI:** No. And there are a number of,
11 you know, the -- there's -- the radionuclides
12 specifically are thorium 232, uranium 233,
13 confounded, you know, with the presence of
14 uranium 232 up to 50 PPM, neptunium, curium.

15 **DR. ULSH:** Okay. So if we can -- a couple of
16 these we can maybe answer verbally but we'll
17 prepare written responses.

18 **DR. NETON:** This -- This came over in a report
19 what, last week maybe?

20 **DR. ULSH:** Yeah, last week, Thursday I think.

21 **DR. MAKHIJANI:** I just had it in my computer.

22 **DR. ULSH:** Regarding gross alpha, I think what
23 we said about americium was that americium-
24 specific bioassay started in 1963 but we were
25 doing gross alpha before that from -- for the

1 gap that you're talking about from '57 up to
2 '63, during that -- during those years there
3 would be gross alpha measurements.

4 **DR. MAKHIJANI:** I don't think so because the
5 way I interpret -- there's this table in that
6 memorandum which is taken from the site profile
7 on page 38. There are two -- two little tables
8 there without numbers. But I just basically
9 reproduced what -- what is there. And this
10 seems to, if I'm interpreting the B1, B2, B3,
11 C1, C2 correctly as belonging -- as methods
12 that were used as belonging to the class with
13 which those letters are associated, then it
14 doesn't appear that if you look at the key,
15 which is also from the site profile, then it
16 doesn't appear that there are gross alpha data
17 for the americium.

18 **MR. FALK:** This is Roger Falk.

19 **DR. MAKHIJANI:** Yeah.

20 **MR. FALK:** I would like to comment on the fact
21 that the A, B, C, and D were just the general
22 plant designations and -- and may be
23 interpreted as being the default measurements
24 for the bioassay for the -- for those
25 buildings. But it does not preclude use of

1 basically any of the measurements for the
2 special circumstances if the operational health
3 physics staff thought that it was necessary.

4 **DR. ULSH:** So I think the point is it's too
5 hard to do a delineation there. I mean those
6 were the -- those were all the ones that were
7 used based on the radionuclides that were in
8 use in those buildings. But certainly I mean
9 they could -- could have used anything that
10 they found and for the special situation they
11 could have used --

12 **MR. GRIFFON:** Well, then I guess the question
13 isn't could they have. The question is did
14 they? Did they do gross alpha during that time
15 period. I think Arjun is raising the question
16 is -- is -- you -- you gave a good answer
17 previously, that gross alpha would have been
18 used prior to americium specific, but the
19 question is did they have gross alpha in those
20 areas where americium would have been used
21 during that time period. And I don't know that
22 you can answer that, you know. Maybe that's
23 something you can follow up on unless Roger
24 knows offhand.

25 **DR. ULSH:** I don't know.

1 **MR. GRIFFON:** Yeah.

2 **DR. ULSH:** It seems logical that they would use
3 the -- the technique that would be appropriate
4 for the radionuclides that you could be exposed
5 to. I mean I haven't seen any evidence that --

6 **MR. GRIFFON:** Or -- Or they could have. I
7 mean we've certainly seen this at other places
8 when the primary thing going on in a -- in an
9 area is plutonium work and nobody's paying
10 attention to the americium separation
11 operation, you know. They may not be
12 monitoring at all for that. So I don't -- I
13 don't know either way but I guess if there's no
14 gross alpha during that time period for people
15 in those areas, then your previous methodology
16 wouldn't hold. That's -- I guess that's
17 what's being questioned anyway.

18 **DR. MAKHIJANI:** Yeah, well, I basically, you
19 know, took -- took the suggested approach from
20 the prior meeting and just reviewed the
21 available documentation from NIOSH to see
22 whether it would work. And there are some
23 gaps. And it's not that the data might not be
24 there but so far I could -- as I could see the
25 literature there seemed to be some gaps.

1 **DR. ULSH:** Okay. We'll see -- We'll see what
2 we can find.

3 **MR. GRIFFON:** Do we know, Arjun or -- or Brant,
4 do you know if the other -- I mean you -- and
5 understand me; this may not completely cut this
6 way as Roger just said, but B and D have gross
7 alpha. Do you know where these other
8 radionuclides would have been used --

9 **DR. MAKHIJANI:** As far as americium I think --

10 **MR. GRIFFON:** -- as far as americium?

11 **DR. MAKHIJANI:** Well, you know, there are two
12 people from Rocky Flats.

13 **MR. GRIFFON:** Right.

14 **DR. MAKHIJANI:** And maybe they should say
15 whether -- it seemed to me that the 7-- 71--
16 700-series buildings were where the americium
17 work was done. Would that be right Bob, Roger?

18 **MR. FALK:** Yes, I am thinking that is the place
19 where I know that it was done. I don't know
20 that it was done other places.

21 **DR. MAKHIJANI:** And also, do we know where the
22 thorium work, 232 work was done? My sense it
23 may have been done with depleted uranium; that
24 may have been done in plant A but I am -- I'm
25 certainly not sure of this. Do we know?

1 **DR. ULSH:** I seem to recall having seen at some
2 point a Chem-Risk report that kind of specified
3 where the thorium work was done.

4 **DR. MAKHIJANI:** I quoted the Chem-Risk report
5 here. Let me see. What did I say?

6 **DR. BISTLINE:** Roger, but wasn't that thorium
7 232 in -- done in late '83, mostly?

8 **DR. MAKHIJANI:** Oh, no. It did -- it was in
9 the 700-series also.

10 **DR. BISTLINE:** Yeah, there was some in the 700.

11 **DR. MAKHIJANI:** I think it was both in the 800
12 and 700-series.

13 **DR. BISTLINE:** They both -- They both -- that
14 was -- that was the issue.

15 **DR. MAKHIJANI:** Yeah. That's why it's in
16 there.

17 **MR. FALK:** I'm thinking also it was used in the
18 model shop, and I think that was in building
19 81, wasn't it, Bob?

20 **DR. BISTLINE:** Yes. Yeah, the model shop was
21 in 81 but the preponderance of the actual work
22 with it, most -- most of it was in 83 and then
23 used -- used in plutonium production. Yeah.

24 **DR. MAKHIJANI:** The 800 would be what, A or D?
25 No, D is in the 900, right? So the 800-series

1 is -- is plant A? Sorry?

2 **MR. FALK:** The 800 was -- was the B plant, like
3 in boy.

4 **DR. MAKHIJANI:** You're right. That's right.

5 **DR. ULSH:** All right. The other issue that you
6 brought up was when we were talking about the
7 americium content from returns. Roger did give
8 a verbal explanation for that but we also
9 provided independent documentation for that.
10 In fact I remember pretty clearly because it's
11 one of those -- it's in one of our comment
12 response sets and you -- you, Arjun, noticed
13 that there was a blurb in there about
14 (unintelligible) salt.

15 **DR. MAKHIJANI:** Oh, yes, you did send a
16 document. I'm sorry. I forgot about that.

17 **DR. ULSH:** Yeah.

18 **DR. MAKHIJANI:** So I think -- I think that has
19 been covered. So there is -- I have a document
20 from you actually that specifies the
21 percentages. I forgot about that. Sorry.

22 **DR. ULSH:** And obviously we -- we got this last
23 week so we'll prepare responses.

24 **MR. GRIFFON:** Do we have any -- any impression
25 on how many people would have been affected by

1 these other radionuclide exposures?
2 Specifically americium, thorium, U233, curium,
3 neptunium? Are they -- I just don't have a
4 sense of how -- what the source -- the
5 magnitude of the source (unintelligible)
6 potential people involved.

7 **DR. ULSH:** I'm not saying that that information
8 is not available but I don't have it in my head
9 right now.

10 **MR. GRIFFON:** Right. Right.

11 **DR. ULSH:** Anyone on the phone have anything on
12 that? But only speak if you know what you're
13 saying is reliable.

14 **DR. BEHLING:** This is Hans. I do have a
15 question regarding the MDA values for chest
16 counting that are stated in I guess this is --
17 let's see here. This is in -- on page 69 of
18 the TBD. I -- if it's the addendum or
19 attachment and they have MDA values for
20 americium in the years '64 through '68 that are
21 in the order of 1, 2, 3 or so nanocuries. And
22 I'm having a tough time getting to that kind of
23 a number given the interference that you would
24 get from K40 and potentially other nuclides
25 that the person may have based on our comments

1 and -- and the discussions at the last working
2 group meeting where we looked at the particular
3 claim that I had raised up where the individual
4 had supposedly ingested deer meat and the
5 interference it caused, and the limited ability
6 to see the -- the plutonium -- or no, the
7 uranium 235. And I'm having a tough time
8 looking at these numbers and -- and realizing
9 that the 59.5 KeV photon wouldn't have similar
10 problems in terms of detectability with a 4x4
11 sodium iodide crystal.

12 **DR. NETON:** Well, that was my -- that was my
13 question, Hans. Was this referred to be a 4x4
14 sodium iodide detector that was used for
15 urinalysis?

16 **DR. BEHLING:** Yes, this was the -- a Y-12
17 situation and in the early years they also used
18 the 4x4 sodium iodide.

19 **DR. NETON:** Where? At Rocky?

20 **DR. BEHLING:** No, this was at Y-12.

21 **DR. NETON:** That's my point. I think that you
22 wouldn't use a large volume detector like that
23 when you're measuring 60 KeV. If you had a
24 thinner sodium iodide detector the cross-
25 section for the 1.46 MeV photons would be very

1 small and -- and have a much higher, you know,
2 100 percent efficiency for something below 100
3 KeV so --

4 **DR. BEHLING:** Yeah, I -- I -- I realize -- I
5 realize that but I'm looking at the Rocky Flats
6 TBD and there is a table. It doesn't have the
7 numbers here but it is I guess an attachment
8 that says summary of MDA for the in vivo lung
9 counts at Rocky Flats. And for the 1964
10 through '68 time frame they give you two
11 systems, one -- two values, one for minimum
12 system and standard system; and they give it to
13 you in units of nanocuries. And they range
14 somewhere between one to four nanocuries as the
15 MDA value for americium. And I'm having a
16 tough time getting to that number or that level
17 of sensitivity given the problems that we
18 discussed in behalf of the Y-12 case.

19 **DR. NETON:** But that's my point, Hans. You
20 need to compare what kind of detectors they
21 were using.

22 **DR. BEHLING:** Well, in that case they used the
23 4x4, too.

24 **MR. FALK:** Hans, this is Roger Falk. If you'd
25 look on page 56, it basically describes the 4x4

1 detector as being four inches in diameter and
2 four millimeters thick. So we're talking about
3 a mixture of the metric and the English system
4 of units and we're talking about a very thin
5 sodium iodide crystal.

6 **DR. BEHLING:** Okay. I -- I recognize the
7 difference now. I'm looking at -- I just
8 looked at the table and it said 4x4 and I had
9 assumed it was 4x4 inches. You're correct.
10 It's 4x4 millimeters, four inches by four
11 millimeters. Okay. I stand corrected.

12 **DR. ULSH:** All right. Rocket scientists have
13 had the same issue, mixing English and metrics.

14 **MR. GRIFFON:** Okay. Is there anything else
15 left on the other radionuclide topic?

16 **DR. MAKHIJANI:** No, so basically you're going
17 to get back to us on --

18 **MR. GRIFFON:** As far as the gross alpha.

19 **DR. MAKHIJANI:** Yeah, and the one -- the one
20 depleted plutonium 241 is resolved.

21 **MR. GRIFFON:** Is resolved? Okay.

22 **DR. ULSH:** Okay.

23 **DR. MAKHIJANI:** That -- That one is resolved.
24 The other ones we'll -- we'll get responses
25 for.

1 **DR. ULSH:** I think you listed seven issues,
2 Arjun? Yeah, seven issues there at the end.
3 Which one is it that you're saying is --

4 **DR. MAKHIJANI:** The one that I noted was
5 resolved by your comment just now was the --
6 let's see -- the second -- the second americium
7 issue, plutonium depleted americium 241 which I
8 think is C2, item 2 under section C. So if one
9 -- the issue to if one accepts the NIOSH
10 statements, et cetera. So that -- I forgot
11 about the document you sent me.

12 **MR. GRIFFON:** And then make sure that -- I mean
13 saw the other central issue as being can you
14 use gross alpha for all these other
15 radionuclides?

16 **DR. MAKHIJANI:** Is it there?

17 **MR. GRIFFON:** Or what -- Yeah.

18 **DR. MAKHIJANI:** Do you have the data?

19 **MR. GRIFFON:** Was it used? Yeah. And we
20 understand that if -- when in doubt you're
21 going to assume the worst case radionuclides
22 but you have to have some data to do that and
23 you're going to check that. And that covers
24 all those other sub-sections; is that --

25 **DR. MAKHIJANI:** That's -- That's the --

1 That's the big issue, really.

2 **MR. GRIFFON:** Right. Okay. I don't want to --
3 I don't want to narrow it down from seven
4 issues to two without thoroughly reading this.

5 **DR. ULSH:** Go ahead. It would make my life
6 easier.

7 **DR. MAKHIJANI:** If you look at the uranium
8 issue six on page seven it says, you know, the
9 -- all about uranium 233 and the 700-series
10 building and --

11 **MR. GRIFFON:** I guess -- I guess if I can
12 consolidate, I mean what I want to understand
13 is how are you going to reconstruct doses for
14 those other radionuclides? And if it's gross
15 alpha, you know, demonstrate where you have the
16 gross alpha available for the time periods of
17 interest and the other thing I just mentioned
18 was the magnitude of these first items. Are
19 they -- Are they big, you know? Is it -- Is
20 it large quantities, small quantities? A great
21 deal of people potentially exposed or very few
22 people potentially exposed? You know, that
23 will give us a sense, too, of how --

24 **DR. ULSH:** Well, we know for some of them --
25 for like neptunium springs to mind, and maybe

1 curium although don't hold me to that; they
2 were in tracer quantities.

3 **MR. GRIFFON:** That's what I thought, right.
4 Right.

5 **DR. ULSH:** But I'm not prepared on the other
6 ones.

7 **MR. GRIFFON:** Right.

8 **DR. BISTLINE:** That gets into classified stuff,
9 U233 and the curium tracers.

10 **MR. GRIFFON:** So to the extent you can outline
11 that in -- in writing to us without getting
12 into classified, you know, that would be
13 helpful, too, so we can understand the problem
14 in terms of the whole overall class, you know.
15 Okay. Is that it? Is that it, Arjun?

16 **DR. MAKHIJANI:** Yeah, that's it. I mean
17 there's the -- there's the data for the other
18 radionuclides and the americium specific data
19 interpretations but the americium there are two
20 questions. There's the gap up to '63 and then
21 there's the interpretation of measurements
22 which may be less of an issue than is in the
23 memo.

24 **MR. GRIFFON:** And I'm going to maybe get a few
25 minutes before lunch. And I don't want to go

1 into data reliability with just a few minutes.

2 **D&D WORK**

3 But this question of D&D work, it's the last
4 item on my agenda. And the question basically
5 I think is how those nine proposed -- it's not
6 outlined in the site profile, and I don't think
7 it's addressed in the evaluation report. Maybe
8 it is but it's covered in the class --

9 **DR. ULSH:** Right.

10 **MR. GRIFFON:** -- so I guess that's what we want
11 to understand, how doses would be reconstructed
12 for those workers.

13 **DR. ULSH:** Have you -- it's kind of a big
14 topic. I know SC&A sent us over a list of the
15 questions that they had.

16 **MR. GRIFFON:** Okay.

17 **DR. ULSH:** So do you want to go ahead and do
18 that now or --

19 **MR. GRIFFON:** Or maybe -- Maybe it's -- Maybe
20 it's too -- I mean we can break a little early
21 I suppose. Some of us have to get on a call in
22 between anyway so --

23 Can you -- can you -- can you give us a
24 preview, Brant? Is there --

25 **DR. ULSH:** Sure.

1 **MR. GRIFFON:** Is there potentially going to be
2 a supplement to the evaluation report or you
3 don't think so at this point?

4 **DR. ULSH:** I don't think so at this point. We
5 know that the external dosimetry systems that
6 were used in the D&D era are the same as those
7 that we used in the production era, Panasonic
8 TLD. The big question that SC&A focused on --
9 and Joe, feel free to jump in and correct me --
10 was the use of BZ's, breathing zone monitors,
11 lapel air samplers. So that would be the big
12 issue I think that we'll want to talk about
13 when we begin after lunch.

14 **MR. GRIFFON:** Right. Because every model we've
15 -- we've so far seen is -- all -- everything is
16 based on urinalysis data.

17 **DR. ULSH:** Right.

18 **MR. GRIFFON:** Now, we're in a different era
19 where they did BZ.

20 **MR. FITZGERALD:** And the other issue is just
21 the availability of records for what, you know,
22 arguably are transient workers in the sense
23 that the sub-contractors come and go. I think
24 some question about whether the second and
25 third tier sub-contractor, whether those

1 records were accessible, you know, that kind of
2 thing.

3 **DR. ULSH:** And Gene Potter, are you still on
4 the line? Okay, we'll try to --

5 **MR. POTTER:** Yes. Yes, I am on the call.

6 **DR. ULSH:** All right. We'll definitely have
7 Gene on line for that discussion because he was
8 employed at the site during that era.

9 **MR. GRIFFON:** Well, why don't -- then why don't
10 we reconvene at -- can we do quarter of one or
11 quarter of two? Quarter of two?

12 All right. We're -- We're going to break now
13 and reconvene at quarter of two.

14 (Whereupon, a lunch recess was held from 12:50
15 p.m. to 2:00 p.m.)

16 **DR. WADE:** Board members on the -- the call:
17 Mike are you there?

18 **MR. GIBSON:** Yes, I'm here.

19 **DR. WADE:** Are there any other Board members
20 besides Mike, Mark and Wanda?

21 (No response)

22 **DR. WADE:** Okay.

23 **MR. GRIFFON:** All right. I think we'll go into
24 -- well, do you want to do D&D or data
25 reliability? It doesn't really matter which

1 order.

2 **DR. ULSH:** Gene, are you back? Are you on
3 line?

4 **MR. POTTER:** Yes, I am. I found my mute button
5 this time.

6 **MR. GRIFFON:** Then why don't -- why don't we
7 discuss the D&D issue.

8 **DR. ULSH:** Yeah.

9 **MR. GRIFFON:** You can continue.

10 **DR. ULSH:** Joe, do you want to lead the
11 discussion? Do you want to walk through your
12 D&D questions or what do you want to do?

13 **MR. FITZGERALD:** Yeah, we can do that. I think
14 a little -- little context or background. At
15 the Advisory Board meeting the Board raised --
16 I think it was Mark raised the question of how
17 D&D would be handled because thus far within
18 the SEC class definition time period. And in
19 the process of looking at that issue, since
20 this was a new issue we felt the approach would
21 be to come up with essentially questions to
22 scope the issue and to raise what we thought
23 were the perfect questions in terms of dose
24 reconstructibility and to provide those to
25 Brant and NIOSH as input. We understood that

1 there was an ongoing review of the question
2 already underway so this was really something
3 to complement that review. And that's about
4 where it was left. I think this was going back
5 a couple weeks ago. And there's a set of
6 questions which I sent to the Board as well as
7 to Brant and we have those sets of questions
8 and we certainly can go through those. Again I
9 -- I see these as really going in preliminary
10 set of here's the kinds of questions looking at
11 this really for the first time that I would
12 raise as a, you know, first order set of issues
13 and then go from there. I mean I think as we
14 unfold this thing I guess there might be some
15 other questions or issues or information needed
16 but certainly this -- this is what struck us as
17 the pertinent ones. I guess the first
18 question, and again I guess everybody has a
19 copy of this -- well, it's just really
20 questions about, you know, we -- we understand
21 that lapel sampling in fact was a -- a key
22 screening technique. This is certainly a big
23 change in terms of how monitoring was done from
24 the production workers. And a lot of our
25 questions on lapel samplers and when bioassays

1 would come into play really revolved around
2 that. I think somebody even raised a question
3 in -- in a public meeting as to, you know, how
4 bioassays were in fact conducted. And the next
5 question on DAC hour analysis, how that might
6 have took precedence over who might normally
7 get monitored. So our first question really
8 was how were the individual workers selected to
9 wear the samplers in the first place? You have
10 a lot of these D&D workers coming in and out of
11 operations all the time. It wasn't clear to us
12 were they, you know, all sampled? Were they
13 all wearing lapel samplers? Was it a -- this
14 goes back to some of the original questions we
15 had on who gets badged. Which ones would be
16 selected to wear lapel samplers and what
17 proportion of the total D&D population that one
18 would expect to be on the site at Rocky Flats.
19 Now, almost by definition after '93 almost
20 everybody was associated with D&D so that --
21 our -- our -- our thinking, you know, how was
22 that done and what does that tell us about the
23 distribution. And procedurally, you know, the
24 process as we understand it would be bioassays
25 being conducted when in fact lapel sampling

1 results were elevated but we're not quite sure
2 about that. That's -- That's a question mark
3 in our minds.

4 **DR. ULSH:** The first thing I think we have to
5 be clear about is that lapel samplers were used
6 not in place of bioassay but in addition to
7 bioassay. They still had a bioassay program in
8 place and I'll rely on Gene to maybe fill in
9 some of the -- texture some of the details
10 here. But the lapel samplers were used in
11 addition to bioassay samplings, a real time
12 indicator. And I think, and Gene, I -- I'm
13 stepping out on a limb here -- once you -- once
14 you hit a certain number of DAC hours, might
15 have been 20. I don't know. That's the number
16 that sticks in my head. That was the trigger
17 for a special -- for a bioassay but that was in
18 addition to the routine bioassay program that
19 was in place. Is that correct, Gene?

20 **MR. POTTER:** Yes. Most of the time the actual
21 workplace indicator as documented was 40 DAC
22 hours but you're correct; 20 was sometimes used
23 by the building personnel to, you know, give
24 them like a early warning level.

25 **DR. ULSH:** So the thing to -- to remember here

1 is that these BZ samples were used as a real
2 time indicator.

3 **MR. FITZGERALD:** Now, did all the workers have
4 BZ sampling done, all the D&D workers, or was
5 it just the active hands-on D&D workers? How
6 was that done?

7 **DR. ULSH:** I think the answer is no, not all
8 workers were on BZ's, but Gene, do you have any
9 insights on who would have been and who
10 wouldn't?

11 **MR. POTTER:** That's not an easy question to
12 answer because it was primarily based on the
13 radiological engineering judgment with a couple
14 of possible exceptions. Certainly in supplied
15 air work for instance. Usually there was --
16 when we're talking the -- clean air suits of
17 level B or bubble suits some people call them.
18 The lapel -- lapel sampling was almost always
19 done in those cases but other than that it was
20 kind of a RAD-engineering judgment supplemented
21 by some of the -- the guidance documents that
22 we've documented there in this response.

23 **MR. FITZGERALD:** So the lapel sampling was a
24 trigger for more frequent bioassay? If
25 everybody was bioassay this was a screening

1 tool.

2 **MR. POTTER:** Right. Lapel sampling we did not,
3 speaking from internal dosimetry's point of
4 view, did not separate lapel sampling from any
5 -- any air sampling. If you received an
6 estimated 40 DAC hours by whatever, general air
7 sampling, you know, job specific air sampling,
8 whatever, if an estimated 40 DAC hours was
9 received by the worker he was then subject to
10 being sent to internal dosimetry. At the end
11 of the program that had evolved to that 40 DAC
12 hours had to be received over a relatively
13 short period of time to figure pico bioassay
14 and otherwise the -- the dose would be assigned
15 from the DAC hours.

16 **MR. GRIFFON:** Was there -- I mean it seems to
17 me it doesn't make a lot of sense that there
18 was a routine bioassay program in place because
19 the reason they put these -- these BZ programs
20 in place was to avoid the cost of the bioassay
21 programs.

22 **MR. POTTER:** Not in the case of Rocky Flats.

23 **MR. GRIFFON:** It wasn't the case?

24 **MR. POTTER:** No.

25 **MR. GRIFFON:** It wasn't scaled back at all or -

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MR. POTTER: They had (unintelligible) account.

MR. DEMAIORI: We used lapel air samplers at Rocky Flats for contamination control, to control the amount of airborne contamination in the workplace. That was our primary use for lapel air sampling because we used a lot of pappers, a lot of full-face, different protection factors, and so that's how we knew that the contamination levels were building up too high and we were starting to get overexposed. Primarily that was the use of the lapel sampler.

MR. GRIFFON: But did you -- the question is did you stay on bioassay programs throughout? Did they still do urine sampling throughout?

MR. DEMAIORI: Yeah, we did routine --

MR. GRIFFON: Yeah.

MR. DEMAIORI: Yeah, we did routine bioassay all the way through the D&D.

MR. FITZGERALD: I guess -- I guess this question stands though. It doesn't, you know, there's this question of how sampling at 40 DAC hours being some kind of a trigger or stream for more frequent bioassay. I guess I don't

1 understand.

2 **DR. ULSH:** I think -- I think what happened
3 there -- is this --

4 **MR. POTTER:** I would not term -- this is Gene
5 Potter again. I would not term it as more
6 frequent but special bioassay.

7 **DR. NETON:** Well, I was thinking, is this after
8 1989? Is this the time frame that we're
9 speaking of? Because after (unintelligible) in
10 1989 there was a sort of requirement that you
11 had to monitor everyone who had the potential
12 to receive 100 millirem exposure internally.
13 And it was well known at the time that bioassay
14 samples were not adequate to demonstrate
15 compliance with that requirement so I think a
16 lot sites went to supplemental sampling with
17 BZ's to -- to help shore up their program so to
18 speak when they had what they would call a
19 technology shortfall.

20 **DR. ULSH:** Al? Al Robinson, are you on?

21 **MR. GRIFFON:** Some cut their bioassay.

22 **DR. ULSH:** Well, I think that another point to
23 make is that in all of the Rocky Flats dose
24 reconstructions we're going to be relying on
25 the urinalysis data. We're not going to be

1 assigning internal dose based on BZ results.
2 So that's the important thing to keep in mind.

3 **MR. GRIFFON:** Yeah, I think that is important.
4 I wasn't clear that -- that they had adequate
5 bioassay going forward for D&D workers. So
6 that's one -- one of the primary questions in
7 my mind anyway.

8 **DR. ULSH:** Yeah. Yeah.

9 **MR. FITZGERALD:** Yeah. The second issue I
10 think we did touch on. This is DAC hours
11 analysis. There was a reliance on DAC hour
12 analysis but it didn't substitute for bioassay.
13 I guess that would be the answer for the
14 question of reliance on DAC hour analysis.
15 This -- This is a issue as part of this number
16 two, December 1st, '93, Defense Board report
17 noted sensitivity of this -- of the Selected
18 Alpha Air Monitors -- SAAMs -- were only 42 DAC
19 hours, averaged over eight hours. That
20 probably didn't match up with the RAD Control
21 Manual. I guess the question of whether the
22 air sampling sensitivity was as sufficient to,
23 actually do this kind of monitoring.

24 **DR. ULSH:** Gene, I'm going to hand that one off
25 to you if you're --

1 **MR. POTTER:** Okay. I guess one of the -- the
2 important points that we need to make here is
3 that we never relied on strictly one workplace
4 indicator to trigger special bioassay. And so
5 even if the SAAMs were not as accurate or any -
6 - as sensitive as one would like, you still had
7 personal contamination nasal swipes and a host
8 of other things that would -- would normally be
9 telling. And then eventually CAMs replaced
10 SAAMs when the heavy D&D started and the CAMs,
11 of course, were very sensitive.

12 **MR. FITZGERALD:** Well, I think what clarifies
13 this for me again is that these were all
14 collectively techniques to trigger special
15 bioassays as opposed to routine. And I think
16 that answers some of the concerns we had, not
17 distinguishing between the two.

18 **MR. POTTER:** That's correct. And we --
19 remember we -- we had regulatory. We -- We
20 were going after 100 millirem intakes or less.

21 **MR. GIBSON:** This is Mike Gibson. Could I ask
22 who is the DOE contractor for the Rocky site at
23 that time?

24 **MR. POTTER:** Starting in '89 for the infamous
25 raid it was Rockwell, replaced by EG&G until

1 '95, mid-'95 Jack Kaiser Hill Company came in.

2 **MR. GIBSON:** Okay. Thank you

3 **MR. GRIFFON:** I just -- the database, the HIS
4 20, as I've been corrected on, the database
5 records I think everything we've got so far
6 goes up to '88; is that right? Or do we have
7 later years? I'm just asking because I don't
8 know.

9 **DR. ULSH:** Are you thinking of the co-worker
10 data because for that we used CEDR for internal
11 and that went up through '89.

12 **MR. GRIFFON:** It went up through '89? We don't
13 -- we don't have any of these, I mean in -- in
14 aggregate, in database sense, we don't have '89
15 through -- which would cover the D&D period, do
16 we?

17 **DR. ULSH:** We're currently working on expanding
18 the internal co-worker data in response to, you
19 know, the D&D questions. The external co-
20 worker data does go up through 2005 I think.
21 The internal does not. It goes up to '89 and
22 we're currently working right now on expanding
23 it from the D&D era. And that will be based on
24 HIS 20 data, not -- not CEDR, for the later
25 years.

1 **DR. MAKHIJANI:** But Brant, when you include the
2 data from the '90s in the co-workers do you --
3 do you -- how -- are you making a separate co-
4 worker model? How do you integrate that? I
5 mean it seems like completely different kind of
6 work. Wouldn't that data be an overall co-
7 worker model or how consistent with the job
8 type --

9 **DR. ULSH:** It's a year by year analysis just
10 like the previous idea but we'll be using --
11 oh, sorry -- previous co-worker data, but we're
12 going to be using data from HIS 20 so we'll be
13 using for the radionuclides: uranium,
14 plutonium, americium; we'll be using the data
15 for those years from HIS 20. So it will
16 reflect the D&D -- results from the D&D era.

17 **MR. GRIFFON:** So it depends on -- on year
18 works, not job or department?

19 **DR. ULSH:** Exactly.

20 **MR. GRIFFON:** Like the other.

21 **DR. ULSH:** Just like the other.

22 **DR. MAKHIJANI:** Okay. So you feel the missed
23 dose with the co-worker data (unintelligible)?

24 **MR. GRIFFON:** Or the 50th or the 95th --

25 **DR. ULSH:** Yeah.

1 **MR. GRIFFON:** -- percent.

2 **DR. MAKHIJANI:** Percent.

3 **DR. ULSH:** Now, wait a minute. Not missed
4 dose. Unmonitored dose.

5 **DR. MAKHIJANI:** Unmonitored.

6 **MR. GRIFFON:** Unmonitored.

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

8 **MR. GRIFFON:** Right.

9 **DR. MAKHIJANI:** I meant unmonitored.

10 **MR. GRIFFON:** On the -- just going back to the
11 routine monitoring question, was -- was
12 monitoring -- I mean was everyone at the site
13 on a routine bioassay program during that D&D
14 period or was it RWP specific or -- I'm just
15 trying to get a sense.

16 **DR. ULSH:** I think the answer is no, Mark, not
17 everyone was on routine bioassay. I think it
18 was only people who were judged to have 100
19 millirem or greater potential.

20 **MR. GRIFFON:** Potential, right. Right.

21 **DR. ULSH:** Gene, do you have any more insights
22 to fill in on that?

23 **MR. POTTER:** Yes. We implemented the 100
24 millirem per year from all intakes requirement
25 by essentially bioassaying or putting everyone

1 in a routine bioassay program if they were RAD-
2 worker II trained or RCT trained. So in other
3 words, that's the minimum level of training
4 required to work in a contamination area.

5 **MR. FITZGERALD:** Now, would that training be
6 specific to, you know, Kaiser-Hill, or would
7 that flow down to all the subs?

8 **MR. POTTER:** It was all the subs.

9 **MR. FITZGERALD:** So all the subs who were doing
10 their own training, that would be covered?

11 **MR. POTTER:** Right. And most of them used the
12 site training. I think there were probably a
13 few exceptions but -- where they had shown
14 equivalent training.

15 **MR. GRIFFON:** And they'd all --

16 **MR. POTTER:** And this RAD-worker II training is
17 -- is a DOE-wide program and uses DOE-wide
18 standards.

19 **MR. GRIFFON:** And they'd all be picked up on
20 the -- on the overall site bioassay program
21 though, right? The subs and everyone, yeah.

22 **MR. POTTER:** Yeah.

23 **MR. GRIFFON:** And they'd all be in the same
24 database system?

25 **MR. POTTER:** Yes.

1 **MR. GIBSON:** This is Mike Gibson again. On the
2 routine bioassay sample that took place after
3 you implemented the -- the BZ breathers and
4 then the SAAMs and everything else, what was
5 the definition of routine bioassay? Is that
6 monthly? Is that yearly? Is that quarterly?
7 What was the -- What was the practice there?

8 **MR. POTTER:** Okay. It was annual urine
9 bioassay and lung counting as frequently as
10 equipment and workload permitted. That varied
11 probably between 18 and 24 months, most
12 commonly --

13 **MR. GIBSON:** Sorry?

14 **MR. POTTER:** -- depending on how many rooms are
15 up and -- and that sort of thing.

16 **DR. ULSH:** Could you repeat that, Gene?
17 Between 18 and how many months?

18 **MR. POTTER:** Eighteen to 24 months I would say
19 was -- would be the -- the average lung count
20 frequency. And since these folks were being
21 bioassayed based on training, it's a little
22 difficult to audit that because people would
23 sometimes let their training expire and so
24 forth. And then they would be picked up on the
25 program again once their training was current.

1 And then I should mention one more thing.
2 Towards the very end, and I'd have to think or
3 look up when exactly this took place, but
4 towards the end we also required for lung
5 counting I believe or that the person had made
6 an entry into ACA within the last (inaudible)
7 months.

8 **MR. GIBSON:** And as far --

9 **MR. POTTER:** There were some other wrinkles
10 that were thrown in. Basically they were
11 trying to reduce some costs.

12 **MR. GIBSON:** Excuse me if this has already --
13 this is Mike Gibson again. Excuse me if this
14 has already been covered but on a particular
15 project how many of the workers in the room or
16 in the area, general area wore the BZ monitor?
17 Was that 100 percent or 50 percent or 25
18 percent?

19 **MR. POTTER:** This is Gene again. I don't think
20 that we have that data again. That was kind of
21 a RAD engineering decision, professional
22 judgment type thing. Again, all of them would
23 have been on a routine monitoring program for
24 urine bioassay and lung counting. That was --
25 and that was a yearly bioassay. Yearly urine

1 sampling generally if they made entries and
2 lung counting at 12 to 24 months, somewhere in
3 there.

4 **DR. ULSH:** Now, Gene, is it possible that they
5 would have been on more frequent schedules than
6 that? I mean is that the minimum schedule?

7 **MR. POTTER:** The special bioassays were taken
8 any time there was an -- a incident so people -
9 - yes, people were on occasion sampled more
10 frequently than that.

11 **DR. ULSH:** But no one would have been on a
12 routine say quarterly urine sample schedule?

13 **MR. POTTER:** No, there was, you know, RWP
14 specific sampling generally for tritium and in
15 some cases uranium where people received far
16 more specific -- frequent samples but that was
17 RWP based, not what we would consider routine.

18 **MR. GIBSON:** This is Mike Gibson again. Was
19 this the historical practice at Rocky Flats for
20 bioassay or was there a time when they were on
21 say quarterly -- all RAD workers were on
22 quarterly? And was it historical or was there
23 a point in time that that changed? And if
24 there was a point in time that it went from the
25 BZ's to the annual bioassay about what time

1 period was that?

2 **MR. POTTER:** It -- I'm only speaking of the
3 so-called D&D era.

4 **MR. GIBSON:** Correct.

5 **MR. POTTER:** And so during that period of time
6 the program remained relatively constant with
7 various tweaking here and there, you know,
8 frequently to, you know, look at cost savings
9 and so forth. So I mean --

10 **MR. GIBSON:** So technically -- this is Mike
11 Gibson. Technically the D&D era ended when
12 (unintelligible) one called an end to the Cold
13 War. But if I understand any of Rocky's
14 histories right, I believe the heavy-duty and
15 get serious D&D work probably started in about
16 the mid-90s, maybe -- maybe a little later in
17 the 90s; is that correct?

18 **MR. POTTER:** Kaiser-Hill came in in 1995, mid-
19 1995, and I would say it took them probably a
20 year to really get going, something like '96
21 through of course 2005.

22 **MR. GIBSON:** Okay. Thank you.

23 **MR. FITZGERALD:** Did -- go ahead.

24 **DR. MAKHIJANI:** Gene, the -- the petition
25 raises a question of the security guards who I

1 guess would not fall into the category you just
2 mentioned of people who opted to have radiation
3 training and therefore were on routine bioassay
4 if I remember correctly. Right, Tony? What --
5 What -- What about -- What about the exposure
6 assessment for workers like security guards or
7 workers who were in the general area because of
8 the, you know, large volume of dust when the
9 buildings are coming down, contaminated things
10 were being decommissioned and so on?

11 **MR. POTTER:** First of all, I don't agree that
12 security guards were not RAD worker II trained.

13 **DR. MAKHIJANI:** Well, I -- I don't know. I
14 mean I'm -- I'm just --

15 **MR. POTTER:** Yeah.

16 **DR. MAKHIJANI:** I'm just raising an example
17 that was given in the petition.

18 **MR. POTTER:** Yeah, I would say that 99-plus
19 percent of them were RAD worker trained, RAD
20 worker II trained. And as a matter of fact far
21 more people were RAD worker II trained than
22 would have been required to be RAD worker II
23 trained. Includes many administrative types
24 because they might have to go into a building
25 and would not necessarily want to be escorted

1 or -- or, you know, for whatever reason we --
2 this -- the concept of basing routine bioassay
3 on RAD worker II training is a valid one;
4 however, it's difficult to control how many
5 people get that training. Some of them saw it
6 as a red badge of courage, you know, employment
7 security or something and so we had far more
8 people in the routine bioassay program than the
9 real heavy-duty D&D workers. But certainly it
10 included all the heavy D&D workers.

11 **MR. DEMAIORI:** Wasn't there a DOE order that
12 forced us to reduce the number of RAD worker II
13 just like the beryllium? Didn't we make a
14 conscientious effort to reduce those that were
15 exposed and how many dosimeters we were
16 issuing?

17 **MR. POTTER:** There could have been something
18 like that. However, I never saw the effects at
19 the -- at the operational level. It seemed
20 like we always had far more people with the
21 qualifications than who actually needed it, and
22 far more people wearing dosimeters than
23 actually needed them except for maybe on a very
24 occasional basis.

25 **MR. FITZGERALD:** I guess I -- just going back

1 to your comment -- this is Joe Fitzgerald --
2 about who was badged, and the trigger was the
3 RAD worker II training obviously. I came
4 across a number of Defense Board -- Defense
5 Nuclear Facility Safety Board reports in the
6 early 90s, and this was a recurrent theme that
7 they had in their reports about the fact that
8 so-called visiting workers, workers that came
9 on as sub-contractors and went off. They were
10 concerned about their not being bioassayed
11 because their training was being done elsewhere
12 and their status was transient status. That --
13 That -- That, again I can provide copies of
14 the Defense B reports but that seemed to be a
15 concern in the early 90s. Going back to what
16 you were saying before, is there any
17 explanation for why that kept being surfaced
18 and was there in fact some gaps as far as who
19 got bioassayed by virtue of training?

20 **MR. POTTER:** First of all, let me -- let me
21 agree that termination bioassay is always a
22 problem and has been a historic problem at most
23 sites that use a lot of subcontractors, and
24 Rocky Flats certainly was no exception. And we
25 didn't really get a handle on that 'til I would

1 say '97/'98 when we were able to strengthen the
2 contract language imposing fines for companies
3 who did not run people through. Getting people
4 into the bioassay program was never an issue in
5 my estimation because most all the areas until
6 the very end required dosimeters; it was very
7 conservative posting levels for external
8 dosimeters. And as people came in to get their
9 external dosimeters if they were RAD worker II
10 trained they were immediately sent over to
11 internal dosimetry to in-process and they were
12 placed in the bioassay program. Now, a lot of
13 the subs, you know, had a policy that when the
14 job was done they were going to lay the people
15 off. They were going to give them no notice,
16 and so this created the -- the possible
17 termination problem. On the other hand, from
18 day one those folks were subject to special
19 bioassay if they were involved in any
20 incidents. (Unintelligible) nasal swipes and
21 all that sort of stuff, general air sampling.
22 If there was any workplace trigger -- remember
23 again, we're going after 100 millirem or less
24 CEDE so that was always in effect. And the
25 fact that we, you know, missed some termination

1 bioassays, as most of the DOE complex would
2 have during this time, does not have an overall
3 effect I don't think on -- you know, there were
4 no peak intakes likely to have been missed by
5 that, just simply the fact that you did not get
6 an exit urine sample.

7 **MR. GRIFFON:** But in terms of -- do you have a
8 sense of how many individuals that might
9 involve? It's probably a hard number to get a
10 handle on.

11 **MR. POTTER:** Actually there are records of
12 that, of -- of termination bioassay sampling.
13 The statistics were very difficult to do as you
14 can imagine. People switching companies, did
15 they really leave or, you know, did they just
16 switch companies and therefore, you know, they
17 shouldn't count as a missed termination
18 bioassay. But we did attempt to do that. That
19 was required by DOE actually.

20 **MR. GRIFFON:** I guess I mean --

21 **MR. POTTER:** Those records -- Those records
22 exist.

23 **MR. GIBSON:** This is Mike Gibson. If -- If
24 people took a termination bioassay and the
25 company ran the analysis on that sample, how

1 would they determine the date of intake?

2 **MR. POTTER:** The course involved for the sample
3 was above the decision level. There would be
4 no need to determine an intake date.

5 **MR. GIBSON:** Well, wouldn't that determine the
6 amount of dose the individual may have gotten
7 depending on the date of it?

8 **MR. POTTER:** If the result was below decision
9 level that was a non-detect.

10 **MR. GIBSON:** No, I'm sorry. Maybe I didn't say
11 that correctly. Maybe you didn't hear me
12 properly. If it was above the decision level
13 how would you determine the date of intake,
14 because that would specifically determine the
15 amount of intake they could have gotten. If --
16 If they got the intake a week before you might
17 have had a very high reading. That reading
18 could still be high and they could have got the
19 date of intake four years ago. How would you
20 determine the date of intake?

21 **MR. POTTER:** Okay. So this is for specifically
22 asking about termination bioassay?

23 **MR. GIBSON:** At this point, yes.

24 **MR. POTTER:** Okay. There were only a very few
25 cases where the results were above the

1 detection limit that I can recall.

2 **MR. GIBSON:** Uh-huh.

3 **MR. POTTER:** And of course the first thing we
4 would do would be to try and go after that
5 individual for additional samples to verify,
6 make sure that wasn't a false positive and
7 such. But say that was borne out, and I can't
8 give you any -- I don't recall any specific
9 instances but -- because they were definitely
10 rare -- but say that were to be borne out that
11 that was in fact activity, and we would, you
12 know, interview the individual. We would
13 contact the RAD engineering folks in the
14 locations where he worked. And if worse came
15 to worse generally you would use the mid-point
16 from between samples, going back to his last
17 non-detect and assign a dose that way. Of
18 course, all this has nothing to do with what
19 the NIOSH process would be.

20 **MR. GIBSON:** Well, I think it does. I think
21 the amount a dose the person got deter-- could
22 determine the cause of -- probability of
23 causation.

24 **MR. POTTER:** Right. But you're asking me how
25 we would have assessed the dose.

1 **DR. NETON:** Right. Mike, we -- this is Jim
2 Neton. We wouldn't necessarily use their dose
3 assignment for our dose reconstruction program
4 here.

5 **MR. GIBSON:** I understand that, Jim, but you
6 would go back to the data and -- and try to re-
7 determine a dose on your own.

8 **DR. NETON:** Right.

9 **MR. GIBSON:** But still, I'm just trying to ask
10 what are the policies or the procedures, maybe
11 I should be more familiar with them, on how one
12 would determine when the dose of intake
13 occurred because that would directly affect the
14 amount of dose the person got.

15 **MR. POTTER:** Right. And my answer is if we
16 could not determine an intake date by those --
17 interviewing individuals, the RAD engineering,
18 looking at his health physics records, which is
19 one thing I think I forgot to mention, see if
20 he was involved in any incidents and so forth.
21 If you could not determine a date any other way
22 we would have assigned the dose using the
23 midpoint.

24 **MR. GIBSON:** Okay. So if they were on a --
25 I'll just ask this question because I don't

1 know the exact answer and maybe you or Mark or
2 someone else could help me. So if you went to
3 the midpoint of their last bioassay sample and
4 say it was nine months ago. Say they had --
5 they had had their annual three months before -
6 - you know, nine months before they left. That
7 still leaves a four and a half month window of
8 opportunity on either side for the better or
9 for the worse on what kind of dose they may
10 have received; is that right?

11 **MR. POTTER:** That is correct.

12 **MR. GIBSON:** Thank you.

13 **MR. GRIFFON:** Let me just on the termination
14 sampling I mean, I guess, and -- and, you know,
15 Brant, you're looking to pull this data
16 together from '89 on. But also I mean my sense
17 would be if it's not a large population of
18 termination sampling that's missed, I would
19 think that your co-worker model could be used
20 to apply this. The only thing I would say is
21 if -- if you're missing a large number of these
22 subs then I'd get concerned. From my
23 experience that the subs did the dirtier work
24 often so your -- your co-worker population
25 could not be representative. You know, you

1 could have that issue. But if it's a small
2 population that you're missing I would think
3 this -- this could probably be resolved by
4 applying your co-worker model even if you use
5 the 95th or whatever. Am I --

6 **DR. NETON:** I think that's pretty much how we
7 applied --

8 **MR. GRIFFON:** How you'd handle it, right.

9 **MR. POTTER:** This is Gene. Let me just observe
10 that probably the dirtiest work was done -- in
11 fact done by steelworkers.

12 **MR. DEMAIORI:** On the exit sampling, Gene, when
13 -- exactly when did Kaiser-Hill no longer make
14 that a requirement for exiting the site
15 employment as far as bioassay and body
16 counting?

17 **MR. POTTER:** Can you ask that again, please?

18 **MR. DEMAIORI:** Kaiser-Hill in the end no longer
19 required exit surveys, bioassay or body count.
20 When exactly did that come down?

21 **MR. POTTER:** That's what I thought you said.
22 I'm not aware that that ever happened. We lung
23 counted -- we did exit bioassays; we preferred
24 to do them by lung counting just because if
25 you've got a hit the individual is still at --

1 in your hands as you know the results right
2 away rather than, you know, sending a urine
3 sample off for 30 days and then trying to track
4 the person down. So we preferred to do exit
5 sampling by lung counting and at the end of
6 course you only had urine available for the
7 last few months when most everything was down
8 anyway. And in some cases people wanted urine
9 and so we always obliged them and did lung
10 counting and urine.

11 **MR. GIBSON:** This is Mike Gibson. Just to
12 answer your question, Tony. I don't know about
13 Rocky but I know the same contractor ran Mound
14 where I worked and the exit bioassay sampling
15 physical lung count and everything else was
16 optional.

17 **MR. DEMAIORI:** Absolutely. I knew the answer
18 to his question because I left Rocky Flats
19 after 26 years -- 27 years with -- with neither
20 lung count or bioassay and Dr. Bob Bistline had
21 been in more than one meeting with me when the
22 contractor tried to remove the lung counter
23 prematurely. And I had the DOE presence and we
24 were assured that it would stay as long as
25 possible but then in the end it was urine

1 samples and then after that it was, you know,
2 absolutely nothing.

3 **MR. POTTER:** Let me make it clear that we -- to
4 do exit urine sampling, of course you'd have to
5 give somebody a urine kit and say, you know,
6 please return this if they were leaving that
7 day you had -- so you had no notice. So we
8 always offered people at least while I was
9 there the opportunity to refuse exit bioassay
10 sampling rather than let them take a kit and
11 just throw it away or something.

12 **MR. GIBSON:** Right. I -- I did not say that -
13 - I did not say it was not offered but I was
14 agreeing with Tony that at least the practice
15 at Mound -- and I know we're not discussing
16 Mound, we're discussing Rocky -- but there
17 seems like a lot of similarities between the
18 contractor. It was optional, not mandatory.

19 **MR. POTTER:** Right. I don't think there's any
20 practical way to make it mandatory.

21 **MR. FITZGERALD:** Yeah, I got -- I got another
22 question. I guess in terms of the last part of
23 the EG&G tenure, and I'm talking about the
24 early '90s, there were documented statements
25 made by the Defense Board primarily since

1 that's the source of the reviews that we have
2 that EG&G management indicated that the
3 sponsoring companies of the subcontractors or
4 visiting workers as they were calling them,
5 would be responsible for bioassays. I guess
6 that leads to my question of to what extent you
7 have or did Kaiser have all the bioassay
8 records centralized? Were these in fact --
9 were bioassays done elsewhere? Do records
10 exist elsewhere? Do you have any sense of
11 that?

12 **MR. POTTER:** Yeah, my sense is that this -- I'm
13 not aware of any specific companies that did
14 their own bioassay. And certainly by the end,
15 you know, none of them are going to be DOELAP
16 accredited. Very -- Very darn few of them
17 would have been DOELAP accredited. But during
18 the EG&G era I'm not -- I'm not aware of any
19 companies doing their own, and if they did it
20 would probably have been in addition to
21 whatever Rocky Flats required.

22 **MR. FITZGERALD:** Yeah, I'm -- I'm just
23 expressing concern that they apparently were
24 expressing that the bioassays were being I
25 guess given the responsibility of the other

1 companies. And I'll send you a documentation.
2 I'm -- I'm just reflecting on what we were
3 reading in terms of the Defense Board reports.

4 **MR. POTTER:** Yeah, that might have been a
5 little wishful thinking on EG&G management's
6 part.

7 **MR. FITZGERALD:** Well, it could be. Could be.

8 **DR. ULSH:** I haven't seen the language that
9 you're talking about, Joe, but if you --

10 **MR. FITZGERALD:** Yeah, I'm going to -- I'll
11 give you copies of the reports. These were
12 health physics audit reports. The Defense
13 Board did I think two or three annual reviews
14 of Rocky and this was one of two or three major
15 concerns that they kept raising which was this
16 question of whether in fact all the workers
17 were being bioassayed under the tutelage or,
18 you know, oversight of in this case it was
19 EG&G. And therefore, that, you know, it was a
20 -- a surety that these were being done right
21 and --

22 **DR. ULSH:** I'm just wondering if -- and I
23 haven't seen the language. I don't know if
24 this is the case or not but could it be
25 interpreted that, you know, subcontractor A,

1 you're responsible to make sure that everyone
2 is bioassayed? That's a little different. I
3 mean in other words, you're going to be held
4 responsible if your employees aren't
5 bioassayed.

6 **MR. FITZGERALD:** Yeah, I'm not -- I'm saying,
7 you know, he's -- he's doing backup. That's a
8 possible interpretation and we'll go ahead and
9 give you the copies. I think at this point we
10 can go ahead and give you the copies of the
11 Defense Board reports. But this just gets to
12 the question of what you're saying is as far as
13 you know Kaiser and the operating contractor
14 pretty much had their arms around all the
15 bioassay records, pretty much knew who was
16 getting bioassayed then.

17 **MR. POTTER:** Yes, that's my belief.

18 **MR. DEMAIORI:** I guess I'd like to say that,
19 you know, I'm going over this in my mind but
20 the steelworkers did the bulk of what you call
21 the dirty work except for the exception of
22 beryllium. The DOE order came down for us to
23 reduce the number of beryllium workers. We had
24 about 430 beryllium workers at the time so we
25 reduced that number grossly to about 70. Then

1 the subcontractors came in and they kicked it
2 up to 1,400. Now, I had a plant problems
3 meeting with -- with the plant and the
4 corporate attorney was present in this plant
5 problems meeting, and I was questioning the DOE
6 interpretation of reduction of beryllium
7 workers because it was a job jurisdiction issue
8 for me. I was losing work. I didn't have the
9 qualified workers. So -- So it's not
10 necessarily true that we did do all the dirty
11 work because, you know, obviously because we
12 added 1,400 new beryllium workers during the
13 D&D phase, people who weren't previously
14 exposed. And they were all subcontractors.
15 Some -- Dr. Bob, you remember, some of them
16 you'll remember some of them were wearing ankle
17 bracelets so -- and we -- we brought in some
18 pretty colorful folks in the end to do some of
19 the work. So, you know, and I know it's not
20 SEC --

21 **MR. GRIFFON:** These new beryllium workers,
22 Tony, were they -- I mean I'm trying to imagine
23 the situation where they'd only be cleaning up
24 or dealing in beryllium. There must have been
25 mixed exposures, right, or potential --

1 **MR. DEMAIORI:** They were doing strip-out, you
2 know, ripping out lockers, ripping out, you
3 know, strip-out.

4 **MR. GRIFFON:** So no RAD --

5 **MR. DEMAIORI:** Removing material.

6 **MR. GRIFFON:** No RAD work at all? Nothing in
7 the RAD areas or --

8 **MR. DEMAIORI:** Well, we -- we played games with
9 that. We had a three-party agreement that at
10 2,000 d per rem the work went to the
11 steelworkers. And then our industrial
12 relations office decided no, that only meant
13 the steelworkers could be counted down below
14 2,000. Then it went back to the contractors.
15 And then as we got into full swing it even got
16 looser. So -- So there were a lot of
17 subcontractors working in ACAs. That is to say
18 that they weren't is not true because I've got
19 hundreds of counts of grievances on this
20 subject in particular about --

21 **DR. BISTLINE:** That was --

22 **MR. DEMAIORI:** -- jurisdiction.

23 **DR. BISTLINE:** -- uranium, Mark. A lot of it
24 was that these guys were doing.

25 **MR. DEMAIORI:** Mostly 444. A lot were

1 electricians. Gas, electrical ran on us and
2 stripped out half the building machines,
3 everything. Everything they could get their
4 hands on. Colorado Building trades, 865, you
5 know. And I -- I have grievance after
6 grievance after grievance. And that's why we
7 went into the plant problems meeting because I
8 didn't have the ability to supply the people
9 due to the DOE order. We actually removed our
10 people from the program.

11 **MR. FITZGERALD:** Just for the clarification,
12 everybody who had potential of having 100
13 millirem or higher certainly was monitored,
14 bioassay badged. Now, workers that the
15 radiological engineer would estimate would not
16 approach that, what was the -- were they
17 unmonitored? Basically it was a judgment call
18 not to monitor them?

19 **MR. POTTER:** Now, as I said, it was based on
20 training. It had nothing to do with the RAD
21 engineer's decision there. What I was talking
22 about with regard to the RAD engineer's
23 situation or decisions were things like lapel
24 samplers.

25 **MR. FITZGERALD:** Lapel samplers?

1 **MR. POTTER:** Yeah.

2 **MR. FITZGERALD:** And so the decision to train
3 was based on potential for 100 millirem?

4 **MR. POTTER:** I'm not sure what the decision to
5 train was based on in all cases. Presumably it
6 would be people who were required to work in a
7 CA or higher but as I said, the site tended to
8 overtrain in my opinion.

9 **MR. GRIFFON:** Even for these subcontractors
10 such as Tony was just referencing?

11 **MR. POTTER:** I'm not familiar with the
12 beryllium work but he is correct in other
13 industrial hygiene situations as well.
14 Asbestos work I think was primarily done by
15 subs. RAD work I was talking about, and I was
16 thinking of specifically, you know, not only
17 the number of incidents which involve
18 steelworkers which I was very familiar with but
19 also this 2,000 DPM limit that once the
20 steelworkers had gotten the building deconned
21 (ph) down to that level, then it was turned
22 over to construction trades or, you know, and
23 say the case of 71, Mac Tech subcontracted to
24 complete the work.

25 **MR. FITZGERALD:** You were -- You were

1 commenting on the fact that you thought too
2 many folks were being trained but can you tell
3 me how was that determination reached? I mean
4 obviously that's -- that's the trigger for a
5 lot of follow-on monitoring or what have you
6 but -- and some decision was made on priority.
7 You said perhaps workers that would need to be
8 in controlled areas. Was that done by the --
9 basically the health physics staff looked at
10 the work, proposed work, and determined who
11 would be given RAD worker II?

12 **MR. POTTER:** I'm not sure that I can answer
13 that question. Just make an observation that
14 each company seemed to have an idea who they
15 wanted trained and who they needed trained.

16 **MR. FITZGERALD:** Okay. So it was a company by
17 company judgment based on the criteria?

18 **DR. NETON:** I think the requirement was that
19 you needed RAD workers trained to have
20 unescorted access to a contamination area,
21 right?

22 **MR. POTTER:** Yeah.

23 **DR. NETON:** So -- So that -- that was the --

24 **MR. FITZGERALD:** It wasn't -- it wasn't even a
25 dose based. It was --

1 **DR. NETON:** No, it was just unescorted access
2 to the contamination area.

3 **MR. GRIFFON:** All linked to your surveying --

4 **MR. FITZGERALD:** Right, so --

5 **MR. GRIFFON:** So that -- therein lies the
6 problem.

7 **MR. FITZGERALD:** Well, the area as far as we're
8 --

9 **MR. GRIFFON:** Yeah.

10 **DR. NETON:** If the areas are posted properly
11 that's the criteria.

12 **MR. GRIFFON:** Right. That's the key.

13 **DR. NETON:** But like you said, many people
14 wanted unescorted access because it was a macho
15 thing. I just want to be able to go walk
16 around the plant myself.

17 **MR. DEMAIORI:** Well, one of the problems we
18 were faced with with the 2,000 d per rem rule
19 was that was removable. When we signed our
20 three-party agreement we also included in an
21 HCA under the DOE RAD-COM Manual direct
22 contamination that was embedded into the
23 concrete. That was 40,000 d per rem per
24 centimeters squared. But then DOE revised the
25 RAD-COM Manual and removed direct contamination

1 entirely so your subs like Gene Potter
2 articulated, Mat Tech, whatever, they were
3 removing direct contamination and going into
4 HCA's. They were scabbling the floors,
5 removing the concrete where the plutonium
6 nitrate had penetrated. So they were creating
7 HCA's from CA's. And so subcontractors were
8 exposed to a large amount of airborne
9 radioactivity. Absolutely. Make -- Make no
10 mistake. Bartlett Nuclear Services --

11 **DR. BISTLINE:** Right.

12 **MR. DEMAIORI:** -- Mac Tech, some of the other
13 subs who were doing that type of work.

14 **MR. GRIFFON:** I think the real test would be to
15 look at the database, '89 to 2006 versus -- and
16 I don't know if there's any record of which
17 individuals were -- were or are going to be
18 trained. Or -- Or if we could just get a
19 sense, '89 to 2006, just look at that database
20 and see how many workers were in the routine
21 program versus how many were on site doing D&D.
22 And if it's a high percentage then you could
23 account for that --

24 **DR. NETON:** Yeah. Yeah.

25 **MR. GRIFFON:** -- that your co-worker model's

1 going to work.

2 **DR. NETON:** Exactly. I think the SEC issue --

3 **MR. GRIFFON:** Right.

4 **DR. NETON:** -- is resolved.

5 **MR. GRIFFON:** Right.

6 **DR. NETON:** Right.

7 **MR. GRIFFON:** So we need -- I think that'll
8 answer another question.

9 **MR. POTTER:** This is Gene again. We
10 investigated -- I mean everybody is making a
11 point that there was some, you know,
12 significant work going on and -- and there was
13 significant potential for internal
14 contamination, and that is -- that is true.
15 And we investigated probably over 200 incidents
16 a year and probably assigned dose in about half
17 those cases. But outside of wounds, in the
18 last ten years or so there were no really big
19 intakes.

20 **MR. GIBSON:** Well, this is Mike Gibson. If I
21 heard Mark correctly just a minute ago -- you
22 were a little faint, Mark -- but when you
23 mentioned --

24 **MR. GRIFFON:** Tired.

25 **MR. GIBSON:** -- comparing the databases I think

1 you said prior to '89 and then from maybe '89
2 after. And, you know, I would -- I would
3 totally agree with that because if the RAD
4 protection program significantly changed,
5 whether the professionals deemed it to be
6 correct or not, there could have been a lot
7 more exposures shown than what there possibly
8 could have been based on if they would have
9 kept the RAD detection program the way it was
10 back in the production days.

11 **MR. GRIFFON:** I think I know what you're
12 getting at, Mike. If -- If the frequency is
13 lower in those later years, the way NIOSH -- if
14 -- assuming that they have everybody or a large
15 percentage of these people every year covered,
16 it's going to fall out because you'll have --
17 the point you're getting at is that the minimum
18 detectable dose is going to be higher if you
19 only have annual urinalysis as opposed to
20 quarterly. And -- But that's going to, you
21 know -- that's -- that might be -- make a
22 situation where they're assigning higher doses
23 from the co-worker model. But my real question
24 is -- is that -- is there or were there enough
25 -- a high enough percentage and were the

1 highest potentially exposed people in this '89
2 to 2006 data, you know, or 2005, whatever. And
3 --

4 **MR. GIBSON:** Okay. My point --

5 **MR. GRIFFON:** -- co-worker model --

6 **MR. GIBSON:** My point, Mark, was if you went
7 from a quarterly to an annual bioassay sample,
8 there could have been, let's say, exposures
9 over the decision limit maybe -- although maybe
10 not that high but chronic almost all year long.
11 And then at your annual bioassay it may still
12 come out above the DL and may not show, you
13 know, a rem of exposure, 750 millirems, but
14 they could have been getting that chronic all
15 year long.

16 **MR. GRIFFON:** Right. And that's --

17 **DR. NETON:** That's exactly how we approach it
18 for all the other sites that we do. We do a
19 missed dose calculation based on exactly those
20 type of parameters.

21 **MR. GRIFFON:** That's what the co-worker model
22 will assume is that it's a chronic for that
23 whole time period and given the MDA of that
24 time period of a, you know -- so I think that
25 would cover it, Mike, as long as the right

1 people are in the database to begin with.

2 **MR. GIBSON:** Okay.

3 **MR. GRIFFON:** As long as there's enough data
4 there, yeah.

5 **DR. ULSH:** And we do know that with regard to
6 that last question, Mark, were they trying to
7 monitor the highest exposed people. I mean we
8 know exactly what the criteria was for
9 monitoring and that was anyone expected to get
10 100 millirem a year.

11 **MR. GRIFFON:** Well, they (unintelligible)
12 anyone who had (unintelligible) -- I mean RAD
13 worker II training.

14 **DR. NETON:** Well, anyone -- anyone who entered
15 a contaminated --

16 **MR. GRIFFON:** They're kind of linked, you know.

17 **DR. NETON:** Well, anyone who entered a
18 contamination area was monitored -- went into a
19 monitored program.

20 **MR. DEMAIORI:** Yeah, the RWP would drive that.
21 Well -- Well, the minimum requirements for
22 entering into a CA. And so those are all, you
23 know, matters of record.

24 **MR. GRIFFON:** I mean there's those two things
25 going on. Jim's right. The technology

1 shortfall radionuclide was one thing -- one
2 reason for the BZA's but also the -- the -- I
3 think the -- there was a drive to -- to not,
4 you know -- to at least limit the number of
5 people on a routine program in some sites.

6 **DR. NETON:** But if you were RAD worker II
7 trained you were on a routine sampling no
8 matter whether you entered an RCA or not.

9 **MR. GRIFFON:** Right.

10 **DR. NETON:** That's what I'm hearing.

11 **MR. GRIFFON:** That's what I'm hearing, yeah, so
12 --

13 **DR. NETON:** If that's true --

14 **MR. GRIFFON:** -- if we can determine that --

15 **DR. NETON:** Yeah.

16 **MR. GRIFFON:** -- and it's a large percentage, I
17 think we're covered. Yeah. Yeah.

18 **MR. FITZGERALD:** Yeah. That's the trigger. So
19 --

20 **DR. MAURO:** I've got a question and it goes
21 back to the movie that we saw in Denver and the
22 movie which I found very probable. The
23 conversation we're having around the table
24 right now sounds like a very controlled
25 situation where people are identified of who's

1 going to be monitored, who's going to be where,
2 who's going to do what. And -- but the movie I
3 saw showed what I would say from the point of
4 view of outdoors, the buildings coming down.
5 What I saw was large structures being torn
6 down, large numbers of people outdoors, large
7 amounts of dust and plumes, airborne
8 radioactivity moving out in an outdoor setting.
9 And so the story we're talking about now sounds
10 like a very well controlled health physics
11 operation. But the movie I saw shows something
12 that seems to be a bit different in terms of
13 all of these folks -- and maybe you could help
14 me out. All of outdoors, I'm imagining large
15 numbers of people outdoors, working through the
16 destruction work outdoors when the building
17 came down. I'm not quite sure when those
18 buildings actually were brought down. Was that
19 at a point where all of the -- I guess the hot
20 stuff or the hotter stuff has already been I
21 guess carefully archeologically removed so to
22 speak? And what came down was basically
23 fundamentally clean? Or -- Or do we have a
24 situation where we could have had circumstances
25 where when the -- when that dust cloud puff

1 came up and moved out there might have been
2 some workers out there who were never
3 monitored, never part of the monitoring
4 program, that could have been exposed to levels
5 that were detectible or of some concern? I'd
6 like to hear a little bit more about that.

7 **DR. BISTLINE:** Maybe I can speak to it some
8 being I was program manager for the Department
9 of Energy at the time. And all of the -- all -
10 - all but the last couple of buildings of the -
11 - of the plutonium buildings had to meet final
12 -- a final survey criteria. And so the last
13 couple of buildings that were brought down were
14 basically hot. They were -- they were deconned
15 down to as low as they could but -- where they
16 could -- where they could get to the
17 contamination but they did have contamination
18 associated, but it was a very controlled
19 condition where the -- where there was a lot of
20 air monitoring going on with the state EPA and
21 everybody looking over their shoulders. And --
22 And under controlled conditions and very slow
23 takedown for the most part there with the
24 equipment to track -- eliminate -- and using a
25 lot of water with the spray and so forth.

1 **DR. MAURO:** In the movie we did see the spray
2 but I have to say that I also did see
3 notwithstanding the spray --

4 **DR. BISTLINE:** There was dust. There was dust
5 from time to time.

6 **DR. MAURO:** And the continuous air monitors,
7 you're saying, were strategically placed?

8 **DR. BISTLINE:** There were high vols (ph) and
9 low vols.

10 **DR. MAURO:** High vols and low -- and that data
11 -- that data are available?

12 **DR. BISTLINE:** Yeah.

13 **MR. GRIFFON:** So I guess my -- my point is, you
14 know, we can hypothesize for the rest of the
15 afternoon but if we have this data and we can
16 compare how many people were monitored bioassay
17 versus how many people were on site, that would
18 give us at least a sense of what is -- is most
19 of the population because they're not going to
20 rely -- from what I hear you're not going to
21 rely on air monitoring. You're going to rely
22 on bioassay.

23 **DR. ULSH:** And that is true. We will rely on
24 bioassay. But also keep in mind, John, the
25 situation that you're describing with, you

1 know, a building coming down, maybe some amount
2 of plume of contaminated dust, that's
3 environmental dust. That's exactly -- I mean
4 that would be registered on our environmental
5 list. That would be assuming we're doing
6 environmental measuring.

7 **DR. NETON:** Right. But you've got to remember
8 if you've got a population of exposed workers
9 like Mark's suggesting, if 50 percent of the
10 people are all non-detectible who were
11 monitored, they're presumably breathing the
12 same air as the general people walking around
13 if not higher. You've got a bounding situation
14 there. I'm not saying we'd assign that but,
15 you know, if we look at --

16 **MR. GRIFFON:** If we look on the other hand it
17 turns out it's like ten percent then -- then
18 you -- then I might have some more questions.

19 **DR. NETON:** Right. But then -- then it's a
20 matter of what -- what dose do you assign as
21 opposed to can you assign anything, in my mind.

22 **MR. ELLIOTT:** Were there any specific studies
23 done during the takedown of the building to
24 look at dust suppression technique and
25 determine whether or not it was viable in that

1 set of circumstances? Because we have that as
2 well.

3 **DR. BISTLINE:** The state health department was
4 keeping a very close tab on that. They --
5 They were requiring sampling -- strategically
6 located sampling at all times.

7 **MR. ELLIOTT:** And the dust suppression
8 techniques, applying water being instrumental
9 for this -- for asbestos but also for RAD.

10 **DR. BISTLINE:** No, no. Asbestos was pretty
11 much cleaned up at the time. Right, it was RAD
12 that they were concerned about.

13 **MR. DEMAIORI:** I'd like to point out that the
14 buildings that did come down during '76 was the
15 fire building with the high-fired oxides in
16 particular with the false ceiling in that.
17 And, you know, that surprised a lot of people
18 because that was one of our most contaminated
19 facilities. And so -- you know, and I read the
20 reports, low risk for the population and work
21 force and everybody bought off on it, you know.
22 But -- But I will tell you that the great
23 concern to my members just due to the nature of
24 the building and the history and what was
25 really still inside of it.

1 **MR. GRIFFON:** I think that's in our next course
2 of action is to look at the bioassay data for
3 those inventories and it can give us a general
4 sense of how many workers per year were on site
5 for D&D for that time period. I think that
6 would be helpful to come down on assessment.

7 **MR. FITZGERALD:** No, I -- I think -- I think
8 the question was proportioned bioassay that the
9 -- I think the secondary issue is whether the -
10 - I think that dust as an issue would be later.
11 That might be something to look at. Right now
12 I think that what we're hearing is that it
13 sounds like everything was centralized. I'll
14 send you the Defense Board reports but again
15 that was the early period before Kaiser came on
16 board so that was the last part. But that kind
17 of again is a -- could be interpreted a number
18 of different ways. I think --

19 **MR. GRIFFON:** And I'm not sure how minor of a
20 job it is to get a sense for how many people
21 were on site for each year either because with
22 all these subs it might not be an easy number
23 to get to. And I think it's a very important
24 number, especially with some of the things that
25 Tony's raised. You know, my concern would --

1 would also be if you, you know -- I've -- I've
2 seen situations where CA's are defined and then
3 just the situation you described, you know.
4 You can say, okay, it looks -- it looks pretty
5 reasonable here. We don't require it for this
6 area. And then they start hammering into the
7 cement floor. Well, nobody knows because
8 nobody's looking for it but you've got
9 contamination being spread. So we hope that's
10 not the situation but, you know, I think that's
11 something we want to be looking for so we need
12 a pretty good sense of how many workers were on
13 site.

14 **MR. DEMAIORI:** Absolutely. It's like when we
15 found all the beryllium in the lockers in 444
16 locker room ten years later after we baselined
17 that locker room. Okay, we did a complete
18 sampling of the locker room and everything was
19 down below limits once we discovered beryllium
20 was a respiratory hazard. And then when we --
21 when we went into the D&D, the actual
22 disassembly, we spread beryllium again because
23 it was stuck in the cracks, you know, in -- in
24 large quantities. I mean, Bob, you remember
25 that.

1 **MR. FITZGERALD:** I guess one last question.
2 You mentioned that other than rude intakes
3 there wasn't anything that was major in the way
4 of -- of I guess half-cell uptakes in the late
5 '90s? Is that -- Is that a fair
6 characterization?

7 **MR. POTTER:** Yes.

8 **MR. FITZGERALD:** Okay.

9 **MR. GRIFFON:** Short answer.

10 **DR. BISTLINE:** Hey, Gene, wasn't it about --
11 about the time Kaiser-Hill came in that -- that
12 the on-site bioassay lab really kind of closed
13 -- was closed down and you went to contracting?
14 Or was it a little earlier than that?

15 **MR. POTTER:** Let me see. In '95 they had
16 started to -- I -- let's see, '94/'95 they had
17 already let some off-site bioassay contracts.
18 And the on-site lab lasted until early '97 I
19 believe.

20 **DR. BISTLINE:** Okay. That was kind of my
21 recollection, too, and so all the bioassay was
22 being routed through the on-site laboratory
23 while it was in existence. I know that.

24 **MR. GRIFFON:** And after '97 you had -- you had
25 subcontracted bioassay labs?

1 **DR. BISTLINE:** Yeah. But it was still going
2 through the system.

3 **MR. POTTER:** Right. There was an analytical
4 services group set up when Kaiser-Hill came in,
5 and when the on-site lab closed there still was
6 a site receiving station and a site database
7 that handled the comings and goings of bioassay
8 samples and the data packages.

9 **MR. LITTLE:** This is Craig Little. I want to
10 hearken back a minute or two to the talk about
11 termination bioassay. I found a form here
12 that's dated 2005, Rocky Flats Radio Watch for
13 (unintelligible) Processing Form. And I want
14 to read you a pertinent part. Termination
15 bioassay monitoring is required. When a
16 current or former participant in the bioassay
17 program terminates employment or concludes work
18 involving the potential for internal exposure.
19 I understand this requirement and either am
20 exempt since I have never worked as a RAD
21 worker, two, have not entered a CA, HCA or ARA
22 since the date of my last bioassay. I
23 acknowledge receipt of termination bioassay
24 kits and sampler request kits. I realize that
25 failure to submit the requested samples

1 constitute refusal on my part to participate in
2 terminated bioassay program or have elected to
3 waive the bioassay monitoring offered by
4 internal survey. And it's signed by the
5 outgoing employee, checked and signed by the
6 outgoing employee.

7 **MR. DEMAIORI:** Just for the record, on December
8 31st when I was laid off, there was no bioassay
9 program. There was no lung counting program in
10 existence and I had to get special exception to
11 get beryllium testing at National Jewish, just
12 for the record.

13 **MR. LITTLE:** Not as of August -- as of August
14 '05 it was.

15 **MR. DEMAIORI:** Okay, yeah. But December 31st,
16 2005, none of this was available to me or -- or
17 my officer. So I just want to let you know
18 that. And of course, I was the last guy to
19 leave but --

20 **DR. NETON:** You turned the lights out, right?

21 **MR. GRIFFON:** Okay. Anything else on D&D? I
22 think we want to move on to data reliability
23 before it gets too late.

24 **DR. ULSH:** Do you want take a comfort break
25 first?

1 **MR. GRIFFON:** Yeah, let's take a -- let's take
2 five/ten minutes. I guess in ten minutes
3 anyway, so ten minutes.

4 (Whereupon, a brief recess was held from 3:05
5 p.m. to 3:20 p.m.)

6 **DR. WADE:** Okay, let's get back to business.
7 One last long pull.

8 **DATA RELIABILITY**

9 **MR. GRIFFON:** All right. We're on our last --
10 the good news, on our last agenda item. The
11 bad news, it may be one of the lengthier ones
12 although I think some of this stuff it's
13 ongoing work so I'm not sure how long this will
14 take. Data reliability, the topic. And maybe
15 to start off, Brant, I -- I sort of in my mind
16 anyway I've grouped this into two separate
17 things. One is the data reliability issues
18 where we've asked you to look at the hard copy
19 records versus the electronic records. And --
20 And the other subset is the specific case
21 issues which sort of led to all these -- the
22 safety concern logs, the other logbooks, et
23 cetera. So maybe we can start off with just
24 summarizing the database question. And I think
25 what's happened since the last meeting that

1 we've had is you -- you -- if I can -- I'm not
2 sure I can do this justice but I think you --
3 you searched some of the claimants, some of the
4 NIOSH claimants and you went into their hard
5 copy records and you did a comparison versus
6 external database -- external dosimetry records
7 and internal?

8 **DR. ULSH:** I think that is correct.

9 **MR. GRIFFON:** And did you look at any other --
10 that was -- and then you had a breakdown of
11 what might have been -- I guess my question,
12 and I -- I've had a crack at this, but what was
13 raw data records versus what was sort of HIS 20
14 printouts or -- or whatever?

15 **DR. ULSH:** Well, the thing that we were always
16 comparing against is HIS 20, but the question
17 is what were we comparing to HIS 20. And
18 during the earlier years those raw records for
19 lack of a better term would have been the what
20 do you -- what do you call it, the beta gamma
21 worksheets?

22 **MR. LITTLE:** Yeah. The, yeah, beta gamma
23 worksheets. I can look at -- I can pull one up
24 and look at it.

25 **MR. GRIFFON:** Yeah, beta gamma worksheets and

1 what -- what -- when you say early years, what
2 years would that mean?

3 **MR. LITTLE:** '66 to '69 or '65 to '69.

4 **DR. ULSH:** Okay. After that we had some
5 printouts -- was it health physics database or
6 was it RHRS?

7 **MR. LITTLE:** RHRS.

8 **DR. ULSH:** It was RHRS which were I believe the
9 dose of record at the time.

10 **MR. GRIFFON:** And they would do these printouts
11 though, right? I mean earlier?

12 **DR. ULSH:** Yes, RHRS is the earlier database
13 and those were the doses of record at the time.
14 We compared those to HIS 20 as well for those
15 later years.

16 **MR. GRIFFON:** And that would range from '70
17 'til -- do you have any sense or --

18 **MR. LITTLE:** Well, I don't -- maybe '75 or '76
19 it seems.

20 **MR. GRIFFON:** Okay. '70 to '75 or 6, something
21 like that?

22 **MR. LITTLE:** In that ballpark, and I can -- I
23 can check that.

24 **MR. GRIFFON:** Good enough. I just want to get
25 a sense. And then what came next? The HDSL or

1 what?

2 **DR. ULSH:** Health Physics Database, right?

3 HPDB?

4 **MR. GRIFFON:** HPDB.

5 **DR. ULSH:** Those acronyms. Is that the next
6 database?

7 **MR. LITTLE:** Jim maybe --

8 **DR. ULSH:** Yeah, Jim Langsted, are you on the
9 line?

10 **MR. LANGSTED:** Yes, I am.

11 **DR. ULSH:** Okay. So can you give us the
12 breakdown in terms of what was the dose of
13 record over the years? It started out up to
14 maybe 1970 was the written records, right? And
15 then after that came RHRS.

16 **MR. LANGSTED:** No, starting back at the
17 beginning was written record up to about 1976.
18 Then came the health physics database.

19 **DR. ULSH:** Oh, okay.

20 **MR. LANGSTED:** And then after that was the RHRS
21 and then the HIS 20.

22 **MR. FALK:** Well, the health science was in
23 there.

24 **MR. LANGSTED:** And Roger points out there was a
25 health sciences database in there, too.

1 **MR. GRIFFON:** Ah, I thought I saw HSDS,
2 something like that. All right. Thank you.

3 **DR. ULSH:** So there were a number of iterations
4 of electronic databases that preceded HIS 20.

5 **MR. GRIFFON:** And you're -- you're carefully
6 using the term the -- the dose of record?

7 **DR. ULSH:** Yeah, I mean --

8 **MR. GRIFFON:** I mean is there any -- we went
9 through this with Y-12. Did -- Was there an
10 acceptance from DOE that -- that database
11 records would be the "dose of record" or --

12 **DR. ULSH:** Jim, do you have any answer to that?

13 **MR. LANGSTED:** I -- I personally do not recall
14 any DOE buyoff on specifically what was the
15 dose of record.

16 **DR. ULSH:** Okay. So I was being fast and loose
17 with my term there, Mark. You raised I think
18 this issue at the Denver Board meeting but for
19 some of the later years when we were comparing
20 one of the predecessors of HIS 20 to HIS 20 you
21 -- you mentioned that you would like to see
22 perhaps what preceded, you know the hard copy
23 that -- that came before. And I think what
24 we've done is that we've pulled some of the
25 worksheets for the later years and we're in the

1 midst of comparing that to HIS 20 now in
2 response to your concern.

3 **MR. GRIFFON:** That was my question really, was,
4 you know, I wouldn't be surprised if you had a
5 pretty good match between database printouts
6 and the archived database. As a matter of fact
7 I would hope it would pretty well be 100
8 percent.

9 **DR. ULSH:** Well, yeah. I mean, well --

10 **MR. GRIFFON:** It may not -- it may not be
11 perfect either but --

12 **DR. ULSH:** Right. When you migrate from
13 database to database that could be.

14 **MR. GRIFFON:** Right. Right.

15 **DR. ULSH:** So that would be about -- part of
16 the way but --

17 **MR. GRIFFON:** More important would be to step
18 back.

19 **DR. ULSH:** Right. Yeah. So I think we're
20 doing that now. We've located some of these
21 beta gamma sheets, TLD worksheets for some of
22 the later years and we're in the midst of
23 comparing that to HIS 20 now to address your
24 concern.

25 **MR. GRIFFON:** And the same then on the bioassay

1 side of this I guess, the same kind of
2 question.

3 **MR. LITTLE:** You've done some bioassay -- I'm
4 trying to pull that up to refresh my memory.

5 **DR. ULSH:** And there we would have compared the
6 cards, the bioassay cards in the earlier years
7 up to what year?

8 **MR. LITTLE:** Well, I've got some -- I've got a
9 mix up to '84. It may be higher than that from
10 -- from -- I've got them as far back as '62
11 comes fine up to '89. Now, those -- there are
12 no cards for '89, under HSDB compared to HIS
13 20.

14 **MR. GRIFFON:** Okay.

15 **MR. LITTLE:** But for the -- for up to like 1970
16 there would have been cards.

17 **MR. GRIFFON:** So in the claimants' files up to
18 '70 or so, you'd have cards in there?

19 **MR. LITTLE:** Right.

20 **MR. GRIFFON:** And then after that it would be
21 database, iterations of a different database.
22 Okay. And are you doing any -- same question
23 as before. Are you going back with that? Are
24 you attempting to go back the same way as Brant
25 just described for bioassay records as --

1 **MR. LITTLE:** Well, we really -- that's what
2 we've really done essentially. We've done it
3 for -- because the -- the -- the beta gamma
4 worksheets only go up to 1970 and so we didn't
5 go beyond that with those. And we haven't yet
6 started looking at the -- we're just starting
7 to look at the TLD worksheets.

8 **MR. GRIFFON:** Okay.

9 **MR. LITTLE:** It brings us into the more modern
10 era on the external side. The internal side
11 we've got the data that -- we've got cards up
12 to 1970 and then HSDB to compare with HIS 20
13 after that.

14 **DR. ULSH:** But is there anything that precedes
15 HSDB in like a written record that would have
16 been prepared before it was entered into HSDB?
17 I don't know the answer to that.

18 **MR. LITTLE:** I don't know the answer to that
19 either.

20 **DR. ULSH:** Roger, are you on line?

21 **MR. FALK:** I am trying not to be.

22 **MR. GRIFFON:** That's an honest answer.

23 **DR. ULSH:** Do you know the status of whether or
24 not there would have been any handwritten
25 records or how late in time you might find

1 handwritten records?

2 **MR. FALK:** For -- For what?

3 **DR. ULSH:** For bioassay.

4 **MR. LITTLE:** Bioassay.

5 **MR. FALK:** Bioassay? There are probably urine
6 log books but then those were actually directly
7 entered into the health sciences database but
8 there are -- there are probably those which are
9 archived at the Federal Center.

10 **DR. ULSH:** So we're in the same logbook mode
11 which you're going to talk about a little bit
12 later.

13 **MR. GRIFFON:** Okay.

14 **DR. ULSH:** If there is anything that precedes
15 the electronic data in a logbook.

16 **MR. GRIFFON:** And that leads me to my last
17 question on this topic. It's in the site
18 profile. I actually went back before this
19 meeting and looked at the site profile again.
20 It's always good to reflect back. And the
21 second -- I think it's the second attachment or
22 the first attachment in the internal dose
23 section, and that's the bioassay one -- there's
24 an in vivo and bioassay one. Somewhere in
25 there, I even think it was in the

1 acknowledgement at the end where the author
2 acknowledges certain people for -- for
3 identifying or pulling logbooks, urine logbooks
4 on which a lot of this analysis of the MDA to
5 be conducted. And my sense earlier was that we
6 didn't have logbooks. Now, maybe they were all
7 gone to this Federal Center, you know. Maybe
8 they're archived now or whatever but it seems
9 like logbooks exist and that would be -- that's
10 -- when we started this whole discussion we
11 said if you have any urinalysis logbooks to
12 compare raw records that would be the primary -
13 -

14 **DR. ULSH:** Roger, do you still have those
15 logbooks in your possession or are they all at
16 the --

17 **MR. FALK:** No, it turned out that I was able to
18 find all but up to 1971. And those all have
19 been returned back to the -- back to the
20 Federal Center records storage system.

21 **DR. ULSH:** So, Mark, I think I can --

22 **MR. GRIFFON:** Well, it's just -- it's just --
23 prior to this I understood that they -- you had
24 looked and weren't able to locate anything but
25 now it seems that they -- they exist so --

1 **DR. ULSH:** Well, you might be confusing
2 different kinds of logbooks. We've got the
3 urinalysis logbooks that Roger's talking about.
4 There's the foreman's logbooks. There's the
5 contamination control logbooks.

6 **MR. GRIFFON:** Yeah, I don't -- I don't think
7 I'm confusing logbooks but at any rate it's --
8 I didn't notice this in the site profile before
9 either so this is the reference I'm going from
10 now. I think it would be worthwhile to at
11 least sample those logbooks if we can. Okay.
12 So again, not, as Jim and -- Jim and I have
13 been down this road before, you know.

14 **DR. ULSH:** Yeah.

15 **MR. GRIFFON:** We're certainly not looking for
16 any kind of -- all of the logbooks but the --

17 **MR. FALK:** But now, those -- those -- those are
18 not always logbooks. They are the data log.
19 Normally I found them in sheets which were in
20 labeled folders but they are -- are -- but they
21 are the data logs.

22 **DR. ULSH:** So Roger, let me ask you. If we
23 were to go back and pull some sheets or
24 logbooks, you know, some representative samples
25 across the years, and then could -- could pull

1 the results out of HIS 20 just to balance them
2 against each other, how hard of a task would
3 that be? I mean is that a manageable thing to
4 do?

5 **MR. FALK:** Well, it -- it is -- it is difficult
6 to find people specific because they are in the
7 sequence of the -- of the sample number. They
8 are not organized by person. But it's probably
9 doable but it's going to take time.

10 **DR. ULSH:** So they don't have identifiers that
11 would let you pull a result out of HIS 20; is
12 that what you're saying?

13 **MR. FALK:** They will likely have the person's
14 name and also the Rocky Flats employee number.

15 **MR. LITTLE:** They're going to be sequential or
16 something and so finding --

17 **DR. ULSH:** Well, we can start with the -- the -
18 - the worksheets or the logbooks --

19 **DR. NETON:** Yeah.

20 **DR. ULSH:** -- start there.

21 **DR. NETON:** Well, you're not really talking
22 about finding -- finding claimants here.
23 You're just talking about matching up.

24 **DR. ULSH:** Right.

25 **MR. LITTLE:** Right.

1 **DR. NETON:** Theoretically if it's in the
2 logbook it should be in the database so you
3 don't really have to identify --

4 **DR. ULSH:** We can put that down as an action
5 item, Mark.

6 **MR. GRIFFON:** Anything else on the database
7 question? I think that was something that I
8 was probably (unintelligible). All right.

9 **SAFETY CONCERNS**

10 I'm going to move on to the other part of the
11 data reliability question which is sort of this
12 -- this path that we've gone down on the
13 specific issues raised, some from the petition
14 itself and some from SC&A. And maybe Joe has
15 indicated, Brant, he'd like you to maybe start
16 with an overview of where things stand and --

17 **MR. FITZGERALD:** Yeah, just from the last --
18 last conference call we had here in Cincinnati,
19 what we want to do is simplify the -- the -- I
20 wouldn't call it white paper but the report
21 that we prepared before the Denver meeting
22 which was about 18 pages of review on the issue
23 to a briefer six or seven page just, you know,
24 roadmap of what needed to be accomplished, and
25 we did that. We circulated that. Brant took a

1 look at it and I think we're on the same page
2 on that. And that's the piece that we're using
3 for essentially the status of this thing and
4 what closure would mean. And why don't you go
5 ahead?

6 **DR. ULSH:** So this is the --

7 **MR. FITZGERALD:** Safety concerns.

8 **DR. ULSH:** Is that this one?

9 **MR. FITZGERALD:** That -- Right.

10 **DR. ULSH:** This is the official?

11 **MR. FITZGERALD:** No, that's the -- that's the
12 status report from Kathy, basically. She can't
13 be here; she can't be on the phone so that's
14 kind of her status.

15 **DR. ULSH:** There were a couple of things in the
16 May 19th, 2006 document that Joe sent over I
17 guess it was last week. And like Joe said,
18 it's a distillation of the previous document.
19 And it boils down to there are a couple of
20 things that SC&A is proposing that we look at.
21 One is a group of specific safety concerns and
22 I'm prepared to talk about those today. I
23 should mention that the -- the copy of the
24 safety concerns has been posted on the O-drive
25 in the Rocky Flats folder in the usual place.

1 So you see on table 1 here from SC&A's document
2 there are two, three, four, five -- seven --
3 seven specific safety concerns. I'm going to
4 go through those briefly today because of the
5 hour, and the full text of those safety
6 concerns is at the O-drive. I also have hard
7 copies here if anyone wants to pick one up.
8 And then the second part is various logbooks,
9 the second group of documents. We're not as
10 far along on that. We've located the logbooks,
11 some of them. We've looked at samples of them.
12 Craig, do you want to characterize what we've
13 seen so far?

14 **MR. LITTLE:** I looked at some. I can't say I
15 did a comprehensive look at any single one but
16 I pulled three or four or five contamination
17 control logbooks and foreman's logbooks and
18 looked at them. I think Kathy had concluded
19 that the foreman's logbooks weren't of much
20 value in terms of trying to describe incidents
21 and things like that. Most of the information
22 in those are things like so and so took a day
23 off; his wife's going to have a baby or
24 somebody has taken vacation. And I'm not
25 saying that's exclusively the way it is but

1 there is that kind of information. It's more
2 people movement kind of stuff. The
3 contamination control logbooks range everything
4 from the cafeteria read 20 DPM and that's all.
5 There are a couple things like that on the page
6 and that's essentially it to leaking -- leaking
7 pipe or brought in supplies, monthly supplies
8 or took swipes, things of that -- you know,
9 contaminate control sorts of things. And very
10 occasionally there are names in those logbooks
11 where it would mention a worker by name. And
12 we went into that with there was still five
13 workers that -- I think they were five
14 petitioners that Kathy had brought up by name
15 and we actually went into one of the logbooks
16 from the period of time suggested and tried to
17 find this guy's name. And we didn't get
18 through the entire logbook but we found his
19 name one time and it had nothing to do with
20 anything having to do with an exposure rate or
21 anything of that nature. Not to say that
22 there's not information available but it's
23 going to be a needle in the haystack time
24 trying to find anything that's applicable to
25 somebody's dose or dosimetry and I -- I'm not

1 at all convinced that we're going to find any
2 useful information, and I think the return on
3 effort is going to be very small. Now, there
4 is a collection of about 20 logbooks from the
5 group that Kathy selected that have been put on
6 CD and I think they were sent out to her way
7 last week. And I have a copy of that also and
8 I haven't even cracked the document yet. I
9 just haven't had time to go through it. But we
10 will be working. Now, the problem with all of
11 these, of course, is that they're all
12 facsimiles; that is PDF or handwritten
13 documents so they're not searchable documents.
14 And it would be as tedious as going through a
15 logbook. Not quite as tedious as going through
16 a logbook turning the pages but it's going to -
17 - it's going to -- it'll be good insomniac type
18 work.

19 **MR. LANGSTED:** This is Jim Langsted. I have
20 looked through the first two of those 771
21 building radiation monitoring form and
22 logbooks.

23 **MR. LITTLE:** Good.

24 **MR. LANGSTED:** And very similar to what Craig
25 said, a lot of personnel or, you know,

1 radiation monitor vacation schedule, that sort
2 of thing. Occasionally there's a mention that
3 there was a leak and this particular glove box
4 was cleaned up on night shift. But very seldom
5 if any names and no quantitative data related
6 to that.

7 **MR. GRIFFON:** And these logbooks you said they
8 were sent out on CD. Can they be put on the O-
9 drive?

10 **MR. DEMAIORI:** I've got a question. Did you
11 pull the skin count logbooks out of the decon
12 rooms?

13 **MR. LITTLE:** No, the only ones that I've looked
14 at really are the ones that Kathy had
15 requested, and I didn't look at all of those.
16 There are --

17 **MR. DEMAIORI:** Because I believe there was --

18 **MR. LITTLE:** -- 22 boxes of those.

19 **MR. DEMAIORI:** Yeah, I believe that was part of
20 the request was all the decon logbooks that
21 would give you actual readings of skin
22 contaminations and incidents of individuals.
23 At Rocky Flats we had the three-wash rule, two-
24 wash rule where -- where you can decontaminate
25 in the decon room, you know, until the skin

1 turned red or until it was decontaminated, so
2 that would provide a lot of additional
3 information that -- that would never get to
4 body count or bioassay sampling.

5 **MR. FITZGERALD:** Would those have individual
6 names?

7 **MR. DEMAIORI:** Absolutely. Name, numbers,
8 everything. When I removed glove box 134 east
9 which was actually where the fire was in 777
10 everything we touched, pulled a screw off the
11 wall, it would be 250/300 d per rem -- 1,000 d
12 per rem. So my crew got skin cons every day
13 because they refused to wear surgeon's gloves.
14 Because prior to the RAD Con Manual in 1989
15 sheet metal workers were kind of hard-headed.
16 They were supposed to be wearing gloves but
17 every time you turned around a glove would rip
18 and they'd still work. So we were in the decon
19 room daily; so it would show the releases,
20 things of that nature. The decon logbooks are
21 a great source, and I believe that Kathy had
22 asked for those also.

23 **MR. FITZGERALD:** Yeah, there's about ten of
24 them listed here on the second page of
25 attachment one.

1 **MR. DEMAIORI:** I wouldn't bite into the
2 foreman's logs too much because that's exactly
3 what it is is the management of personnel. So
4 there's more in the contamination control
5 logbooks which were negotiated to actually in
6 the early '90s for -- for job classification.
7 And there's a reason we negotiated them,
8 because we were having a lot of unreported
9 contamination incidents. So we actually
10 negotiated it as a full-time job for the OCP's.

11 **DR. ULSH:** Okay. We'll -- We'll focus on
12 those from the ones that you raise.

13 **MR. LITTLE:** Yeah, they're all still sitting
14 there waiting to be scanned, yeah.

15 **DR. ULSH:** So we need to give those priority.
16 Okay. The first set of documents that SC&A
17 listed in their -- their write-up were safety
18 concerns and I sent around a handout. We've
19 looked at all the safety concerns listed in
20 this table and I'd like to walk through and
21 just kind of summarize what they turned out to
22 be and our evaluation of them. Again, I have
23 hard copies of the whole thing in a box right
24 over here. Okay. The first one is 71-4 and
25 the concern that was expressed was that an

1 employee was concerned that his film badge
2 results for December 1970 did not show the high
3 levels of neutron exposure which according to
4 instrument readings and film badge results of
5 other monitor on the same special job should
6 have been expected. Okay. The resolution on
7 this was the supervisor talked about the
8 inherent limitations of neutron film dosimetry
9 and also the plans to replace neutron films
10 with TLD -- TLD's. If you recall, 1970 was
11 right around the time of the transition from
12 film badges to TLD's and the employee --
13 there's a checkbox on these forms, at least
14 back in '71 and up into the '80s where the
15 employee can check off whether he is or is not
16 satisfied with the results of his discussion
17 with the supervisor and he checked that he was
18 satisfied. But this is one instance of an
19 issue that seems to keep coming up. I mean we
20 keep hearing this, that, you know, I worked on
21 a job or I worked in a -- in a radiation area
22 or a high radiation area and my badge came back
23 low or zero. So I'd like to maybe just talk
24 about this in a more generic sense. I'd like
25 to paint a scenario for you just to kind of

1 give you a feel for this. If all of us were on
2 a radiation job today, right now in this room,
3 our job descriptions would all be the same. In
4 other words, you know, so all of the job
5 descriptions would be the same. We're sitting
6 here at the table. For those of you who are
7 dialing in, we're sitting at a long table, oh,
8 I would guess 20-25 feet long. I'm terrible at
9 estimating distances but let's say it's that.
10 And so if you could imagine, I'm sitting at one
11 end of the table and let's say that I'm a
12 radioactive source. I'm in the middle of the
13 room; I'm the radioactive source and I'm at one
14 end of the table. So if you look at the dose
15 rate that Craig Little is getting, he's sitting
16 right here to my left about one foot away,
17 whatever his dose rate is. And then I look
18 down the table and I see -- I'll pick on one of
19 my own people on that -- Larry Elliott. He's
20 sitting at the far end of the table, maybe 20
21 feet away. Simply based on distance alone,
22 Larry's dose rate would be if he's about 20
23 feet away a factor of 400 different from Craig
24 Little's dose rate. So you certainly would not
25 expect everyone in this room, same job

1 description working on the same job to have the
2 same dose rate. That's just based on distance
3 alone. That's not even taking into account the
4 other factors that are important -- shielding.
5 There happens to be not much between me and
6 Larry except this table, but there could be a
7 concrete wall, a toolbox holding the tools, who
8 knows what. So there's also shielding to
9 consider. There was a gentleman in here
10 earlier that brought in supplies, that brought
11 in soda. Focus that in. He worked in a
12 radiation area if this room was a radiation
13 area - in this scenario -- and then he left.
14 So the time is important. Time, distance and
15 shielding. This -- This is fundamental in
16 calculating external dosimetry in health
17 physics. So I think that employee -- sometimes
18 workers think that, you know, all the results
19 should be the same on a -- on a job and that's
20 simply not accurate if you consider just the
21 fact just in this limited scenario the
22 difference in dose rates between someone who
23 works close to the source versus someone who's
24 far away. So I don't think that necessarily
25 just the fact that not everyone on a job got

1 the same dose rate constitutes a data integrity
2 issue. So that I think is our evaluation of
3 the first safety concern. So I'll open it up
4 for discussion if anyone wants to talk about
5 that.

6 **MR. DEMAIORI:** Well, I -- I'd like to talk
7 about the single source theory as far as
8 sitting at the table with the hydrochlorination
9 lines above me and not you and yet your dose
10 rate is higher than mine. And so this is where
11 these questions come in.

12 **DR. ULSH:** Right.

13 **MR. DEMAIORI:** Right. One of the individuals
14 in the petition who did the physical loading of
15 the stacker retriever in 371 with over 14 tons
16 -- I'm not talking nanocuries -- we're talking
17 tons of weapons-grade plutonium. That IO
18 station is very small. You can only get two or
19 three people in it. So what was articulated at
20 the last meeting was well, the RAD tech was
21 real wiley and he was hiding outside. No way.
22 He had to be inside that small little room, the
23 IO station that we called it, that gave him
24 access to the glove box to put the plutonium in
25 through the downdraft table. He had to be an

1 active member for contamination control
2 purposes, not to let the contamination off the
3 downdraft table and out of the glove box. Now,
4 this person did the job for 120 days. We were
5 rotating the crews who were physically putting
6 the material in the glove box every five days
7 and we were getting them to sign exceptions
8 because as Mr. Potter pointed out we had -- we
9 lowered our administrative limits so low by the
10 time we got to D&D that we could no longer do
11 production type activities. I mean at Rocky
12 Flats we've always tried to be half of what the
13 standards were. So -- So the data integrity
14 question is how do you tell this RCT who's
15 shoulder to shoulder with the people loading
16 the plutonium that -- that his exposure is so
17 much less? And granted there's technique. You
18 try to use the person in front of you as a
19 shield. Distance is your best friend, period.
20 There's no doubt about that. But it's
21 (unintelligible) to be that far off and then to
22 be riddled with zeros and told that you didn't
23 turn in your dosimeter. Okay. Working a hot
24 job that's very monitored, okay, that is --
25 that -- that everybody's paying attention to.

1 I mean we're rotating crews so it's not
2 routine. For that to be allowed, that's not
3 possible. That's not possible. There'd have
4 been disciplinary action if he didn't turn in
5 his dosimeter on that type of a job. And yet
6 there wasn't. There were zeros. Okay.

7 **DR. ULSH:** Certainly the analogy is -- I mean
8 there's going to be situations where the source
9 isn't localized to what, you know, to where my
10 body is. It could be spread all around the
11 room. There you would expect a different
12 pattern. Or certainly there are situations
13 like you described, Tony, where people are
14 working side by side, maybe more shielding
15 where you might expect something different.
16 What I'm saying is in the generic sense, just
17 based on the information that was in this
18 safety concern, there's no detail here in this
19 particular safety concern that would make me
20 say there is no possible logical explanation
21 for this. I mean certainly on some jobs you
22 would expect exactly the result that -- that I
23 described, that factors could vary by several
24 orders. In fact dose rates that were
25 experienced by different workers on that job

1 could vary by several orders of magnitude.
2 There might be other situations like you
3 described where you might not expect that. And
4 also you -- you would expect that as people
5 move around that might tend to even out dose
6 rates a little bit. What I'm saying is you
7 can't just in the generic sense look at the --
8 the people who worked on a particular job and
9 expect necessarily that all those dose rates
10 would be the same. And that was the issue
11 that's brought up in this particular safety
12 concern.

13 **MR. GIBSON:** Brant, this is Mike Gibson. And
14 with no disrespect at all -- I mean this Board
15 is supposed to be made up of scientists,
16 doctors, and those that have been out in the
17 labor field. And I -- I totally agree with
18 you. There are some times that there are work
19 crews that are in an area of you're tearing out
20 a ballroom and it's -- there's going to be a
21 magnitude of different doses. More times -- as
22 many times as not you're going to send a crew
23 as far as maintenance and decon, of an
24 electrician, a pipe fitter, a mechanic and a
25 decon worker and they're going to be going into

1 a room similar to probably the size that Tony
2 was talking about and you're going to be
3 working on a glove box that's maybe four foot
4 by eight foot and you're all going to be right
5 in there with your hands in the thing so, you
6 know, I understand what you're saying and in
7 some cases that's logical. And if -- if there
8 was no details in this report maybe we should
9 look further for further details. But there
10 are certainly situations as many times as not
11 where people worked shoulder to shoulder.

12 **DR. ULSH:** Absolutely I'll grant that, Mike.

13 **MR. GRIFFON:** Can you -- can you maybe -- I
14 didn't look at the safety evaluation report
15 here but it says the supervisor noted the
16 inherent limitations of neutron film dosimetry
17 and plans to replace film dosimetry with TLD's.
18 What exactly did he note there or what -- See,
19 it almost seems like he's acknowledging that
20 there might be some reason for the difference
21 there.

22 **DR. ULSH:** The supervisor -- Okay. The --
23 The concern expressed by the employee I've
24 already pretty much read verbatim.

25 **MR. GRIFFON:** Right.

1 **DR. ULSH:** The supervisor's answer was inherent
2 inaccuracy of neutron film dosimetry is known
3 by health physics. However it was the best
4 system known. Recent research and development
5 of TLD crystals for neutron dosimetry has
6 proven much more accurate. Consequently
7 process operators in 771 have been issued
8 neutron TLD's since January 1, 1971. The
9 remainder of 771 people and the plant will be
10 issued neutron TLD systems as soon as possible.
11 Thank you for you concern. Concerns often lead
12 to agreements. I didn't find his response
13 particularly informative to be honest with you.
14 It's pretty generic. But all I can tell you is
15 for this one particular safety concern --
16 usually there's a package. There's this
17 particular form and some other documentation
18 behind it. But for this particular one this is
19 all that we were able to locate on this.

20 **MR. GRIFFON:** And this doesn't tell you whether
21 other employees were involved when he says
22 others?

23 **DR. ULSH:** It does not.

24 **MR. GRIFFON:** It doesn't so you couldn't
25 crosswalk any of this.

1 **DR. ULSH:** No, it doesn't tell us.

2 **MR. DEMAIORI:** Well, I'd like to point out that
3 -- that the employee's saying I'm satisfied
4 with your answer. It is no more than that.
5 Please try to read no more into that.

6 **DR. ULSH:** No, absolutely not.

7 **MR. DEMAIORI:** The employer has said, hey,
8 look, this is the system we got. We got a
9 better one coming. Hey, I mean how much are
10 you going to beat the dog so to speak, okay?

11 **DR. ULSH:** If it were me I might not have
12 checked it if that was the only thing that I'd
13 gotten. But I'm -- I'm just speaking in a --
14 in a general sense here. This is all we've got
15 for this particular safety concern. Do you
16 want to move on to the next one?

17 **MR. GRIFFON:** Yeah, might as well.

18 **DR. ULSH:** Okay. The next one is 86-13 -- 86-
19 13. The concern expressed was that the worker
20 was concerned about only receiving quarterly
21 dosimetry badge results twice during 1985.
22 Worker felt that the only reason for this was
23 that they, the health physics staff, were short
24 of help. In terms of the formal resolution for
25 this, the matter was referred to the Joint

1 Company/Union Safety Committee. Well, I talked
2 to Tony over the break just to get a feel for
3 what -- what the process was here. And Tony
4 told me about some of the improvements that he
5 made when he took over in around 2000 but back
6 in 1986 as I understand it -- and Tony, please
7 jump in and elaborate if I don't get it quite
8 right -- the worker would file a concern and
9 then if he checked on this particular form if
10 he was not satisfied with the supervisor's
11 response then the matter would -- would be
12 referred to the Joint Company/Union Safety
13 Committee. So for this particular safety
14 concern the worker was not satisfied with the
15 supervisor response so this was taken up by the
16 -- the Joint Company/Union Safety Committee.
17 And the resolution was that according to a -- a
18 letter that was sent from the Committee to the
19 worker -- this is some -- a quote from it. The
20 badge was in fact picked up three of the four
21 quarters in 1985. Since we're in open session
22 I won't say the name. Mr. X explained that due
23 to their manpower shortage they selected the
24 lowest risk groups using historical data and
25 bypassed the badge pickup for the third

1 quarter. The choice was this over running late
2 on the badge readings for the highest risk
3 groups, those needing badge readings every
4 other week. The health physics was unwilling
5 to compromise the safety of the latter group
6 for the sake of the lower risk groups which
7 historically could go to a semiannual reading
8 without jeopardizing safety. In the quarterly
9 group some of the figures given to us at the
10 meeting were that only two or three of the
11 whole group went over -- went over 500 millirem
12 for 1985. Even those going over were just
13 barely over. The plant objective currently is
14 to keep everyone under 2,500 millirem.
15 National standards allow for 5,000 millirem per
16 year. So this appears to be a case where a
17 badge exchange was -- was missed due to a
18 shortage in health physics staff. And as a
19 result the worker who was on quarterly badge
20 exchange wore his badge for an extra quarter.
21 Now, there's no indication here that the worker
22 was in fact unmonitored; simply that he wore
23 his badge for an extra quarter. So again our
24 evaluation is that this is not necessarily a
25 data integrity issue because he was in fact

1 monitored. Any discussion on that one?

2 **MR. GRIFFON:** I guess the -- the concern sort
3 of agrees with the response, doesn't it? The
4 worker felt the only reason for this was that
5 there was a shortage of help.

6 **DR. ULSH:** Well, the worker --

7 **MR. GRIFFON:** And that's sort of confirmed.

8 **DR. ULSH:** That is confirmed, yes. That --
9 The reason that they skipped that badge
10 exchange for the lower risk workers was that
11 they were -- they had a manpower shortage. But
12 I think that the worker was concerned about
13 only receiving the quarterly dosimetry badge
14 results twice during '85. You can make an
15 assumption, and this is only an assumption,
16 that the worker felt he might not have been
17 monitored. And that does not appear to be the
18 case. All right. Any other discussion?

19 **MR. GRIFFON:** Would you -- Do you -- You have
20 this individual's name. Did you look at the
21 database and look at the doses he received by
22 any chance?

23 **DR. ULSH:** No. No.

24 **MR. GRIFFON:** Just out of curiosity.

25 **DR. ULSH:** Didn't do that, Mark, because the

1 evaluation that we performed indicated that,
2 you know, this is the situation so even if we
3 looked at it and the readings were zero we
4 would assume (unintelligible) data integrity
5 issue.

6 **MR. GRIFFON:** Right.

7 **DR. ULSH:** Okay. Next one was 87-206. This
8 concern dealt with personnel -- "personnel not
9 receiving current dosimetry badge readings,
10 usually signed off by the employee". In terms
11 of the resolution of this, this one was also
12 referred to the Joint Company/Union Safety
13 Committee and the Committee sent a letter to
14 the workers stating that this is a violation of
15 the HSE Manual 18.03 and it is a DOE
16 requirement. This should not have been allowed
17 to happen and must be corrected immediately.
18 Employees have a right per DOE to receive this
19 information. I contacted -- the name is given
20 here -- the manager of radiation safety who
21 assured me that this would be corrected
22 immediately and the Joint Company/Union Safety
23 Committee now considers this concern closed.
24 So what this appears to relate to is that the
25 workers who were required to sign off on their

1 dosimetry results in fact didn't get a copy of
2 the dosimetry results. So -- And that's
3 certainly a -- that's certainly a concern, a
4 valid concern and the resolution reflects that.
5 Corrective action was initiated and there's no
6 indication here that the workers were in fact
7 unmonitored, only that their results weren't
8 reported to them in a timely manner. So again
9 we contend that this is not -- while it is
10 certainly a valid concern it's not a data
11 integrity issue in terms of the SEC. Okay.
12 The next one, 89-037. The concern was that the
13 employee stated that he did not receive a
14 bioassay for an extended period of time and he
15 did not have a dosimetry badge change for one
16 year, approximately December of '87 to December
17 of '88. And according to the immediate
18 supervisor's response the lack of bioassay for
19 the period in question appeared to be due to an
20 oversight. And according to the Joint
21 Company/Union Safety Committee Performance
22 Assurance Verification Form, the individual was
23 subsequently entered into a computer database
24 which should automatically initiate a request
25 for analysis. And a second Performance

1 Assurance Verification Form that was contained
2 in this package stated that the employee had no
3 problems getting bioassays subsequent to that
4 corrective action. The immediate supervisor's
5 response does indicate that the dosimetry badge
6 was in fact changed for the first and second
7 quarters of '88 and on January -- January 24th
8 of '89. According to a letter from the
9 Committee to the employee the corrective
10 actions were taken including training employees
11 on the appropriate frequency of urinalysis,
12 dosimetry badge change, and they updated a --
13 one of the Rocky Flats policy manuals. So our
14 evaluation of this. Depends on the specifics
15 of this situation. But if -- if this situation
16 arose during the conduct of a NIOSH dose
17 reconstruction there's obviously a period here
18 where the employee did not have a bioassay
19 result and that might constitute a gap in his
20 monitoring so we would have a couple of
21 options. There are several strategies
22 available. We could assign dose based on co-
23 worker data. That would be one option. Again
24 we're not talking about a specific co-worker.
25 What we're talking about is a claimant

1 favorable percentile value from all of the
2 monitored workers at the site. On the other
3 hand, if -- if the employee had bioassay
4 results prior to and following this gap period
5 we may not even have to go to co-worker data.
6 We could use his own data and then interpolate
7 through the gap. This does appear to be a
8 concern but it appears to be an isolated
9 example -- an isolated failure to follow the
10 established proceedings and there was
11 corrective action. So we don't really view
12 this --

13 **MR. GRIFFON:** This is interesting to me more on
14 -- on -- in light of our last topic, the D&D
15 topic.

16 **DR. ULSH:** Yeah.

17 **MR. GRIFFON:** The question of whether, you
18 know, this person, this individual had a
19 corrective action. But he might have been a
20 very outspoken individual and -- and safety-
21 conscious individual and say what's going on.
22 And the squeaky wheel gets the grease. They
23 fixed his problem but how many of those
24 problems were out there. That's the bigger D&D
25 question I think we want to consider. So this

1 -- this issue I think you're right. It -- It
2 can certainly be handled in a DR if you had co-
3 worker data and stuff or he -- he had later
4 urinalysis, no problem. I think it might be
5 interesting to reflect on your D&D, you know --
6 conclusions on your D&D work period data that
7 you're going to bring us next meeting or soon.

8 **DR. ULSH:** Yeah. Keep in mind, too, Mark, this
9 is -- this is from 1989 so it's before the D&D
10 period.

11 **MR. GRIFFON:** It's -- yeah. It would -- It
12 would have been after -- I'm guessing it would
13 have been when they started instituting a
14 longer -- maybe -- maybe it wouldn't.

15 **DR. NETON:** This would be before
16 (unintelligible) 35 came in. Thirty-five was
17 the end of '89.

18 **MR. GRIFFON:** End of '89? Yeah, it might have
19 been just -- just before. You're right. Okay.

20 **MR. DEMAIORI:** Let me please explain the safety
21 concern process out at Rocky Flats in reality.
22 The subcontractors, Colorado building trades,
23 had their own safety system, the
24 (unintelligible) team they called themselves.
25 In all the meetings I had attended, the

1 Colorado building trades had zero contribution
2 on safety concerns. In the Monday meetings,
3 Robert Carr (ph), the CEO, and all the vice-
4 presidents, when they get to building trades,
5 does building trades have any issues, it's
6 none. All the issues were taken on through the
7 steelworkers. Even if they had building trades
8 issues, subcontractor issues, guard issues,
9 they were all taken on through the steelworkers
10 and mostly the -- the RCP's, the rat packs. So
11 that was for fear of retaliation or reprisal.
12 You have to remember that the subcontractors
13 were there for a short period of time to do the
14 work and if they squeaked they were removed.
15 And removed by their own union because the
16 building trades, the foreman on the jobs are
17 union members, okay. So the safety concerns
18 were brought up through the steelworkers on
19 behalf of a whole lot of people. You just need
20 to know how it really worked. They couldn't
21 remove us because we were pretty strong. We
22 were the home team if you will with the -- the
23 prime contractor. And we had the advantage of
24 the DOE 628's, the whistle-blowers, but the
25 subs didn't. Make -- Make no bones about

1 that. And their -- their whole safety culture
2 was totally different. It was -- it's unsafe
3 not to bring a paycheck home and feed the
4 family. So you really need to take that into
5 consideration.

6 **DR. MAURO:** But they did have access to you,
7 your organization. In other words, if they had
8 a grievance and they had a problem as a lower
9 tier subcontractor --

10 **MR. DEMAIORI:** Right.

11 **DR. MAURO:** -- did they have recourse or were
12 they just victims of the situation?

13 **MR. DEMAIORI:** What they did is they went and
14 they whispered into one of our guy's ears and
15 then we took it up as our cause.

16 **DR. MAURO:** So you just took it as your cause.

17 **MR. DEMAIORI:** Right. Absolutely. You know,
18 they'd say come -- go over there and look at
19 this. You know, there's nothing I can do about
20 it but this isn't -- and it would reflect in
21 our process. So we took the brunt of, you
22 know, the -- the whole thing. And we did it
23 for years and that's why they call it a Joint
24 Company/Union Safety concern. If you'll also
25 look at the salaried people. Go to the

1 electronic database, and you'll have one
2 salaried safety concern to 1,000 steelworker
3 concerns because the salaried people were at
4 will. Employment's at will. You got a
5 problem, maybe you need to go. And that's more
6 of a salaried mentality also. So a lot of
7 salaried people left if they had problems.
8 It's what you said, you're not sure if you'd
9 sign that as acceptance. A lot of them just
10 said see ya. And so, you know, you have to
11 understand the steelworkers were, for the
12 safety program, the voice for the whole
13 facility.

14 **DR. ULSH:** It's not clear to me whether this
15 particular individual, what category he would
16 have fallen into, whether it was salaried or
17 sub or steelworker. From what you're saying
18 there was a good chance he was a steelworker.

19 **MR. DEMAIORI:** Yeah, probably 90-some percent.

20 **DR. MAKHIJANI:** Tony, how far did the building
21 trades go back at Rocky Flats?

22 **MR. DEMAIORI:** They built Rocky Flats.

23 **DR. MAKHIJANI:** But during the operation were
24 there building trades people and steelworkers
25 people throughout?

1 **MR. DEMAIORI:** Yes. Yes. The building trades
2 contractually had new construction. The
3 steelworkers production and maintenance. And
4 then in the end we split the D&D.

5 **DR. MAKHIJANI:** Okay.

6 **MR. DEMAIORI:** We had HCA's; they had CA's. So
7 we kind of changed the direct.

8 **DR. MAKHIJANI:** The kind of informal
9 arrangement that you've described, so it went
10 back all the way to the beginning?

11 **MR. DEMAIORI:** Absolutely. There's
12 jurisdictional lines from the '50s. Colorado
13 building trades, like I said, built Rocky
14 Flats. They -- you know, we were talking about
15 Eddie Pride, Charlie Pride, the singer's
16 brother. He was an electrician at Rocky Flats,
17 Colorado building trades, until the end and
18 then he came over to the steelworkers. But he
19 worked there 20 years with the building trades.

20 **MR. GIBSON:** Brant, this is Mike Gibson. And
21 I'm not trying to be argumentative and I'm not
22 trying to throw wrenches into this thing. I --
23 I think you guys -- I think NIOSH is doing the
24 best they can with a terrible, sloppy record
25 system the DOE had. And so I guess my concern

1 on this issue is if this claim is legitimate,
2 in other words, missed time that this gentleman
3 or lady was monitored and there could have been
4 missed dose, if you guys have to rely on co-
5 worker data I fall back to your original
6 example of you guys sitting in this meeting
7 room. And Larry may have 400 times less
8 exposure than the person sitting next to you.
9 So that's just to me as a Board member, and I'm
10 just trying to express my opinion, that's where
11 I feel somewhat -- and I'm not saying you guys
12 are not doing a good job and I know you're
13 trying. But that's why I'm uncomfortable with
14 -- sometimes with co-worker data.

15 **DR. ULSH:** Yeah, I understand your concern,
16 Mike, and you're not the first to have
17 expressed that. I know that the petitioners,
18 and we've heard it in -- in some worker
19 comments are concerned about that, too. And I
20 think the thing that you have to keep in mind,
21 Mike, is that we don't rely on co-worker data
22 from a particular individual for exactly that
23 reason. Instead we rely on the entire
24 monitored population and take the highest --
25 okay, let me rephrase that. We take -- in some

1 cases we take 95 -- 95th percentile of everyone
2 who is monitored at the site in -- in
3 situations where we think there was a potential
4 for significant radiation exposure for exactly
5 those reasons.

6 **MR. GIBSON:** Right. And -- And I understand
7 that and I, you know -- I -- again, I think you
8 guys are trying to do a good job. I'm not
9 saying you're not. That -- And that's
10 probably -- that is probably claimant
11 favorable. And, you know, I -- I don't want to
12 see anyone compensated that doesn't deserve it,
13 but I certainly don't want to see anyone that
14 deserves compensation be denied based on the
15 system. And, you know, so I just -- again, I'm
16 not trying to be argumentative but I -- I guess
17 that's why I just try to -- I look into the
18 weeds on things.

19 **DR. ULSH:** I understand. I agree with you
20 completely, Mike. I mean it's much more
21 important that someone who deserves
22 compensation is not denied unfairly. That's
23 our primary concern. That -- That -- The
24 practical implication of that is that some
25 people who -- I don't want to say don't deserve

1 it but --

2 **MR. GIBSON:** Well, right. Right.

3 **DR. ULSH:** There were more people paid than --
4 than --

5 **MR. GIBSON:** I think -- I think we know what
6 we mean but I just -- I don't want to see
7 anyone that deserves it not get it. I mean,
8 you know, \$100,000 is nothing for a life, for
9 going through cancer but that's just why -- I
10 guess that's why I push issues sometimes is,
11 you know, I want to try to make sure. And I
12 know you guys are doing the same but I just
13 wanted to raise the issue.

14 **DR. ULSH:** All right. Thanks. Move on to the
15 next one, Mark?

16 **MR. GRIFFON:** Sure.

17 **DR. ULSH:** The next one is 89-214 and the
18 concern that was expressed is that, and this is
19 according -- the established procedures are not
20 being followed -- and this is in quotes
21 actually on the sheet -- "Personal and
22 Confidential, Personnel Dosimetry records each
23 quarter." And if you look at the supervisor
24 response on this it indicates that it's not a
25 safety issue and it goes on to state that any

1 employee with a similar concern will have their
2 personal dosimetry record cut out from the
3 master record and presented on an individual
4 basis. And the employee indicated satisfaction
5 with that result on the form. Now, as near as
6 we can tell this appeared to be an issue that
7 occurred not just at Rocky Flats but at some
8 other sites. And that is that periodic
9 dosimetry results were posted publicly on a
10 master list. This -- This particular employee
11 and certainly others were concerned about their
12 personal information being posted in a public
13 place. And that would certainly have privacy
14 implications and this concern appears to be
15 related to that. So therefore it doesn't
16 appear that this is a data integrity issue.
17 It's more of a Privacy Act issue.

18 **MR. DEMAIORI:** If you look at the data concern
19 that was before HIPA, and that was back when I
20 told you in the last working session that, you
21 know, some supervisors used dose record as a
22 determination of productivity during the Cold
23 War. You know, you didn't work hard enough
24 this week; look at your dose compared to your
25 brothers.

1 **DR. ULSH:** So I can certainly see where
2 employees would be concerned about their
3 personal information being posted in a public
4 place for everyone to read and that appears to
5 be what this issue is about.

6 **MR. DEMAIORI:** He probably worried about being
7 chastised over the amount of productivity.

8 **DR. ULSH:** That could very well be.

9 **DR. MAURO:** Was that a badge of honor then?
10 When you were posted and you had a high dose
11 was that a badge of honor?

12 **MR. DEMAIORI:** Yeah, if you thought that being
13 a hard worker was, if that was your mindset,
14 absolutely. You know, that's -- they had --
15 and like you said, three of us could be working
16 the same job but you could be living under
17 gloves and we could be practicing
18 (unintelligible) you know, and bias the fact
19 that you were the better worker even though
20 you're living in the gloves. It doesn't mean
21 you're productive. It just means you're --
22 you're taking the dose. Absolutely.

23 **MR. GRIFFON:** But not really an issue relevant
24 to the, reconstructing dose.

25 **DR. ULSH:** The next one is 89-255. We've only

1 got two more to go including this one. The
2 concern that was expressed with regard to lack
3 of notification if a high accumulated dose
4 equivalent trend had been set. This one was
5 hard to interpret, hard to piece together what
6 it was about. But according to the resolution,
7 according to a memo from representatives of the
8 Joint Company/Union Safety Committee to the
9 employee it said that OHP has taken the
10 position that they do have meetings with
11 individual employees and their management if
12 the target limits are exceeded. In addition,
13 the individual employee exposure records are
14 available upon request by that particular
15 employee. No corrective actions were required
16 by the Committee. Again in our evaluation, the
17 meaning of this concern wasn't entirely clear
18 to me and I don't know, maybe Bob or Tony or
19 someone who was at the site might have a little
20 more insight on this. But -- But it seems to
21 indicate that the worker was concerned that --
22 that they were not notified when their trends
23 in dose would eventually put them over some
24 target dose limits, maybe an administrative
25 limit perhaps. If that interpretation is

1 correct it wouldn't necessarily constitute a
2 data integrity issue although, you know, a
3 worker would certainly be concerned about
4 knowing that kind of thing. But it doesn't
5 appear that it would prevent us from doing dose
6 reconstruction if we've interpreted this
7 correctly.

8 **MR. DEMAIORI:** In 1989 we were continuing to
9 reduce our targeted dose rates at -- at the
10 time, our administrative doses. And so any
11 time a worker was about to exceed the
12 administrative limits, the worker felt that
13 they were in jeopardy. And that's why the
14 safety concern would have been filed. We kept
15 lowering the administrative limits to the point
16 around 1989 where they were so low we couldn't
17 work. And the company was getting bonus after
18 bonus for lowering the limits. And then we
19 started to go back to work after '89. You
20 know, we had residues we were working on,
21 packaging plutonium, and so we started to
22 increase the limits and then the average worker
23 felt that we were putting them in jeopardy
24 because now we're increasing limits that we
25 said we were lowering to protect them. So I

1 think this is where you'll see this. They're
2 saying, hey, you knew this job was going to
3 double and triple the administrative limits
4 that we had set and now you're asking for
5 variances; you're asking for exceptions; you're
6 asking -- and I believe that that's where this
7 comes from.

8 **DR. ULSH:** And like you said before, that could
9 have implications for the worker in terms of
10 being eligible for premium pay or overtime pay,
11 that kind of thing, you know. So the worker,
12 you know, might want to know about this.

13 **MR. DEMAIORI:** Well, I think on this one in
14 particular the worker felt that if you lowered
15 the limits then those are the limits you should
16 stick with.

17 **MR. GRIFFON:** Stick with, right.

18 **MR. DEMAIORI:** Yeah, I think that's more --

19 **MR. GRIFFON:** -- changing it back to higher.

20 **MR. DEMAIORI:** Yeah. If you told me last year
21 that you're lowering it to keep you safe, well,
22 then this year you're not keeping me safe.

23 **MR. GRIFFON:** Right.

24 **MR. DEMAIORI:** I believe that's a part of it.

25 **DR. ULSH:** So again it's an important issue. I

1 mean there's no question about that. But --

2 **MR. DEMAIORI:** But it's productivity versus
3 safety.

4 **MR. GRIFFON:** But it doesn't necessarily impair
5 your ability.

6 **DR. ULSH:** Exactly.

7 **MR. GRIFFON:** Right.

8 **DR. ULSH:** Okay. The last one is 92-036. And
9 the concern that the employee expressed was we
10 have not received information from external
11 dosimetry concerning readings from our TLD's
12 for the past year. I have called on them -- I
13 have called them on several occasions and have
14 been told that they have computer problems.
15 This is important safety data used to track
16 employee exposure. And this sounds rather
17 similar to one of the earlier safety concerns,
18 that it has more to do with timely notification
19 of the worker about their particular dosimetry
20 results. And according to the supervisor
21 response, external dosimetry had been contacted
22 and they were going to provide the TLD data
23 and, you know, they've recognized that that's
24 an important issue. The employee indicated
25 satisfaction with the results and a letter from

1 the Joint Company/Union Safety Committee to the
2 employee said that the Committee has verified
3 implementation of the safety concern and has
4 closed it. Again, that appears to -- appears
5 to be a lack of timely reporting dosimetry
6 results to the employees. Now, there's no
7 indication here that they were in fact
8 unmonitored but just that the results weren't
9 reported to them in a timely manner. So again
10 we don't feel that (unintelligible) dose
11 reconstruction. And that wraps up the safety
12 concerns.

13 **MR. FITZGERALD:** Well, I think the only action
14 incumbent upon us is to take a look at these
15 evaluations. Does the O-drive file include the
16 summary as well as the individual safety
17 concern documentation?

18 **DR. ULSH:** Right now currently on the O-drive
19 I've just placed the -- well, for instance
20 here's an example, the individual safety
21 concerns and my supporting documentation. As
22 soon as I go home today I'll include this
23 document. It's not on there right now.

24 **MR. FITZGERALD:** Kathy's on her way back to
25 Washington, too.

1 **DR. ULSH:** Yeah, I think I might need to
2 correct that, too. Karin just pointed out to
3 me that on the -- the -- our evaluation of the
4 last one, 92-026, the last -- very last
5 sentence. I said as such, it does have data
6 integrity or other SEC implications. I forgot
7 the word not.

8 **MR. GRIFFON:** Does not. This could change the
9 meaning there just a little bit.

10 **DR. MAKHIJANI:** Brant and Joe? Are these -- I
11 -- I've lost actually the issue of your last -
12 - I was focusing on Y-12 but are -- are these
13 the issues derived from the affidavits that are
14 in the petitions or is that a separate set?

15 **MR. FITZGERALD:** Well, I think the first one --

16 **DR. MAKHIJANI:** First one was?

17 **MR. FITZGERALD:** -- 71-4 I thought was one of
18 those.

19 **DR. MAKHIJANI:** Yeah.

20 **MR. FITZGERALD:** It says may be an issue.

21 **DR. MAKHIJANI:** I recognized that one but I
22 didn't recognize the others.

23 **MR. FITZGERALD:** Yeah, the same ones, 4 and
24 206. See the ones that have matrix issue
25 numbers next to them?

1 **DR. MAKHIJANI:** Okay.

2 **MR. FITZGERALD:** Those are the ones that came
3 from the affidavits. The other ones were ones
4 that were identified by the description, the --
5 she picked the ones that had dosimetry or badge
6 issues without getting deeply into all the --
7 the discussion and the resolution or anything
8 like that. So I think what this demonstrates
9 is a lot of these just didn't pan out to be
10 specifically discrepancies or problems with
11 data reliability per se. I think we need to
12 look at this a little bit more.

13 **DR. MAKHIJANI:** So my question is where are we
14 on -- on resolving the -- so that the number --
15 well, the number of complaints. You tried to
16 address it generically and I -- I understand.
17 But there are a number of complaints other than
18 a high radiation area or the supervisors were
19 reducing my dose to zero. Do we -- Do we now
20 have a catalog of that that we're going to
21 resolve? Or how are we going to address --

22 **MR. FITZGERALD:** Well, this -- this whole thing
23 is --

24 **DR. MAKHIJANI:** -- address the -- the -- do we
25 have a list of those that we're going to

1 address?

2 **MS. JESSEN:** Right now we're putting together a
3 table that addresses all of those issues.

4 **DR. MAKHIJANI:** Oh, great.

5 **MS. JESSEN:** It's not quite complete yet.

6 **DR. MAKHIJANI:** Okay.

7 **MS. JESSEN:** But it will address -- currently
8 we have 23 issues in this matrix right here,
9 and we're addressing all of those issues that
10 were brought up in the petition as well as the
11 additional issues that Tony brought up to
12 Brant.

13 **DR. MAKHIJANI:** Okay. Good.

14 **MS. JESSEN:** So that's currently under
15 development.

16 **DR. MAKHIJANI:** So we'll go affidavit by --
17 wherever there are sort of substantive -- data
18 fabrication, allegations, and those kinds of
19 things and go through them one by one?

20 **MS. JESSEN:** In this matrix everything is
21 addressed that was in the petition.

22 **DR. MAKHIJANI:** Great.

23 **MS. JESSEN:** That includes the affidavits. It
24 also includes certain statements that were in
25 the petition that are not affidavits.

1 **DR. MAKHIJANI:** Right. Right. I remember I
2 tried to compile initially, you know, made a
3 very rough cut at it. So I'm very glad that
4 you've kind of taken it to the next step.

5 **MS. JESSEN:** It's not quite done yet.

6 **DR. MAKHIJANI:** I appreciate that.

7 **MS. JESSEN:** But we're working on it.

8 **DR. ULSH:** We've gone through the petition and
9 we've pulled out -- there was -- where there
10 were specific examples. Those are included in
11 here and also --

12 **MR. GRIFFON:** That should overlap with the ones
13 we have in this -- this matrix that we
14 developed in the working group, right?

15 **MS. JESSEN:** Yes.

16 **MR. GRIFFON:** Because the back 20 or so were
17 pulled from there.

18 **MR. FITZGERALD:** Does that include the one --

19 **MR. GRIFFON:** It might be more extensive.

20 **MR. FITZGERALD:** -- one or two that we -- I'm
21 not going to mention any names -- that we
22 culled out after the Denver meeting for
23 special, you know, focus? One -- Let's see
24 here.

25 **DR. ULSH:** We can talk about the -- what people

1 have said.

2 **MR. FITZGERALD:** It's hard to -- it's hard to
3 block out names.

4 **DR. ULSH:** I know what you're talking about.

5 **MR. FITZGERALD:** Yeah.

6 **DR. MAKHIJANI:** One is -- One of those is
7 pending and one of those is resolved.

8 **MR. FITZGERALD:** Right. But that's part of
9 this -- this group of 22 I would assume.

10 **DR. MAKHIJANI:** I think so.

11 **DR. ULSH:** Okay. Talk about the stuff that
12 people have talked about in a public setting we
13 can talk about --

14 **MR. FITZGERALD:** Right.

15 **DR. ULSH:** -- without worrying about the
16 Privacy Act. And Jennifer Thompson is one case
17 since she talked about her --

18 **MR. DEMAIORI:** And Larry Rand.

19 **DR. ULSH:** Yeah, I think that's another one.

20 **MR. DEMAIORI:** He spoke publicly.

21 **DR. ULSH:** Jennifer Thompson is going to be in
22 this table in terms of the status of where we
23 are with Ms. Thompson. Just to refresh your
24 memory we talked -- she sent in a list of
25 questions after one of our earlier Board

1 meetings, I think it was after the Boston Board
2 meeting. And she talked about a particular
3 incident that she was concerned about where her
4 badge showed a positive dose and dosimetry --
5 she said dosimetry could not come up with a
6 reason for that and so they assigned her zero.
7 And so she's concerned about that. I took a
8 look through her RAD file and pulled out the
9 only dose reconstruction -- extended dose
10 reconstruction conducted by the plant that I
11 found and it came out at the Denver Board
12 meeting that wasn't the incident that she was
13 concerned about so I looked at the wrong one.
14 So what we've proposed -- what we have proposed
15 is that we get Ms. Thompson to sign a waiver
16 and send it in and then we'll send out a copy
17 of her records to her and also to SC&A and then
18 we can have a conference call: us, SC&A and --
19 and Ms. Thompson. We can look through her
20 record and, you know, try to locate what
21 exactly -- what is it that she's concerned
22 about. I sent her I believe around May 5th,
23 and then I sent a follow-up e-mail two weeks
24 later so I guess that would be around the 19th
25 but that's the Friday. I haven't heard back

1 from her yet but as soon as we get that in
2 we'll (unintelligible).

3 **MR. DEMAIORI:** Yeah, and I'd like to state on
4 that for a moment that Jennifer has been
5 working on a nuclear decommissioning proposal.
6 That's an interim proposal, so she simply
7 hasn't had the time. She's been working 16
8 hours a day, six/seven days a week the last 30-
9 plus days. And professionally she just doesn't
10 have the time. However, I've delivered the
11 proposal today so -- so she -- she -- she will
12 be available for the next couple weeks. And
13 she -- she will provide that. It was just
14 simply she didn't have the time.

15 **DR. ULSH:** Okay. Well, that's good.

16 **MR. DEMAIORI:** And she's got to feed her family
17 so --

18 **DR. ULSH:** I'm glad that she got my e-mail.

19 **MR. DEMAIORI:** No, she got the e-mail and --

20 **DR. ULSH:** Okay. Good.

21 **MR. DEMAIORI:** I've also got an e-mail on it.
22 She told me to articulate that in fact it's not
23 negligence. It's just simply didn't have the
24 time.

25 **DR. ULSH:** No problem. I certainly understand

1 that.

2 **DR. MAURO:** I'd like to bring something up.

3 Tony and I were having a little side

4 conversation. I think it has a relevance to

5 everything we do. You have certainly presented

6 in this particular instance, in my mind, the

7 response -- a well researched response. Each

8 of several of the concerns that I guess they

9 were in the affidavit or expressed. And what -

10 - what was this -- what was the trigger for

11 each one of these, and particularly the one for

12 (unintelligible)?

13 **DR. ULSH:** Those were the safety concern

14 documents that Kathy was to --

15 **DR. MAURO:** Right. Did they go back to a

16 person's particular affidavit or -- or a

17 particular statement made by an individual and

18 these are just follow-up action items that

19 Kathy identified we weren't pursuing?

20 **DR. MAKHIJANI:** I guess this came out of her

21 site visits document reviews --

22 **DR. MAURO:** Okay.

23 **DR. MAKHIJANI:** -- and interviews.

24 **DR. MAURO:** Those triggered it. You see --

25 Let me tell you where I'm going with this.

1 We're speaking amongst ourselves now as health
2 physicists and the rationale between, you know,
3 what an individual may have some concerns about
4 and then when -- when you explain what action
5 you made to find out. But in -- in the end I
6 think we're -- we're doing -- the most
7 important thing we're doing right now is we
8 should be speaking amongst ourselves. We have
9 to do that because SC&A is going to make a
10 recommendation to the -- to the working group,
11 and the working group will, of course,
12 regarding these issues. But, I think, and this
13 is where Tony and I were just speaking on the
14 side. You know, really the question becomes
15 the person that raised the concern originally,
16 if that person was sitting in the room right
17 now, each one of these individuals, would they
18 feel as if they got treated right? That is we
19 looked into the matter; we found out what
20 rationally transpired and in fact there is a
21 good reason for what happened and you were, in
22 fact, treated right. I think it's -- I'm not
23 sure how we do this but somehow this is the one
24 place we have to build that bridge where there
25 is this -- where each of the individuals that

1 either spoke at the Denver meeting, that either
2 spoke to Kathy during the interview or have an
3 affidavit, I -- I would like to see -- I'd like
4 them to get a degree of satisfaction that in
5 fact a genuine effort was made. Because I feel
6 right now, reading this, that certainly a
7 genuine effort was made to follow -- to bring
8 this to ground. But I'm looking at it from the
9 eyes of a health physicist listening to what
10 transpired. And in that case Tony is -- is --
11 now, we have all these folks here, all right.
12 Are we -- now, you heard some of the answers to
13 some of these questions. Now -- Right now,
14 Tony, do you feel as if, yeah, I think that it
15 looks like some answers have been resolved or
16 are you a little bit still uncomfortable now?
17 You know, maybe this isn't -- the whole story
18 isn't really told here; there's more to the
19 story?

20 **MR. DEMAIORI:** Yeah, when I look at this for
21 me, it's just the tip of the iceberg. If you
22 went through our safety concern process and
23 told every concern requiring dosimetry. This
24 would tell me that this is the symptom and not
25 the disease. What's the symptom? There's

1 problems over and over and over again.
2 Communication problems from the employer to the
3 employee, from the internal dosimetry
4 department to the employee. These -- These
5 are problems and they're showing a bigger
6 problem. You know, I -- and I can't speak for
7 the rest of the plants because I most certainly
8 have only worked at Rocky Flats, but I believe
9 a couple working sessions ago you articulated
10 you're sorry that the employees at Rocky Flats
11 didn't have confidence in their internal
12 dosimetry department. Well, they most
13 certainly didn't. To quote my predecessor,
14 Jerry Hardin, he considers this whole process
15 to be witchcraft. Bob, I'm sure you've heard
16 that from Jerry a time or two. He doesn't
17 believe that you can reconstruct dose
18 successfully because you don't have all of the
19 facts. Personally I'm not sure you can. And
20 all these concerns -- if one person raises a
21 concern there's a hundred other people that
22 feel the same way, that didn't get their
23 results on time, that were given zeros without
24 explanations, who knew that they were working
25 as hard as the person next to them. And so,

1 you know, if one person raised the concern
2 there were a hundred people that wanted to.
3 And so to me this says, you know, total lack of
4 confidence in the program. And then if
5 somebody's dying of cancer for you to look at
6 them and say, no, that zero was really because
7 you didn't turn in your badge. Well, you know,
8 I don't need to articulate that person's
9 feelings anymore. Okay. I'm just going to
10 tell you that, you know, with the program
11 changing so many times, with -- with -- with
12 the studies, epidemiology studies -- one says
13 radiation's safe for you; another says no, it's
14 not; with the lawsuits. This is why we're
15 here. This is absolutely why we're here. This
16 is why this legislation was enacted, to
17 compensate. That's the reason the steelworkers
18 are participating at the Rocky Flats site in
19 particular is because we don't believe that you
20 can successfully reconstruct dose. We felt the
21 petition fell within the guidelines. We felt
22 that one, exposure to plutonium is harmful,
23 that it does cause cancer. And two, we didn't
24 feel that we were getting a fair shake on
25 compensation. Not enough of our people were

1 coming back saying, hey, that was great
2 legislation and it really took care of my
3 family. To the contrary, you know, we keep
4 hearing the dollar number come up and how many
5 dollars have been paid. But they are dollars
6 to the same people. It's not being spread out.
7 So, you know, I'm just going to tell you that,
8 you know, these safety concerns, and there's
9 many of them. This is just a small, small
10 thing. They indicate the problems of the
11 dosimetry program. And not just technical
12 problems. Perception problems. So, you know,
13 that's what they indicate to me. And, you
14 know, when -- when an employee is satisfied
15 that's an exhaustion, okay. You gave him your
16 best answer; what more can I do. So, okay, I'm
17 satisfied until the next time. I guess what
18 the concern really says is I'm watching you.

19 **MR. GRIFFON:** I think I'm --

20 **MR. DEMAIORI:** I want to make you do the right
21 thing. I believe that's what the concern
22 really says.

23 **MR. GRIFFON:** I mean I think I've asked this
24 before but Kathy identified this list of safety
25 reports from the database. Is that -- Is that

1 how she --

2 **MR. FITZGERALD:** No, think what Arjun was
3 saying --

4 **MR. GRIFFON:** Oh.

5 **MR. FITZGERALD:** -- was she did an on-site
6 visit, did interviews.

7 **MR. GRIFFON:** Right.

8 **MR. FITZGERALD:** Went through and looked at the
9 documents and came across the safety concerns
10 file; noted that there were safety concerns
11 after a certain time period. I think the --

12 **MR. GRIFFON:** Well, because that was my -- I
13 don't think I mentioned this before.

14 **MR. FITZGERALD:** Right.

15 **MR. GRIFFON:** Before '71 most of them are --

16 **MR. FITZGERALD:** Right. That -- That's the
17 case. And she called the ones out that looked
18 like they would speak to -- to the reliability
19 of dosimetry. And I think what's useful here
20 is I think it shows that even though the titles
21 and descriptors for these safety concerns are
22 dosimetry, the actual issues are --

23 **MR. GRIFFON:** A little bit different?

24 **MR. FITZGERALD:** Right. Which is useful to
25 see.

1 **MR. DEMAIORI:** Yeah, she pulled that out of my
2 files.

3 **MR. FITZGERALD:** Yeah. Okay.

4 **MR. DEMAIORI:** And unfortunately my files don't
5 go back.

6 **MR. FITZGERALD:** Right.

7 **MR. DEMAIORI:** Now, the company has electronic
8 files of all the safety concerns. I mean our
9 program has been around since at least Rockwell
10 and probably Dow Chemical and so, you know, but
11 I'm telling you that this just shows a lack of
12 trust to me. You asked me how I felt about
13 this. To me if we have these problems where
14 you're not going to show me my dose even though
15 I get it quarterly, I've always gotten it
16 quarterly, but all of a sudden I don't get a
17 record. And then when I do get a record
18 there's a zero on it. And then when I question
19 the zero you didn't turn in your badge. This
20 speaks of conspiracy. It does to me. So I
21 think, hey, wait a minute. I always got my
22 records before. And that's what that tells me,
23 why is today different. Why did you take me
24 off the quarterly and put me on the yearly?
25 Well, lack of manpower. Well, that's not good

1 enough to protect me. That's what that speaks
2 of.

3 **MR. GIBSON:** This is Mike Gibson.

4 **MR. DEMAIORI:** Just telling you.

5 **MR. GIBSON:** Tony, if you're done --

6 **MR. DEMAIORI:** Sorry.

7 **MR. GIBSON:** I would just like to add to your
8 comment. I've never been like put on the Rocky
9 site but I have spent 23 years at Mound and,
10 you know, I guess all I want to say is, you
11 know, this -- this lack of manpower and -- and
12 cutting money in the RAD area and not having
13 enough dosimeters and hard time finding
14 records, and I know it's -- and again I'm not
15 pointing a finger at NIOSH but, you know what?
16 If you people went to them and asked them to
17 show you records of if they needed a new van,
18 if they needed a \$250,000 or half-million
19 dollar front-end loader, if they needed
20 material for a job, they could lay tons of
21 material on you and show that every bit of that
22 came in on time, on price and everything else,
23 and they met their schedule and they got their
24 award fee. But when it comes to radiation
25 records for some reason it's like you guys have

1 to pull teeth to get them. And there's like it
2 seems there's always an excuse as to why this
3 is.

4 **MR. LITTLE:** Mike, this is Craig Little. I'm
5 with the ORAU team. I -- I -- I do not
6 believe that it is difficult to get dosimetry
7 records out of Rocky Flats. We've not been
8 denied a single thing we've asked for and
9 they've been very forthcoming with things and
10 in very short order.

11 **MR. GIBSON:** I'm sorry. Who's speaking?

12 **MR. LITTLE:** Craig Little. I'm with the ORAU
13 team.

14 **MR. GIBSON:** And you're with ORAU team?

15 **MR. LITTLE:** Yes.

16 **MR. GIBSON:** Do you have contractor or DOE
17 experience or employment, ex-employment?

18 **MR. GRIFFON:** You worked at Rocky. Or no you
19 didn't.

20 **MR. LITTLE:** I did not work at Rocky. But I'm
21 telling you that when we have asked for records
22 we have gotten anything we wanted and in the
23 time frame that we needed it with the exception
24 of -- not an exception -- with the constraint
25 that the vast majority of the records are

1 stored at the Denver Federal Archive Center and
2 they have to go be retrieved physically.

3 **MR. GIBSON:** Okay. Let me ask you one more
4 time then. Have you had contractor or DOE
5 employment, DOE contractor employment?

6 **MR. LITTLE:** I have had contractor employment.

7 **MR. GIBSON:** DOE?

8 **MR. LITTLE:** Yes.

9 **MR. GIBSON:** Okay. I just wanted to --

10 **MR. LITTLE:** Not at --

11 **MR. GIBSON:** -- put that on the record, too,
12 and just as I laid my DOE experience on the
13 record.

14 **MR. LITTLE:** I was in a --

15 **MR. GIBSON:** I will tell you as a union
16 president, an ex-union president I have had a
17 lot of trouble. I've had to go to Congress to
18 get information I wanted so, you know, I just
19 want that on the record, too, that maybe you
20 didn't have trouble but I did.

21 **DR. ULSH:** Yeah. I think -- I think that some
22 of this, Mike, might be that I mean NIOSH is
23 the government and you've got the resources to
24 deal with the problem whereas, you know, with
25 individual workers the system might operate a

1 little bit differently. But I second Craig's
2 opinion -- only as it applies to Rocky Flats,
3 we found the records people being very helpful,
4 very timely and certainly have no complaints
5 about their efforts to provide us the records
6 we requested. In fact, on the contrary.

7 **MR. GIBSON:** Again, that's -- and that's fine.
8 You know, I'm not -- I'm just -- I'm giving you
9 my experience. I -- I heard what Tony said
10 and, you know, I just -- I'm one that's been in
11 the field, too, again. And like I said, this -
12 - this is supposed to be a fair and balanced
13 debate and I just want my point on the record
14 also. I've heard -- I've heard the other side
15 of the story and I want this side of the story
16 on the table.

17 **DR. WADE:** Okay. Tony has another comment.

18 **MR. DEMAIORI:** Yeah, I would like to talk about
19 access to the individual. You know -- You
20 know, I can't speak on behalf of NIOSH or ORAU
21 but currently Rocky Flats is taking six to nine
22 months for the individuals to access their
23 records from the Federal Center through the
24 Privacy Act. If you want to be compensated and
25 you request your records it's six -- minimum of

1 six -- six months for the individual. In the
2 past we used to request records and we got them
3 blacked out because of security. We mentioned
4 a name and maybe a date and an end and a The
5 and Thee and okay, you've got 27 pages of
6 blackout, which also helps support the fact
7 that there's a lot of distrust out there when
8 you couldn't even access your own records. But
9 currently our people are having a heck of a
10 time getting their records. They're having a
11 heck of a time getting records for employment
12 verification. They're having a heck of a time
13 getting records even from the union to say,
14 hey, I was a union member so they don't have to
15 pay initiation dues to another union on a new
16 job. And it's because we don't have the
17 infrastructure. We're no longer there. My
18 collective bargaining agreement was a 15-day
19 turnaround to an employee's medical,
20 radiological -- it didn't matter, 15 days. Now
21 it's a minimum of six months, a minimum. So --
22 So -- So I do congratulate you guys on your
23 ability to pull records but we don't have that
24 ability and neither do our people. And that
25 also adds to the frustration. And then I'm

1 going to take a step further. Like with
2 Jennifer Thompson, like she testified, she's
3 only had three radiological incidents in the 14
4 years she worked there. Just three. So for
5 you not to have all three of those, wow, that
6 really draws a lot of questions into how
7 accurate your ability is to pull all the
8 records as it does with me. I mean it's not
9 like she -- she was a chemical operator and had
10 been in a hundred different incidents. She was
11 a media relations manager and had three. So
12 her file should be relatively easy to go
13 through and to come out with those three. And
14 then I want to speak to the incident you did
15 come up with. A lot of people -- A lot of
16 people at Rocky Flats left their dosimeter
17 badge on their PPE. When they undressed -- it
18 came out of the PCM II for full-body
19 monitoring. They dropped their PPE in the
20 clothes bin. They walked out; 10 minutes, 20
21 minutes, oh, my God, I don't have my dosimeter.
22 Well, where were you last? Oh, I left it at
23 the step-off pad. Shoot back in there, dig
24 through the coveralls. There's the dosimeter.
25 There are no follow-up investigations. There

1 are no follow-up investigations. There are no
2 doses being assigned in those cases. Heck,
3 internal dosimetry doesn't even know the badge
4 was lost until they read a report if a report
5 is filed. In Jennifer's case she insisted on
6 an IRI, self-reporting it. Had she been a
7 steel worker it would have been no harm, no
8 foul, I got my badge. Okay. So -- So you
9 really need to understand that, you know, when
10 you report to us that, you know, we -- we
11 assigned the average dose of the person on the
12 crew you even lose more credibility because we
13 know those things don't happen in that kind of
14 an incident. I mean they just don't. This is
15 the sort of thing that happens day to day and
16 there is no dose because the badge was on the
17 step-off pad. Okay. There is no dose to
18 reconstruct. Nobody would even bother. I mean
19 it's just not a real thing.

20 **MR. GRIFFON:** I guess this --

21 **MR. DEMAIORI:** It's not.

22 **MR. GRIFFON:** Just to -- to reflect on this, I
23 mean that's part of the reason it's -- the work
24 group is drilling down into some of these
25 issues on the data reliability because of the

1 concern expressed by the petitioners and by the
2 -- the public over the records and the fact
3 that they are concerned that they were, you
4 know, manipulated or whatever. So I think it's
5 very important that the Advisory Board come to
6 grips with this and be able to independently
7 say, you know, yes or no, there's problems here
8 or there's not. At least that's another level
9 of -- it's not going to certainly answer
10 everyone's concerns I'm sure, but at least it's
11 another level of independence. I wanted to get
12 back to the -- because we're at quarter of
13 five.

14 **MR. ELLIOTT:** Can I make one comment real
15 quickly?

16 **MR. GRIFFON:** Sure.

17 **MR. ELLIOTT:** I agree with you. I think it is
18 important that you guys are involved and
19 engaged in -- in this trek with us trying to
20 find out where the truth lies. I'd like to
21 comment back to the -- Tony though.

22 **MR. GIBSON:** Larry, could you speak up, please?

23 **MR. ELLIOTT:** Yes, I'll try to speak up. I
24 want to make it very clear that what you were
25 talking about Tony, I don't disagree with what

1 -- your account of individual workers trying to
2 get access to their data, their records through
3 the Privacy Act. I think that's something that
4 I would encourage you to encourage those people
5 to go to the DOE and make those complaints to
6 the DOE. They're the ones that are holding up
7 Privacy Act responses to you all. But as I
8 learned about this out in Denver I was very
9 quick to get to that person who raised this in
10 my awareness and say to them, even if you're
11 not -- this person was not a claimant but he
12 was talking about having difficulty getting his
13 dose records through the Privacy Act request.
14 And I said, ask us; we'll help you; we'll get
15 it for you. And even though he's not a
16 claimant we're -- we're going to do that. And
17 I want it also known that we don't look for the
18 type of data that your -- your folks are
19 requesting under Privacy Act. They're probably
20 requesting their cumulative dose data, their
21 annual summary data or whatever records DOE has
22 on them that they think they will provide under
23 Privacy Act. We go beyond that. We don't take
24 annual summary data. We don't take cumulative
25 dose data. We want the original data. And we

1 have been very fortunate of late, in the last
2 three or four years I would say, of getting DOE
3 to respond very quickly to our needs. There's
4 been a lot of leverage placed on these claimant
5 needs for their dose data and we've been very -
6 - I think very fortunate of late. If it would
7 have been a different time, as Dr. Bistline and
8 Mark Griffon knows -- if it would have been
9 eight years ago, we would still have been
10 waiting on that first claim to get out the door
11 probably. But I hear you loud and clear. I
12 want you to know that we're standing to help if
13 we can get anybody's dose data to them,
14 claimant or not.

15 **MR. GIBSON:** Larry, if I could just shortly
16 respond, and I -- I appreciate what you said.
17 But I was even -- I was even talking about when
18 I was the elected representative of the people
19 with their written consent, I couldn't get
20 their data. I got stonewalled and I will tell
21 you this. I heard the records manager of the
22 contractor telling the plant manager they were
23 spending too much money trying to get records
24 out once this bill passed. And they were in a
25 turf war with DOE saying DOE needed to pay for

1 it and it not come out of site budget. So I
2 don't know.

3 **MR. ELLIOTT:** I don't doubt what you say.

4 **MR. GIBSON:** I guess that's probably changed
5 now with a lot of these contractors shut down
6 but --

7 **MR. ELLIOTT:** I'm not doubting what you say.
8 I'm sure it's accurate and -- and -- and it's
9 recent I know. But I'm just saying that we
10 have worked very hard on the government side to
11 get access to this information in a timely way.

12 **MR. GIBSON:** And I believe that. And I -- And
13 I'm sure the claimants appreciate it.

14 **MR. ELLIOTT:** And it's because of the
15 experience that you have just mentioned.

16 **MR. GRIFFON:** Okay. I think I just want to try
17 to get back to finish up our agenda here if we
18 can. The one thing I wanted to ask on the
19 safety concern question. Has there been any
20 attempt to -- there must be a database of these
21 safety concerns?

22 **DR. ULSH:** I think again --

23 **MR. FITZGERALD:** Remember the context of this.
24 This was a very quick, abbreviated site visit
25 in light of the fact that this was moving

1 relatively fast and we went ahead and did it.
2 It wasn't intentionally a long research
3 project. It was in the context of the SEC. So
4 she went to the site, talked to Tony, was able
5 to identify safety concerns that had some
6 bearing on dosimetry without even being able to
7 investigate it, and use it as a sample. All
8 these are samples. It's not a perfect, you
9 know, lengthy process --

10 **MR. DEMAIORI:** And these are --

11 **MR. FITZGERALD:** -- designed --

12 **MR. DEMAIORI:** -- complaints.

13 **MR. FITZGERALD:** -- designed to be a sampling
14 process and so I think this was to sample what
15 was taken and I think certainly we've got the
16 evaluation.

17 **MR. GRIFFON:** Yeah.

18 **MR. FITZGERALD:** It makes you want to look at
19 it again but I -- I think --

20 **MR. GRIFFON:** I guess wondering, you know, if
21 it is a sample, I guess I was just curious,
22 especially on the zeroing dose or the frequency
23 of bioassay -- those two stand out amongst
24 these -- if -- if there was any way to key word
25 search a database.

1 **MR. FITZGERALD:** I was intrigued. I hadn't
2 heard this mentioned of the -- somebody having
3 electronic records. Who would have that?

4 **MR. GRIFFON:** That's what I --

5 **MR. DEMAIORI:** I believe Stolar (ph) is in
6 control of all records now. But we have a
7 safety database out at Rocky Flats. Everything
8 that was put on paper was put in the electronic
9 data system.

10 **MR. FITZGERALD:** That may exist somewhere.
11 Somebody has it.

12 **MR. DEMAIORI:** Absolutely.

13 **MR. FITZGERALD:** I hadn't heard of that. That
14 would be something that we need to talk about.

15 **MR. GRIFFON:** Yeah, that's what I was going to
16 say is if -- if -- because this issue is still
17 looming out there and I think very important,
18 that this concern about zeroing of doses. And
19 if we went through safety concerns and did
20 keyword searches and found that this concern
21 was being raised over and over, you know.
22 Maybe -- Maybe it would it would come up empty
23 but I -- I wonder if it's worth finding out if
24 there's a database and then doing keyword
25 searches.

1 **MR. FITZGERALD:** You said Stolar???

2 **MR. DEMAIORI:** Well, Stolar's got the contract
3 now through (unintelligible).

4 **MR. FITZGERALD:** Oh, ORAU and everybody's gone
5 that --

6 **MR. GRIFFON:** Do you know, Brant, if this
7 database exists or --

8 **DR. ULSH:** I don't but I don't have reason to
9 doubt what Tony's saying.

10 **MR. GRIFFON:** Yeah, right.

11 **MR. DEMAIORI:** Well, yeah our human -- well,
12 our IR department somehow was connected to the
13 company side of the Joint Safety Union --

14 **DR. ULSH:** Yeah.

15 **MR. DEMAIORI:** -- Committee. At the time when
16 I took over my job at the meeting was the
17 company's representative. And we -- we have an
18 electronic database. I mean there's always
19 been a company representative on the company
20 side of this Committee. And they reduced
21 everything to -- to an electronic database.
22 And everything I have is hard copy.

23 **DR. ULSH:** Right.

24 **MR. DEMAIORI:** And then --

25 **MR. GRIFFON:** And the database would go back to

1 what time period do you know or all the way
2 back?

3 **MR. DEMAIORI:** I believe it goes all the way
4 back because -- because we've been active in
5 safety from -- from the early '70s at least --
6 at least. You know, my records, as you saw,
7 didn't really pick up till '86; well, almost
8 nothing prior to '86 as far as hard copy safety
9 concerns. But we negotiated in the '70s Dow
10 Chemical Company Union Safety Committee.

11 **DR. MAKHIJANI:** Mark, you had said that the
12 research that NIOSH has done so far on the
13 safety concerns, I think it -- it is worthwhile
14 if there is a database to sample it.

15 **MR. GRIFFON:** Yeah.

16 **DR. MAKHIJANI:** But my -- my own kind of
17 feeling on this whole question of deliberately
18 manipulating the data records and zeroing out
19 high doses and the kind of things that are
20 there in the affidavit, the list that NIOSH is
21 now making, it -- it would seem if there are
22 these 23 instances, and if each one of those
23 things can be tracked down -- because there are
24 obviously people who felt very strongly that
25 their doses were manipulated -- that I think

1 would -- would -- again I'm not sure how many
2 communication -- they seem to be mostly
3 communication type of issues.

4 **MR. GRIFFON:** Yeah.

5 **DR. MAKHIJANI:** And so while it's worthwhile to
6 see whether they are data type of issues in
7 safety concerns, I think we have got a good
8 list of allegations of -- of data problems that
9 it would seem to me, you know, without
10 downgrading any of them, but it would seem to
11 me that it would be very good to prove one way
12 or another if those were -- those were
13 followed. And then if you have John's
14 suggestion, at least we could sit down with a
15 few of the people and look at the affidavits
16 and say this is what we found. What do you
17 think? And that would be pretty interesting,
18 powerful.

19 **MS. JESSEN:** Well, in the evaluation report we
20 address nine affidavits specifically. The nine
21 that were in the first part of the petition we
22 specifically addressed those in the report. In
23 this matrix that I was talking about a little
24 bit earlier we address all of them that came in
25 with part A and part B. And in addition to the

1 -- in the petition there are also little
2 sentences and statements of various other
3 concerns that have been pulled out, not only by
4 SC&A but by NIOSH as well. And we are
5 addressing those as well, in addition to
6 statements that were made to Brant from Tony.
7 So there are a lot of -- a lot of issues that
8 are being pulled together now and we're doing a
9 lot of research into those issues. So -- So
10 they will be addressed. It's just, you know,
11 like Brant says, it just takes time to -- to
12 pull all of this together.

13 **DR. ULSH:** Keep in mind, and I don't want to
14 mislead anyone about what the product is going
15 to be. In some cases we're going to pull the
16 string as far as we can, and it's going to be
17 inconclusive probably.

18 **MR. GRIFFON:** Right. I mean I understand. I
19 mean I understand there's a resource component
20 to this, too, and I understand sometimes
21 searching this database for these titles that
22 it can be misleading as we found out.

23 A lot of it is reporting not necessarily the
24 issue of zeroing badge or whatever.

25 I -- I was just looking for another mechanism

1 maybe to look at whether it could be a systemic
2 problem here or whether it was isolated cases.
3 I think most of the affidavits in the petition
4 are from later years as well, but --

5 **DR. MAKHIJANI:** That's true, where the workers
6 were.

7 **MR. GRIFFON:** Maybe not, maybe not.

8 **DR. ULSH:** Maybe not. There's certainly some
9 from earlier years. Right, Tony? I mean I
10 think so.

11 **MR. DEMAIORI:** There's --

12 **DR. ULSH:** Not the '50s but --

13 **MR. DEMAIORI:** Well, most of the guys from the
14 '50s are dead.

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

16 **MR. DEMAIORI:** I mean there's no pun intended
17 here but, you know, I offered a guy a job down
18 at Los Alamos building bombs and he told me
19 point blank everybody that I worked with is
20 dead, Tone. I'm out of the business. Forget
21 it. And that -- that is a prevalent attitude.
22 I mean there's not a lot of old chemical
23 operators, experimental operators still alive
24 from those days.

25 **MR. GRIFFON:** But I mean I just thought it was

1 worth identifying the (unintelligible) database
2 and -- and looking at it and maybe considering
3 whether it was feasible. I mean I don't want
4 to spend a lot of resources on leadings that
5 are potential dead ends. If you had a hundred,
6 you know, a hundred hits for the same sort of
7 title, I'd be reluctant to -- to look at all of
8 those certainly, you know.

9 **DR. ULSH:** We'll ask -- We'll ask Amy Wilson
10 if she knows about the safety concern database.

11 **MR. GRIFFON:** Right.

12 **DR. ULSH:** And maybe we'll do a couple of
13 keyword searches and report back to you.

14 **MR. GRIFFON:** I -- I think that's --

15 **DR. ULSH:** At that point we can evaluate.

16 **MR. GRIFFON:** You probably don't want to take
17 it any further yet, you know. That's for sure.

18 **MR. GIBSON:** Excuse me, Mark. Mark and
19 everyone, this is Mike. I'm sorry to end a
20 seven-hour stimulating conversation but as a
21 single parent I got to get off here now and
22 take my child to soccer tryouts.

23 **MR. GRIFFON:** I'll hold -- I'll hold down the
24 work group otherwise.

25 **MR. GIBSON:** But I just wanted to let you know

1 that I'd be signing off.

2 **MR. GRIFFON:** Okay, Mike. Thanks.

3 **DR. WADE:** Thank you.

4 **MR. GIBSON:** We will chat again.

5 **DR. WADE:** There's not a quorum from the Board,
6 so you can end your work. You can hold these
7 people with your personality.

8 **MR. GRIFFON:** I think we all have flights to
9 catch so -- I think we want to move on past
10 the safety concerns. I mean you gave --

11 **MR. GIBSON:** I'll be signing off so -- We've
12 had a good conversation. Thank you all.

13 **MR. GRIFFON:** Thanks, Mike.

14 **DR. WADE:** Thanks.

15 **MR. GIBSON:** Bye.

16 **DR. WADE:** Bye.

17 **MR. GRIFFON:** After the safety concerns topic
18 you -- you mentioned sort of your status on
19 logbook reviews already. But the other things
20 I had down here from -- from Joe's memo report,
21 external dose procedures. That was that other
22 table I think.

23 **MR. FITZGERALD:** That was, yeah, the list
24 there, the list of items from the dosimetry
25 problem logbooks to see whether there'd be any

1 value from -- yeah.

2 **DR. ULSH:** We are checking -- we've talked with
3 I think Joe Aldrich (phonetically) who is a
4 past mentor of external dose dosimetry at Rocky
5 Flats and he turned us onto a couple of Health,
6 Safety and Environment lab manuals and a QC
7 manual. We're trying to get those documents.
8 We've got one of them. We're looking for the
9 other one right now.

10 **MR. GRIFFON:** For the earlier time periods,
11 right?

12 **DR. ULSH:** It's the earlier --

13 **MR. LITTLE:** '85 -- probably they went into
14 effect probably late '70s.

15 **MR. GRIFFON:** Just --

16 **MR. LITTLE:** They were still in effect in the
17 early '80s --

18 **MR. GRIFFON:** Right.

19 **MR. LITTLE:** -- to '85, '86.

20 **DR. ULSH:** We think it might be valid, but we
21 can't say for sure until we actually see the
22 documents so we are looking for that. We've
23 also -- I've asked Joe to take a look at that
24 particular table that you're probably looking
25 at right now, Joe.

1 **MR. FITZGERALD:** Right.

2 **DR. ULSH:** Just to tell us, what would a
3 dosimetry worker do if he came across this
4 problem? What's --

5 **MR. FITZGERALD:** Well, I -- I think again
6 Kathy's been looking at these and really there
7 isn't any documentation on her investigation or
8 follow-up investigation so far. So it's not
9 clear if --

10 **DR. ULSH:** Right.

11 **MR. FITZGERALD:** -- anything has been done per
12 se.

13 **DR. ULSH:** All the documentation you see is in
14 the logbook --

15 **MR. FITZGERALD:** Right.

16 **DR. ULSH:** -- and I'm not sure that there would
17 be much past the logbook -- in between the
18 logbook and what you see at this point for
19 workers' dosimetry. I don't know if there's
20 anything in the middle.

21 **MR. FITZGERALD:** Well, I think that's the test.
22 I mean I believe, you know, there wasn't any a
23 priori assumption on this but looking for
24 sources of information and if these sources
25 don't pan out, they don't pan out.

1 **MR. GRIFFON:** So this is on an ongoing basis.

2 **MR. FITZGERALD:** Ongoing, right. Yeah.

3 **MR. GRIFFON:** And I think you've -- you've
4 discussed missing records but there's -- item
5 four in your report, destroyed records?

6 **MR. FITZGERALD:** This was the trailer issue.
7 Just the notion that I think you guys were
8 going to follow up and see if there's any
9 record or any history on that.

10 **DR. ULSH:** We are in the midst of following
11 that up right now.

12 **MR. GRIFFON:** And then item five is missing
13 records. Is that different than what we've
14 discussed already with missing --

15 **DR. ULSH:** Is that the '69 gap? Yeah.

16 **MR. GRIFFON:** This is the '69. This is '69.

17 **MR. FITZGERALD:** This is '69.

18 **MR. GRIFFON:** We kind of discussed it earlier.

19 **MR. FITZGERALD:** We discussed it earlier. This
20 is the specific examples, and I think you
21 accounted for the fact that you're still
22 looking at it.

23 **MR. GRIFFON:** Just wanted to go through those.

24 **DR. ULSH:** Right.

25 **MR. GRIFFON:** Make sure we didn't miss

1 anything. I know it's --

2 **DR. WADE:** A lot of people on the edge of their
3 seats.

4 **DR. ULSH:** Mark, it would be really helpful if
5 coming out of this meeting, and I'm sure you
6 plan to do this anyway, if we can get an
7 updated matrix.

8 **MR. GRIFFON:** Updated matrix.

9 **DR. ULSH:** Well, just because I mean in the
10 SC&A --

11 **MR. GRIFFON:** Yeah.

12 **DR. ULSH:** -- there were several pieces with
13 issues in them and it's getting hard to keep
14 track of.

15 **MR. GRIFFON:** Yeah, I think for all of us to
16 sort this out we need to -- to update the
17 matrix.

18 **DR. ULSH:** That would be very helpful.

19 **MR. GRIFFON:** And -- And I want to understand,
20 Karin, the matrix you've described.

21 **DR. ULSH:** Don't say matrix.

22 **MS. JESSEN:** I'm sorry.

23 **MR. GRIFFON:** I know -- I know. Well, the --
24 the -- the listing that you've described.

25 **MS. JESSEN:** Yeah, the listing. That's good.

1 **MR. GRIFFON:** Should that be rolled into this
2 process or is that -- is that going to be
3 provided to the work group?

4 **DR. ULSH:** Oh, sure. Sure. Once we finish it.
5 I mean keep in mind that we've already talked
6 about a number of the individuals that are --

7 **MR. GRIFFON:** Right. It overlaps I think.

8 **DR. ULSH:** Yeah, yeah, yeah. Absolutely.

9 **MR. GRIFFON:** But it has -- it goes further
10 than what we've discussed here, right? It's --

11 **DR. ULSH:** It'll be everything in the petition.

12 **MR. GRIFFON:** There's some new issues, right?

13 **DR. ULSH:** Tony and I had a conversation where
14 he gave me four examples, one of which I think
15 was already in the petition but three others
16 that were not. That's going to be included in
17 there.

18 **MR. GRIFFON:** So there's more issues that we
19 haven't discussed necessarily in our work group
20 process?

21 **DR. ULSH:** Well, it falls under the same
22 umbrella of -- of issues and data integrity
23 issues.

24 **MR. GRIFFON:** Yeah. Yeah.

25 **DR. ULSH:** Different examples.

1 **MR. GRIFFON:** Different examples, right.

2 **DR. WADE:** There's also a power to bring it all
3 together and look at it in its totality. I
4 think that's what Arjun was trying to say --

5 **DR. ULSH:** Right.

6 **DR. WADE:** -- how you feel about it.

7 **MR. GRIFFON:** I agree. Yeah, I will update the
8 matrix then.

9 **DR. ULSH:** I figured you would.

10 **MR. GRIFFON:** And I -- I don't -- well, I'll
11 have to talk with Lew a little bit about where
12 Rocky's going to be on the agenda and whether
13 we want more time in the subcommittee for, you
14 know, more of these in-depth discussions or --

15 **DR. WADE:** What you're thinking --

16 **MR. GRIFFON:** -- the full committee, yes.
17 We'll check it out. All right. Is there
18 anything else before we close?

19 **DR. WADE:** Thank you all very much obviously
20 for a long day but a productive one.

21 **MR. GRIFFON:** Yeah, thanks a lot.

22 **DR. WADE:** Thank you.

23 (Whereupon, the working group meeting was
24 adjourned at 5:00 p.m.)

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I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of May 30, 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 4th day of July, 2006.

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