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PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

convenes

MEETING 47

ADVISORY BOARD ON
RADIATION AND WORKER HEALTH

DAY TWO

The verbatim transcript of the 47th
Meeting of the Advisory Board on Radiation and
Worker Health held at The Sheraton Denver West,
Lakewood, Colorado on June 12, 2007.

*STEVEN RAY GREEN AND ASSOCIATES
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June 12, 2007

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TRANSCRIPT LEGEND

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

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ZIEGLER, TED, USW

1 because I've been watching a lot of the e-mails
2 go back and forth and stuff like that, and I'm
3 still not clear on some of these thorium
4 strikes and -- and where they were at because
5 I've got conflicting e-mails back and forth of
6 where they happened and when they happened and
7 I'm just wondering if there's any kind of
8 clarification of -- of what happened on those
9 or --

10 **DR. ZIEMER:** Okay, Mark or -- or --

11 **MR. GRIFFON:** (Off microphone) (Unintelligible)
12 NIOSH --

13 **DR. ZIEMER:** Yeah, maybe Brant -- we catch you
14 off-guard here, but the question -- and the
15 discussion can relate to issues raised by
16 Brant, as well. The question was the timetable
17 on the thorium strikes. Could you clarify that
18 for -- for Brad and other members of the Board,
19 and I don't know if you need to refer to your
20 presentation from yesterday, but Brad, your
21 question was when did they take place or -- and
22 where or --

23 **MR. CLAWSON:** Yeah, the facilities, because
24 I've kind of been monitoring some of the e-
25 mails back and forth and stuff like that, and I

1 was kind of understanding they were in a
2 different facility, and so forth like that, and
3 I'm just not quite clear on -- on how --

4 **DR. ZIEMER:** Both when and where.

5 **MR. CLAWSON:** When and how many were there,
6 actually.

7 **DR. ZIEMER:** Okay, see if Brant can clarify
8 that for us. Is that --

9 **DR. ULSH:** How -- is this --

10 **DR. ZIEMER:** That's -- there you go.

11 **DR. ULSH:** Okay. Brad, we talked to the
12 project manager in charge of the thorium
13 strikes. He was directly there, he was
14 directly hands-on in the projects, and he had
15 very explicit recollections about first of
16 where the strikes occurred. They occurred in
17 Building 881, Room 266. And he even showed us
18 what glovebox they were performed in. The
19 reason that they were performed there was
20 because there was not a lot of activity going
21 on in that building at that time, and you're
22 talking about a project that had a significant
23 external radiation potential, so that's why
24 they chose to do it there.

25 Now as I mentioned yesterday, there was some

1 confusion because there's a document that was
2 located that seems to indicate that the strikes
3 occurred in Building 71. We checked into the
4 pedigree of that document. The first one was -
5 - it's history of uranium-233 at Rocky Flats.
6 It was written about 40 years after the fact in
7 -- you know, in the 2000s -- and it referenced
8 a classified document that was actually written
9 in 1965. And we got redacted pages from that
10 document and that document is the source of
11 this impression that they might have occurred
12 in 71.

13 However, that classified document was written
14 by an investigative committee that was chosen
15 because they were independent. They were not
16 involved in the project themselves. And part
17 of the uranium-233 processing did occur in
18 Building 71. The first step was the receipt of
19 the uranyl nitrate solution, and they
20 transferred that into a receiving vessel, and
21 that occurred in Building 71.

22 The question then is what happened next. The
23 next step is the thorium strike, and did that
24 occur in 71 or -- or 81. The classified
25 document indicates 71, but that, again, was

1 written by people who were not involved in the
2 project, and we are basing our conclusion that
3 it was based in 81 on the project manager's
4 recollection, who was directly involved in the
5 project. So -- and he had very compelling
6 reasons as to why they did that.

7 **DR. ZIEMER:** That's 881 or 8--

8 **DR. ULSH:** Yeah, I'm sorry, Dr. Ziemer. They -
9 - the building designations did change over
10 time. They were originally 881, later the
11 first eight was dropped; same with 771. So
12 we're very confident that it was in Building
13 81.

14 However, in the worst case scenario -- let's
15 just say it did happen in 71. We've also got
16 air data for that -- that -- that room, too,
17 for the time.

18 Now, the second part of your question dealt
19 with when these strikes happened and how many
20 there were, and the first thorium strike
21 happened --

22 **DR. WADE:** Can I just stop you for a minute --

23 **DR. ULSH:** Yes.

24 **DR. WADE:** -- give you a moment to think of
25 your answer. The Board members and others on

1 the line can't hear because of a great static
2 problem.

3 **DR. ULSH:** Okay.

4 **DR. WADE:** We're going to take one quick fix,
5 which is for us to break the line and dial back
6 in, so let's do that, and then I'll ask them
7 again if they can hear. If we solve the
8 problem, fine. If we can't, we'll take the
9 next step along the chain, and I'm sorry to
10 interrupt, but I think it's important that the
11 other Board members hear this.

12 **DR. ULSH:** So you want to just wait until we do
13 that?

14 **DR. WADE:** Yes, ma'am. Consider your answer.

15 (Pause)

16 I'm sorry to do this, but I think it's better
17 to do it early in the day than...

18 (Pause)

19 This is Lew Wade. Have we resolved the static
20 problem? Can people on the hear me clearly?

21 **UNIDENTIFIED:** I hear you better now, Lew.

22 **UNIDENTIFIED:** Yeah.

23 **MR. GIBSON:** Yeah, for the moment that was
24 good.

25 **DR. WADE:** Okay. I guess I would ask David

1 Staudt, who I know is on the line, to serve as
2 our monitor. David, if you sense a problem,
3 then call my cell; I'll have it in front of me
4 --

5 **MR. STAUDT:** Will do, Lew, thank you.

6 **DR. WADE:** -- and we'll take the next step.
7 Sorry for the break in the continuity, but I
8 think it's important that everyone can hear.
9 Please, proceed --

10 **DR. ZIEMER:** Yeah, we'll proceed. Brant Ulsh
11 is answering the question about the thorium
12 strikes. Brant.

13 **DR. ULSH:** Right, and just to summarize because
14 I don't know how much the people on the phone
15 heard, we're very confident that the thorium
16 strikes occurred in Building 81, Room 266,
17 based on the information that has been provided
18 by the hands-on project manager.

19 Now the second part of your question, Brad,
20 dealt with when the thorium strikes occurred
21 and how many there were.

22 The first thorium strike occurred in April of
23 1965. I gave the exact -- I think the 26th
24 through the 28th, something like that. The
25 second thorium strike, and last thorium strike,

1 occurred in January of 1967. And I don't
2 recall the exact days off the top of my head,
3 but we have provided that information.
4 The motivation for doing a thorium strike was
5 that the U-233 that they were working with
6 contained, as a contaminant, U-232. And U-232
7 leads to a lot of short-lived daughter
8 products, one of which is thorium-228. And the
9 U-233 that they used in those first two
10 projects, 1965 and 1967, had a relatively high
11 concentration of that contaminant. It was
12 slightly less than 50pp -- 50ppm, so that was
13 the motivation to do thorium strikes on that
14 uranium-233, to remove that.
15 Now, Rocky Flats also did some subsequent
16 operations with uranium-233, but that uranium-
17 233 had a much lower concentration of the
18 contaminant, and so thorium strikes were not
19 necessary on those and they didn't do thorium
20 strikes after 1967. And that is again based on
21 the recol-- distinct recollections of the
22 project manager and also on the recollections
23 of Mel Chew, who is on the ORAU team, who was
24 involved with the uranium projects from the
25 other end and -- and both of those individuals

1 said no, we didn't do any later thorium strikes
2 because we didn't need to; the contaminant
3 concentration was much lower.

4 So there were two thorium strikes, 1965, 1967;
5 they occurred in Building 81, Room 266.

6 **MS. MUNN:** Brant, that's on your slides, the --
7 the dates, the exact dates, if you want them.

8 **DR. ULSH:** Right.

9 **MR. CLAWSON:** (Off microphone) (Unintelligible)
10 several different (unintelligible). (On
11 microphone) I've seen several different e-mails
12 going back and forth that has contradicted both
13 of that, so I wanted to get clear exactly what
14 we were dealing with.

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

16 **DR. MELIUS:** Yeah, Brant, don't go 'way. While
17 -- if -- I guess I'm trying to get a little bit
18 more clarification on this. You mentioned you
19 have air data for Building 771?

20 **DR. ULSH:** That is correct.

21 **DR. MELIUS:** Is it related to the same time
22 period and same processing that was going on?

23 **DR. ULSH:** It's related to the same time
24 period. We pulled the -- the air data for
25 Building 71, Room -- I can't remember if it was

1 14 or 114, but it's the room where they
2 received the -- the uranyl -- uranyl nitrate
3 solution for the time of the thorium strikes,
4 and so we have that available. We don't think
5 that that's where it occurred, but we do have
6 that available.

7 In terms of was it related to the process
8 involved here, it's just like the data that we
9 have in Building 81 in that it is the -- the
10 results from the air samplers that were in that
11 room. And the approach that we have taken with
12 the data that we have is that we will take the
13 highest of those air samples. And you know,
14 should -- should new information come up to
15 suggest that it was actually in 71 -- I don't
16 believe that's going to happen, but should that
17 happen, we would take the same approach in
18 Building 71 with that air data.

19 **DR. MELIUS:** Has the -- this is a question for
20 Mark. Has the working group seen this air
21 data? And evaluated -- I'm just --

22 **MR. GRIFFON:** Yeah, we -- we've seen data for
23 Building 81, so --

24 **DR. MELIUS:** I'm asking for 71.

25 **MR. GRIFFON:** No, no, no, we haven't seen that

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DR. MELIUS: Okay.

MR. GRIFFON: -- no.

MS. MUNN: Didn't need to, didn't think it was there.

UNIDENTIFIED: (Off microphone)

(Unintelligible) 149 771.

DR. ULSH: Okay. Dennis, right? Dennis just told me that it's --

UNIDENTIFIED: Room 149.

DR. ULSH: -- Room 149.

DR. MELIUS: Okay. And is that data available on the O drive?

DR. ULSH: No.

DR. MELIUS: Okay.

DR. ULSH: Not at the moment, but we can certainly make it available on the O drive.

DR. MELIUS: Okay. Okay, thanks.

DR. ZIEMER: Additional question, Jim?

DR. MELIUS: No, not on that issue.

DR. ZIEMER: Other Board members? Questions for clarification?

DR. MELIUS: I -- Brant, before you get down then, I have a separate issue, just briefly. You quoted from the NR-- NDR-- NRDP, NDRP

1 (unintelligible) --

2 **DR. ULSH:** NDRP.

3 **DR. MELIUS:** -- one of those reports yesterday.
4 I got a copy of the report, don't find any
5 mention of EEOICPA in it. I -- I can't recall
6 if you were quoting from the report or from a
7 transcript, and I guess I was looking for the
8 reference, and if -- ask --

9 **DR. ULSH:** Okay, when you say "the report," are
10 you asking about the NDRP protocol, or
11 something else?

12 **DR. MELIUS:** Well, I got "a report" --

13 **DR. ULSH:** Okay.

14 **DR. MELIUS:** -- "the report" -- hang on, I'm
15 trying to find the...

16 (Pause)

17 **DR. ROESSLER:** I think you quoted from the
18 report of the Advisory Committee.

19 **DR. ULSH:** Yeah, the first -- I --

20 **DR. ROESSLER:** Report itself.

21 **DR. ULSH:** I presented two quotes. The first
22 one recommended -- my loose paraphrase here --
23 recommended that the NDRP results be
24 substituted for the dose of record. That came
25 from the final recommendations of the NDRP.

1 **DR. MELIUS:** Okay, so that's -- that's -- I
2 have -- what I have is the protocol report.

3 **DR. ULSH:** Okay. The protocol is a technical
4 document that the Scientific Advisory Committee
5 recommended be prepared by the scientific staff
6 of the NDRP.

7 **DR. MELIUS:** Okay.

8 **DR. ULSH:** So that's not a -- an Advisory
9 Committee product that you're looking at.

10 **DR. MELIUS:** Okay.

11 **DR. ULSH:** So the first quote about using the
12 NDRP results as the dose of record came from
13 the final recommendations of the NDRP
14 Scientific Advisory Committee. The second
15 quote about the NDRP results forming a reliable
16 basis for dose reconstruction under EEOICPA
17 came from one of the meeting minutes of, you
18 know, a meeting just like this one where the
19 Scientific Advisory Committee got together and
20 they issued minutes.

21 **DR. MELIUS:** Uh-huh.

22 **DR. ULSH:** And that happened sometime after
23 2000. I don't know off the top of my head
24 exactly which one, but I would be happy to
25 provide those minutes to you.

1 **DR. MELIUS:** Could you provide them to me this
2 morning? I just asked, I'm not --

3 **MR. GRIFFON:** We -- we have -- the workgroup
4 has those. I have those with me. I -- I can
5 probably --

6 **DR. MELIUS:** Okay.

7 **MR. GRIFFON:** Yeah.

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

9 **DR. ULSH:** Thank you, Mark. I know they're
10 sitting on my desk in my office in Cincinnati,
11 but that doesn't do us much good here.

12 **DR. ZIEMER:** Other questions? Jim, did you
13 have a follow-up or --

14 **DR. MELIUS:** No, not right now.

15 **DR. ZIEMER:** I guess, Brant, you can stay
16 there, too. Maybe you can help with this, or
17 I'll ask Mark. Mark, yesterday in your
18 presentation you had a slide that is called
19 additional issues with regard to neutron
20 approach, and you discussed buildings where
21 neutron work was done and also the issue of
22 when NTA film was or was no longer used. Do --
23 do we have any more definitive information on
24 either of those? How well do we know where
25 neutron work occurred, and number two, when --

1 do we know now when use of NTA film was
2 terminated at Rocky?

3 **DR. ULSH:** Do you want me to field that, Mark,
4 or do you want to -- okay.

5 The first question, what buildings were -- were
6 jobs performed that presented significant
7 neutron exposure potential. Yes, we do know
8 that. It was the plutonium processing
9 buildings, and there are several -- 771, 776 --

10 **DR. ZIEMER:** I don't need all the numbers --

11 **DR. ULSH:** Okay, there's a lot of them.

12 **DR. ZIEMER:** -- I just (unintelligible) we know
13 what buildings they were.

14 **DR. ULSH:** Yes, we do. There -- in addition,
15 there was the critical mass laboratory, which
16 was Building 88--

17 **UNIDENTIFIED:** (From the audience) 886.

18 **DR. ULSH:** Thank you -- 886. And that was a
19 building that would have presented neutron
20 potential.

21 Now yesterday I believe Mark asked about these
22 in situ experiments, and I described those
23 yesterday -- you know, to determine safe
24 storage conditions for ur-- uranium parts and
25 plutonium parts. Those experiments were

1 performed in the 1950s by two individuals -- I
2 know their names -- and they were the
3 individuals that were responsible for nuclear
4 criticality safety for the entire plant in the
5 1950s. And so I checked to see whether or not
6 they were monitored for neutrons in the '50s,
7 and both of them were.

8 **MR. GRIFFON:** I -- I should say all the -- all
9 the workgroup has confirmed to this point is
10 that the -- those sub-critical experiments were
11 done in that facility. I mean that's all I --
12 I heard Brant's response to this yesterday, but
13 we haven't seen that information necessarily.
14 We've just heard what you've heard -- what the
15 rest of the Board has heard, so...

16 **DR. ULSH:** Yeah, this was a late-breaking --

17 **MR. GRIFFON:** Yeah.

18 **DR. ULSH:** -- question --

19 **MR. GRIFFON:** Yeah.

20 **DR. ULSH:** -- that came up, but...

21 **DR. ZIEMER:** And what did you say about the NTA
22 film?

23 **DR. ULSH:** Oh, yeah, right, the NTA film and
24 when they phased it out. They transitioned
25 from NTA film to neutron TLDs, and that

1 transition occurred in 1970. Now there was
2 some confusion late in the process here because
3 a couple of reports indicated maybe some
4 different dates, and I think that confusion
5 stems from the fact that the badges that they
6 used at the time had the capability to insert
7 neutron films, but they didn't -- there's no
8 indication that they did that after 1970, so
9 1970 was the transition year from film to TLDs.

10 **MR. GRIFFON:** TLD.

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

12 **DR. ZIEMER:** And what was the -- what was the
13 TLD system for neutrons? Was this one that
14 used a -- moderated the neutrons and then
15 detected the thermals or do --

16 **DR. ULSH:** Well, I don't know off the top of my
17 head, Dr. Ziemer, what -- what the TLD system
18 was that came in.

19 **MR. GRIFFON:** I thought it was lithium 6/7
20 combination --

21 **DR. ULSH:** Sounds right.

22 **MR. GRIFFON:** -- system, yeah, yeah.

23 **DR. ULSH:** That sounds right, but I --

24 **MR. GRIFFON:** I'm pretty sure of that.

25 **DR. ULSH:** -- can't say definitively.

1 **MR. GRIFFON:** Yeah. And then they had an
2 algorithm --

3 **DR. ZIEMER:** Okay, so --

4 **MR. GRIFFON:** -- to determine --

5 **DR. ZIEMER:** Yeah.

6 **MR. GRIFFON:** -- you know, yeah.

7 **DR. ZIEMER:** Right, uh-huh. So this would be a
8 -- what, a lithium fluoride enriched in
9 lithium-6 and one in lithium-7 --

10 **MR. GRIFFON:** One in 7, yeah.

11 **DR. ZIEMER:** -- and you do the differencing.

12 **MR. GRIFFON:** Right. Well, it -- maybe not
13 just the -- it's a little more complicated --

14 **DR. ZIEMER:** Oh, yeah.

15 **MR. GRIFFON:** -- an algorithm, but yeah --

16 **DR. ZIEMER:** Right, right.

17 **MR. GRIFFON:** -- yeah, that's the sense, yeah.

18 **DR. ZIEMER:** Right. Okay. Other questions?

19 **DR. WADE:** Could I do a quick line check? We
20 had dif-- complaints of difficulties, now I'm
21 getting the high sign. Are things okay out
22 there? Can you hear me now clearly?

23 **MR. STAUDT:** Lew, you're pretty good, but
24 there's a tremendous amount of noise on this
25 line and pulsing and clicks and scrapes, it --

1 it's terrible.

2 **DR. WADE:** Is this still -- that is still the
3 case now?

4 **MR. STAUDT:** No, when you speak, you're pretty
5 clear, but as soon as you get off the line and
6 it opens up for everybody else, it's very
7 noisy.

8 **DR. WADE:** Okay, let me try Brant now. Brant,
9 speak.

10 **DR. ULSH:** Okay, is -- can you hear me clearly
11 or --

12 **MR. STAUDT:** You're good.

13 **DR. ULSH:** Oh, okay.

14 **UNIDENTIFIED:** I don't hear the noise anymore.
15 Either someone dropped off or muted their
16 phone.

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

18 **DR. WADE:** We believe that the problem was
19 someone had a line open, was typing and hadn't
20 muted the phone. The -- the technical person
21 here feels now the problem is resolved. Again,
22 David, call me immediately if you have a
23 problem.

24 **DR. LOCKEY:** Lew I would suggest that -- and
25 Paul, everybody speak directly into your

1 microphone, too.

2 **DR. WADE:** Okay. Little bit of discipline on
3 our side then, everybody directly into the
4 microphone, and we'll keep working at this.
5 And again, if we need to, the next solution is
6 ev-- we ask everybody to call back in, but at
7 this point I don't think that's necessary so
8 let's proceed then. Again, everyone real close
9 to the microphone.

10 **DR. ZIEMER:** Okay. Further questions or
11 comments?

12 (No responses)

13 Okay. Thank you, Brant.

14 **ROCKY FLATS PETITIONERS' PRESENTATION**

15 **DR. WADE:** Petitioners.

16 **DR. ZIEMER:** Thank you, Mark. I think we'll
17 proceed to hear now from the petitioners, and
18 let me turn the mike over to Jennifer Thompson.
19 And Jennifer, you have others who are going to
20 participate with you? Is there a debate as to
21 who's going to lead off here?

22 **MS. THOMPSON:** (Off microphone) lead off
23 (unintelligible).

24 (On microphone) Good morning to the Board and
25 thank you again for the opportunity to speak to

1 you today and present some additional
2 information on behalf of the petition. I would
3 like at this point to introduce Anthony
4 DeMaiori, former president of the United Steel
5 Workers of America and petitioner. If you
6 recall, he's been out of town for many months
7 and is back with us, and he's going to serve as
8 the moderator for the rest of this session for
9 us. Thank you.

10 **MR. DEMAIORI:** Thank you, members of the Board,
11 for granting us this opportunity to present to
12 you today. Right now I'd like to call -- call
13 our distinguished Congressman, Bob Beauprez.
14 Congressman?

15 **CONGRESSMAN BEAUPREZ:** It's really an honor to
16 be with you this morning, and I think
17 especially appropriate given the setting and
18 the fact that we're really talking about a
19 generation of patriots who helped us win a most
20 important war. I'd like to just begin our part
21 of the presentation, if everyone would please
22 rise, and we'll do the pledge of allegiance:
23 I pledge allegiance to the flag of the United
24 States of America, and to the republic for
25 which it stands, one nation under God,

1 and we greatly appreciate their dedication.

2 I also want to thank our Colorado Congressional
3 delegation, and the Governor and Lieutenant
4 Governor of our great state, who in unprecedented
5 (sic) partisan support have urged the Board to
6 approve our petition today.

7 I also want to thank the 15 Senators, including
8 two Presidential hopefuls, who are calling for
9 Congressional hearings to investigate the
10 corruption of process and administration of the
11 Energy Employees Occupational Illness
12 Compensation Program Act.

13 I also want to thank the *Rocky Mountain News*
14 for their unrelenting coverage of this
15 important issue.

16 And most importantly, I want to thank the Rocky
17 Flats workers, our workers, our friends, our
18 family, who have toiled with equal dedication
19 to first make this world safe for democracy and
20 then diligently worked themselves out of their
21 jobs and performing the monumental
22 environmental cleanup and closure of the Rocky
23 Flats site.

24 I would like to take a moment now to pause in
25 thanks to our workers, those that are sick,

1 those that may one day become sick, and most
2 importantly, the 67 workers who would have
3 ultimately been approved for compensation but
4 died waiting. May no more workers have to die
5 while awaiting their claims to be processed.

6 (Pause)

7 Thank you. Oh, look, it works. Okay. Oops,
8 my slides are out of order.

9 (Pause)

10 Okay, I wanted to show those photos to remind
11 everybody of why we are here, and that is for
12 our sick workers, for their surviving spouses
13 in particular, who have an extremely difficult
14 time getting through the process in terms of an
15 individual claimant because they simply don't
16 have the knowledge or information. If NIOSH is
17 having a hard time determining which room
18 numbers the strikes occurred in or what
19 buildings they occurred in, imagine the
20 difficulty of a surviving spouse in determining
21 what buildings their -- their husband or their
22 wife worked in during their 30 years of
23 employment at -- at Rocky Flats. So we're here
24 for them, the workers, the spouses, and we're
25 here because we still believe in our hearts

1 that justice for all is the right answer today.
2 That's the reason we wanted to begin today with
3 the pledge of allegiance is to remind everybody
4 what this country is about, and that is about
5 justice for all.

6 Our workers should not have to fight for their
7 lives and fight with the government at the same
8 time in terms of getting claims compensated
9 through this process. They deserve better than
10 that.

11 Last month the Advisory Board took preliminary
12 actions to approve SEC status for three small
13 carved-out classes. You all know them well,
14 1952 to '58; the neutrons '59 through '70; and
15 thorium. And every indication to us has been
16 that the Board is prepared today to vote to
17 approve only these narrow classes.

18 We are here to continue to press SEC status for
19 the entire class of Rocky Flats hands-on
20 workers. And again, the pledge you heard ended
21 in "justice for all" and that's what we ask you
22 to do today is to give justice to all of our
23 workers.

24 NIOSH is very good about citing a lot of
25 statistics -- 300,000 internal records, 400,000

1 this, 80,000 lung counts. There's some
2 statistics they won't cite so prominently or
3 proudly -- 742, the average number of days it
4 takes a claim to be processed resulting in a
5 positive worker ruling; 67, the number of
6 workers who were going to be approved but died
7 awaiting the ruling; 70, the percentage of
8 workers with cancer that have been denied
9 compensation; 33, the percentage of workers
10 from 1964 to 1992 with missing data in their
11 records.

12 Oh, well, I guess we have a little alignment
13 issue there, but that's okay. You guys have
14 seen this before. Most of the stuff at the top
15 you've definitely seen before. This is the
16 time line details for this process. I just
17 want to remind everybody today we are on day
18 847 since the petition was submitted.

19 In 2000 the Energy Employees Occupational
20 Illness Compensation Act was passed. It's been
21 seven years. Some of our workers have been
22 waiting seven years. And the other fact on
23 this -- this slide that's important is that the
24 NIOSH recommendation, which was a
25 recommendation to deny the entire petition in

1 its entirety, was made on day 40 -- day 440
2 after receipt versus the amendment to the law
3 in 2005 which required them to make that
4 recommendation within 180 days of receipt. Now
5 NIOSH in their rule said that we want to do it
6 180 days after certification, but even with
7 their rules you can see at 315 days they missed
8 it substantially.

9 Okay. To remind you what we were asked to do
10 when we submitted our petition, and that was we
11 were asked to prove that there was a class of
12 Rocky Flats workers for whom it was not
13 feasible to accurately estimate the radiation
14 dose they received. We believe that we did
15 that on the day we submitted the petition, and
16 we believe that the law meant today. The law
17 didn't mean government wait almost two and a
18 half years and then deny the petition based on
19 a new set of standards, new TIBs, new
20 information that wasn't available at that time.
21 The charter of the Advisory Board was to
22 evaluate the petition, not to help the
23 government fix the wrongs. We are very glad
24 that the wrongs are being corrected, don't get
25 us wrong -- there's a lot of wrongs there --

1 don't misunderstand. We're -- we're proud of
2 the work that's been done to -- to make the
3 dose reconstruction process better. We just
4 feel that that is not what -- what was set out
5 in the law originally, and we believe that our
6 petition, on the day it was submitted, was
7 valid; that obviously the Board and the working
8 group has found many valid points in the
9 petition, otherwise we wouldn't still be here
10 847 days later.

11 We believe that fundamentally from the
12 beginning, some of NIOSH's basic assumptions
13 were -- were very flawed; that their house is
14 built on sand and not on science; that on April
15 7th, 2006 when they issued their evaluation
16 report, they did an important and interesting
17 thing. They determined that they were going to
18 expand the class beyond the class that the
19 petition was filed for to include everybody at
20 Rocky Flats. And in doing so they said NIOSH
21 determined that all employees -- all employees
22 -- were similarly or identically exposed and
23 therefore cannot be disaggregated from the
24 union workers with respect to their work and
25 exposures. They offered no scientific basis

1 for that conclusion they came to, and nothing
2 can be further from the truth.
3 The union collective bargaining agreement that
4 they've had at Rocky Flats clearly delineated
5 what work was steel worker work and no one else
6 was allowed to perform that work. In fact, you
7 would get grieved if you did. The steel
8 workers were the only ones who handled
9 plutonium with their hands in the gloves that
10 did chemical processing of plutonium. They
11 were the hands-on workers. And so we believe
12 that that statement is -- is grievously in
13 error. They had significantly greater
14 potential for inhalations and external doses
15 than any other categories of workers.
16 Now NIOSH would have you believe that I was
17 similarly exposed. I worked at Rocky Flats for
18 14 years and in the end I was a nuclear
19 decommissioning project manager. Okay? I
20 oversaw work. I went in the back areas and
21 watched my crews work and -- and dressed out
22 and wore a respirator. But I did not go inside
23 tents with contaminated equipment and cut it
24 up; the steel workers did. I did not put my
25 hands in the gloves and remove plutonium

1 materials and holdup from glovebox systems; the
2 steel workers did that work. So we believe
3 that -- that from the beginning, their premises
4 are fundamentally flawed and not backed up by
5 any -- any facts.

6 There are limited exceptions where folks that
7 were salaried people or other classifications
8 that did receive substantial exposures, but
9 those are the exception, not the rule. And
10 those would be instances of fire response and
11 cleanup, high dose vault work, and research and
12 development efforts where scientists did put
13 their hands in gloves and manipulate materials
14 in research efforts. But those are isolated
15 and easily separated from the rest of the work
16 at the site.

17 And -- and -- and it's interesting that as late
18 as 847 days we're still arguing about some
19 fundamental facts about the history of
20 buildings at Rocky Flats, particularly Building
21 881. I -- I did a quick internet search a long
22 time ago -- and by the way, our petition
23 pointed out that there was plutonium in 881 --
24 and in the historic American engineering record
25 itself cites the fact that beginning in 1960

1 and until 1977 that they did chemical recovery
2 operations on site returns that included
3 plutonium processing.

4 And -- and it's interesting that NIOSH uses the
5 term nuisance plutonium. When they did the
6 cleanup of Building 881 they found extensive
7 contamination -- plutonium contamination in the
8 ducts and throughout the building. What's also
9 interesting is if this was in fact just nuisan-
10 - nuisance plutonium; i.e., just like little
11 bit of contamination that you'd brush off your
12 shoulder or something like that, then -- then
13 it wouldn't have been necessary for them to put
14 up an entire evaporation, calcination and
15 drying process for that and then take it to
16 another building to recover the plutonium.
17 There was enough plutonium there that they
18 wanted to recover it, so you're not talking
19 about just a small amount of isolated
20 contamination. They had plutonium in that
21 building.

22 And we think this draws the fundamental
23 question of NIOSH's ability to recon--create
24 the history of buildings and to not leap to the
25 easy answers all the time that's convenient and

1 fits their models. The assertion that two
2 people single-handedly conducted critical mass
3 testing is -- is absolutely absurd, given --
4 given the requirements, the safety
5 requirements, the building requirements at that
6 facility, two people couldn't do almost
7 anything. It took 14 people to change a light
8 bulb in a criticality controlled area, so you
9 think that two people could really go into the
10 facility, take material out, put it together
11 and -- running the risk that it could go
12 critical, without an -- a support staff, no
13 RCTs, no hands-on workers, no nothing? Two
14 people may have been in charge of those
15 criticality experience (sic), they may have
16 been project managers like me, but I didn't
17 single-handedly run the projects that I did. I
18 had dozens of workers doing that. Okay? So
19 that's ridiculous. I mean -- so it's -- it's
20 shocking that 847 days later that we're still
21 discussing things so fundamental as whether or
22 not there was plutonium in Building 881. And I
23 think that just draws into question the
24 ability, particularly that lots of the models
25 rely a lot on what activities were in what

1 buildings, whether there were neutrons or not,
2 and then where the workers actually were at any
3 given point in time to reconstruct their dose.
4 I find this very disturbing.
5 Thank you. She got it to work.
6 The Neutron Dose Reconstruction Project, as --
7 as you all recognize, is -- is another area
8 that's -- that's disturbing. After 847 days,
9 why is this still an outstanding issue? Why
10 are they now just pulling another method or
11 another model out at the last minute? Why
12 again were we not provided the report that --
13 that NIOSH discussed yesterday, and it appeared
14 that many on the Board had not seen this
15 information, either. And -- and now we're
16 going to make a -- a rush decision after 847
17 days. I mean I -- I don't believe the Board
18 has any other choice but to approve neutron
19 exposures from '59 to '70 just based on the
20 fact of this last-minute maneuvering. I think
21 that it would be very insulting to me if I were
22 a Board member to -- to have information
23 discussed that I hadn't been privy to prior to
24 the meeting.
25 In addition, in that conversation there were

1 some shameless misrepresentations. The 1969
2 fire in Building 776, when NIOSH implied that
3 following the fire the workers were sitting in
4 the cafeteria and so they weren't getting any
5 dose. Hello, following the fire the workers
6 were cleaning up from the fire getting huge
7 doses. Okay?

8 In 1970 there was a strike. Okay, yeah, there
9 was a strike, 91 days. However, it's
10 interesting that the site still met every
11 single one of its production schedules for
12 1970, so what do you think that meant? That
13 meant that when the workers came back from
14 strike, they worked a lot of overtime, a lot of
15 extra hours and got a lot of exposure, not less
16 exposure, the same exposure they would have
17 gotten if they'd been working those 91 days.
18 So it's just very frustrating to hear those
19 kinds of statements and -- and that they're
20 asserted as factual is -- is really
21 frustrating. If -- if the NDRP works, as NIOSH
22 asserts -- they put those two wonderful quotes
23 up on the board and said oh, yeah, it's all
24 great. It was the model, it's wonderful, we
25 should use it. Okay. Well, if that's true,

1 then why did they come up with another method?
2 If that's true and they really believe that
3 true -- is true, they should have the integrity
4 and stick behind it and prove to the Board that
5 it does work, not come up with another Band-aid
6 or another method.

7 We believe that there's substantial process
8 issues, and we believe the petition was valid
9 on the day it was submitted. Ultimately if --
10 if we end up in appeal for this process, we
11 have to discuss two things, the science and the
12 process. And in terms of the process, we
13 believe that currently we're out of bounds of
14 the process that the Board was chartered to
15 evaluate and not fix. And that's not really to
16 lay blame on the -- on the Board. We
17 understand your -- your desire, your goal to
18 fix what's wrong and -- and bless you for that.
19 But just in terms of this process, it's not
20 what was envisioned.

21 Petition notification and non-timely
22 distribution of reports, conflict of interest
23 issues that we've discussed before and I won't
24 go -- go over again, that the process has in
25 effect been tainted by political and budgetary

1 influences. You can't help but, in this
2 environment, have that affect the process. The
3 180-day requirement was not met by NIOSH; that
4 new science is used as the basis for denial --
5 I found it very interesting that when NIOSH
6 issued its report on April 7th of 2006 they
7 cited a list of 11 technical information basis
8 documents that they based their report on, and
9 eight of the 11 were written after -- or
10 approved after the petition was filed. So if
11 you look at that TIB-006, X-ray procedures,
12 that's really not a crucial one, but 19
13 coworker data is, 20 coworker data for external
14 data is; 23, assignment of missed neutron doses
15 is; 27, supplemental external dose information
16 is; 33, applications of internal doses is
17 important; 50, use of the NDRP document stuff,
18 that's very important; and then -- though it's
19 not on there because it came out not till
20 February of 2007 is TIB-49, which is the high-
21 fired oxides TIB. So -- so the question is, on
22 the day the petition was submitted, could they
23 accurately reconstruct dose, and I believe the
24 answer is no. Otherwise they would not have
25 gone through the trouble of creating all these

1 new technical information basis document,
2 changing methods, coming up with new
3 assumptions.

4 There's a couple of interesting things when
5 asking questions. We -- we found on the SC&A
6 report where it said that from '64 to '92 33
7 percent of workers had air -- had missing data,
8 and -- and when I asked NIOSH about that, they
9 -- they said nor did we find that 33 percent
10 had missing data. The records were complete.
11 So I'm a little confused here because as SC&A
12 is telling me there was missing data and NIOSH
13 is telling me the worker -- the records were
14 complete.

15 You know, and again, quantity is not quality.
16 I mean you keep hearing from NIOSH the numbers
17 of this and the numbers of that and how many
18 they have. The fact that records are present
19 is unrefutable. Yes, records exist at Rocky
20 Flats. The question is the accuracy of those
21 records and being able to reconstruct dose
22 based on a moving site population, based on
23 unknowns or -- or historically people not
24 remembering what happened where, that -- that's
25 where you get into a challenge. SC&A said

1 there are large gaps in internal dose data,
2 notably from 1964 to 1992, and SC&A said NIOSH
3 has not demonstrated its ability to fill
4 existing gap datas -- gaps for external dose.
5 The SC&A report on data completeness looked at
6 32 cases and then also at 20 non-random cases,
7 and in the report it says randomly selected
8 cases allow a picture to be developed about the
9 general extent of the gaps in the Rocky Flats
10 workers' records. But then NIOSH told me we
11 are not extrapolating from 32 random samples to
12 the entire Rocky Flats population. Are we
13 extrapolating or are we not?
14 Another interesting round of questioning was
15 the petitioner asked was it possible for NIOSH
16 to accurately reconstruct dose for individuals
17 with high-fired oxide exposures prior to
18 changing the particle size and prior to the new
19 Technical Information Bulletin -- petitioner
20 said that. NIOSH on June 5th said yes, so they
21 said yeah, on February 15, 2005 it was possible
22 for us to accurately reconstruct dose.
23 Okay. Then they went on to say all cases that
24 were denied compensation using the default ICRP
25 solubility models are currently being re-

1 evaluated to determine if they would become
2 compensable when the methods described in TIB-
3 49 are used. So now I'm confused again.
4 In a letter they say the prior dose
5 reconstruction POC calculation on your claim is
6 now invalid -- starting to sound a lot like
7 they couldn't reconstruct dose for high-fired
8 oxides on the day the petition was submitted.
9 There's potential that they're going to have to
10 do 3,000 re-evaluations or redo dose
11 reconstruction for 3,000 people. To me that
12 sounds a lot like they couldn't reconstruct
13 dose accurately.

14 We believe that there are some remaining issues
15 for high-fired oxides. Particle size we still
16 believe is one. NIOSH decided on a particle
17 size of one, and in response to our questions
18 cited one study in 1967 as the basis for
19 selection of that particle size. We have
20 documentation for particle size as small as
21 0.12 -- now I think there's a -- a measurement
22 difference there. I think the .12 is one --
23 one type of measurement and the 1.0 is another,
24 so I think the .12 is actually like .36, so
25 it's not as bad as it looks on that slide, but

1 I'm not a scientist so I don't quite understand
2 the difference between AMAD and MMD, but I'm
3 sure you guys get that.

4 I believe that retention in the lungs is not
5 clearly known and -- but what -- what I mean by
6 that is you don't know how long it stays in the
7 lungs. We haven't done studies to determine
8 how long is that material staying in the lungs
9 and what does that do in terms of -- of how
10 it's metabolized and distributed to the rest of
11 the body.

12 NIOSH dismissed the ceramicized particle issue
13 with no real scientific consideration, even if
14 shielding -- they conclude that shielding would
15 not be 100 percent. Okay, so even if it's not
16 100 percent, does it -- does it allow your lung
17 count to -- to think that there's less
18 plutonium in your lungs. Okay. You can see
19 it, you know it's there, but do you know how
20 much is there.

21 We found it interesting -- this word
22 "plausible" that -- that people seem to use.
23 I'm not sure if -- if they really recognize the
24 connotations of it, but SC&A in its report said
25 that it was plausible that if you use TIB-49

1 you could do dose reconstruction, and -- and
2 that struck me as odd so I looked up the word
3 plausible, and plausible means seemingly true,
4 often implying disbelief; applies to that which
5 at first glance appears to be true, but which
6 would may or not -- may or may not be so. So
7 what that tells me is we think it might work,
8 but we're not really sure. That's really not
9 good enough when you have people that are dying
10 of cancer.

11 We think there's still a lot of questions about
12 super class Y material that's not known. In
13 2003 the PNNL said the precise nature of super
14 class Y material is not known and -- and the
15 body of research data created from 2003 to
16 present is almost minuscule. There's no new
17 research or new science on this topic, so I
18 don't know how you go from a point in time
19 where the precise nature is unknown to a point
20 in time you think that you can accurately apply
21 a method to reconstruct dose. Things like what
22 temperature is necessary to create a high-fired
23 oxide. Okay? You know, NIOSH keeps
24 referencing the fires, but there were a lot of
25 thermal processes at Rocky Flats that created

1 high-fired oxides, and those are being ignored.
2 What particle size is generated from high-fired
3 processes and plutonium fires? Again, they
4 have one datapoint.
5 How long does a high-fired oxide particle stay
6 in the lungs in its insoluble form before
7 becoming soluble and making its way into the
8 urine stream of an affected worker or to their
9 bones or to other places in their body? How
10 does the body metabolize high-fired oxides?
11 How do you know what percent of a worker's
12 plutonium exposure came from high-fired versus
13 soluble forms? How do you know what type is in
14 their lungs? Do particles resulting from high-
15 fired processes and fires have a ceramicized
16 nature? What research was done on this?
17 We believe there's several unresolved issues
18 still at this point, and for that reason,
19 again, we are asking the Board to vote on the
20 petition in its entirety and grant justice to
21 all of the Rocky Flats workers. Accuracy of
22 monitoring of external exposure to the upper
23 torso, head and back when the dosimeter's
24 blocked or pointed in the opposite direction;
25 movement of personnel across the site, accurate

1 records do not exist on where people were for
2 what periods of time. You can't go on storage
3 board location. You also can't go on people's
4 memories. They just don't remember, and if
5 they're dead their spouses definitely don't
6 know where they were for what years.
7 Timeliness, 742 days to process a claim is
8 definitely a timely process.
9 Neutron doses 1952 to 1970, you all know that
10 issue better than I do.
11 Missing records, large gaps in internal dose;
12 the adequacy of the coworker model which again
13 relies a lot on location and -- and areas where
14 neutrons were. The valid-- validity of dose
15 records for specific workers working in high
16 dose rate jobs, you heard workers testify that
17 they thought sometimes the zeroes meant that
18 they had burnt out on their dosimeters.
19 The new methods, the models have not been
20 sufficiently tested or proven. There's lack of
21 independent verification in the NDRP data.
22 The high-fired oxides issue, and failure for
23 NIOSH to understand basic building history and
24 processes and extent of contaminants, and the
25 willingness of NIOSH to disregard the truth or

1 manipulate it to meet their needs. There's no
2 effort made to -- to determine the effects of
3 the radioactive cocktail where chemicals and
4 radioactive materials are exposed and -- and
5 metabolized differently in the body.
6 You know, I never thought I would quote Shelby
7 Hallmark because of some of the other things he
8 said, but this is something that he said that
9 makes sense now. He said does it make any
10 sense to continue to defend a dose
11 reconstruction process that will just get more
12 complicated and attenuated. I think in the
13 last two years and four months or 847 days the
14 dose reconstruction process for Rocky Flats
15 workers has definitely become more complicated
16 and attenuated. With all the new models and
17 all the new TIBs, it's becoming more difficult,
18 not less difficult to reconstruct dose.
19 We believe that what has happened over the last
20 847 days dictates that the Board should approve
21 the SEC petition for Rocky Flats in its
22 entirety. Just the fact that it has been more
23 than two years alone and significant factors
24 are still unresolved means that our petition is
25 valid and should be approved. The fact that

1 the site profile was significantly re-- changed
2 and reviewed, that nine new TIBs were added,
3 the particle size for high-fired oxide was
4 changed, that the new coworker models were
5 developed, adjustment factors, other models
6 were tweaked, that the new methodology just
7 yesterday unveiled for -- for NDRP
8 reconstruction, and that -- that the PERs
9 mandate that now NIOSH will have to do -- redo
10 thousands of dose reconstructions based on
11 these changes. To me that means you couldn't
12 do it accurately before, otherwise why are you
13 redoing it? For goodness sakes, if you could
14 do it accurately before, please don't spend my
15 taxpayer dollar redoing it.

16 The Board has no legal or moral choice but to
17 approve this petition in its entirety today,
18 and that's what we ask you to do. Please grant
19 justice to all of our workers. Thank you.

20 (Pause)

21 **MR. DEMAIORI:** At this time I'd like to
22 introduce Mr. Bill Brady, a law professor at
23 the University of Denver's Sturm College of
24 Law, who teaches advanced law classes in
25 hazardous waste and toxic torts and represents

1 cancer victims and others who have been exposed
2 to toxics -- toxic substances. Bill.

3 **MR. BRADY:** Good morning, ladies and gentlemen.
4 I spoke to you briefly last time for about -- a
5 little less than 10 minutes. With your
6 indulgence, I'm going to take just a little bit
7 longer today. And again, remember I'm a
8 lawyer, and when a lawyer says a little bit
9 longer, it sometimes might be a lot longer than
10 most of you might anticipate.

11 I -- I represent Charlie Wolfe, who you heard
12 from yesterday. Charlie, you may recall, was
13 the individual in the blue-green shirt who had
14 the very severe scar on his head, who -- after
15 fighting for four and a half years -- finally
16 had his claim approved this past March. We
17 started representing Charlie in October and
18 refiled petition under Part E and were very
19 fortunately successful in getting him benefits
20 under Part E of the EEOICPA.

21 We also learned yesterday afternoon that based
22 upon a second cancer that had surfaced in
23 Charlie, a bone -- a bone marrow cancer known
24 as myelodysplasia, we had refiled for Part B
25 benefits because he had been denied under Part

1 B several times. And we felt that with the new
2 cancer and with both -- not only Charlie's
3 doctor but the district medical consultant in
4 Cleveland stating that he thought that perhaps
5 the myelodysplasia qualified as a new primary
6 cancer, that we might be able to obtain Part B
7 benefits as well for Charlie. And we found out
8 yesterday afternoon that he was denied Part B
9 benefits based upon the fact that the dose
10 reconstruction was still less than 50 percent.
11 So I really don't know how to explain that to a
12 client, to tell them that well, yeah, you got
13 your Part E benefits and you're going to get
14 your -- fortunately he's going to get his
15 medical expenses paid under Part E for his
16 glioblastoma multiform brain cancer, as well as
17 his myelodysplasia. But for some reason NIOSH
18 still doesn't believe that he's -- he's had a
19 sufficient radiation dosage to justify Part B
20 benefits, so it's very, very troubling and
21 perplexing.

22 I am here to talk a little bit more about
23 Charlie's case again by way of example. I am
24 not going to repeat myself, but I did want to
25 share some of the evidence that we presented at

1 his hearing, which I think may be useful in
2 your deliberations.

3 We have a plutonium working group report that
4 was done by the Department of Energy in
5 November of 1994 and the report is on
6 environmental safety and health vulnerabilities
7 associated with the Department's plutonium
8 storage program. And there are five pages that
9 are devoted to Rocky Flats. I don't know if
10 this is part of the record. I haven't been
11 informed that it is and I -- I don't believe
12 that it is, so I'd like to take the opportunity
13 just to summarize some portions of this report
14 for you, which I think provide some very, very
15 interesting facts that you may not heretofore
16 have been privilege to.

17 This report was involved -- involved, excuse
18 me, an 18-member working group assessment team
19 and a 31-member site assessment team, and they
20 conducted a Rocky Flats vulnerability
21 assessment. This is an initial stakeholder
22 involvement plan developed by the Department of
23 Energy for Rocky Flats. A focus group of
24 interested stakeholders was formed to
25 participate in the assessment. The group also

1 included the Colorado Department of Health, the
2 Environmental Protection Agency, an emergency
3 planning committee and local public interest
4 organizations.

5 The findings are, as you might imagine, rather
6 -- rather stark. The report says, in part, in
7 December, 1989 the Secretary of Energy
8 curtailed operations at Rocky Flats.

9 Subsequently Rocky Flats plutonium operations
10 were shut down. A large inventory of various
11 forms of plutonium was placed into
12 indeterminate storage. There were no formal
13 plans for a safe and orderly shutdown of
14 operations. Storage was not expected to be
15 long-term.

16 Reactive and corrosive plutonium materials and
17 solutions are causing deterioration of
18 packaging and containers, generating
19 combustible gases and pressurizing packages.
20 Unless corrective action is taken, these
21 packages will eventually breach and could cause
22 exposure of workers and the public, and
23 environmental contamination.

24 Rocky Flats has many of the most significant
25 plutonium vulnerabilities in the entire DOE

1 complex. The exact magnitude of the problem is
2 uncertain because of missed or incomplete
3 inspections, records, and the difficult of
4 ascertaining the status of degrading materials
5 and packaging. In decreasing order of
6 priority, the most significant vulnerabilities
7 of Rocky Flats are -- and then there's a
8 listing of buildings that goes on for about
9 three pages, describing the number of plastic
10 containers that are cracking and leaking,
11 problems with the ventilation system, leaking
12 gloveboxes, packages of plutonium peroxide cake
13 which are chemically hazardous and unstable,
14 55-gallon drums that are leaking, and a number
15 of other instances which you've heard over the
16 last few days from many of the people who have
17 -- who have testified here.

18 Of particular interest I think are some of the
19 statistics about the vast numbers of storage
20 containers, over 8,000 drums containing waste
21 and plutonium scrap residues are stored
22 throughout all buildings. These materials
23 increase general area radiation levels and the
24 amount of radioactive material available for
25 release in the event of a fire or an explosion.

1 The drums add to the combustible loading in all
2 facilities.

3 The ventilation ducts, gloveboxes and
4 supporting equipment have unknown quantities of
5 plutonium holdup, which routinely adds to
6 building radiation levels and worker exposures.
7 Plutonium holdup is released to the environment
8 during accidents.

9 Because of the storage of large numbers of
10 packages in vaults, some vault radiation levels
11 current exceed 100 millirems per hour. This is
12 due to gamma radiation caused by americium
13 buildup and to neutron radiation from mixtures
14 of plutonium and lighter elements.

15 The report goes on to talk about solution
16 vulnerabilities within the piping and equipment
17 in a number of the buildings, and the fact that
18 these workers were routinely exposed.

19 And then the report says records show that the
20 workers have frequently become contaminated in
21 Rocky Flats facilities. Out of service
22 gloveboxes, tanks and piping systems in nearly
23 all buildings contain internal radioactive
24 contamination. Buildings 371, 707, 771 and 776
25 have rooms with contamination in work areas on

1 the external surfaces of gloveboxes, outside
2 the gloveboxes. In some areas an application
3 of paint or elastomer compound has been used to
4 cover up the contamination. However, these
5 substances peel or chip from wear or aging, re-
6 exposing the contaminants.

7 It's an extraordinary document and -- and one
8 that if you haven't -- haven't seen, I think
9 deserves -- deserves some study.

10 I'm also -- also wanted to point out a couple
11 of reports that I've reviewed and which we
12 brought to the attention of the hearing officer
13 during Charlie's hearing, some reports that
14 were put together by Dr. Jim Ruttenber of the
15 University of Colorado Health Sciences Center.
16 You might remember Charlie referenced Dr.
17 Ruttenber yesterday, and his reports
18 specifically deal with Rocky Flats and I think
19 are -- are telling.

20 One is a very recent report, submitted in draft
21 form, entitled "Risk Estimates of Brain Tumors
22 and Ionizing Radiation", and Dr. Ruttenber --
23 the conclusion of the report -- I won't go
24 through the detail in the report, but the
25 conclusion says there is strong evidence for a

1 causal relationship between exposure to
2 ionizing radiation and brain tumors. There is
3 also strong evidence for an elevated risk for
4 brain tumors among nuclear workers,
5 particularly those involved in the processing
6 of plutonium. There is evidence that the risk
7 is likely to be associated with external
8 penetrating radiation. However, the high
9 estimates of risk per unit dose for workers in
10 plutonium facilities needs much further
11 exploration.

12 The doctor explained, for example, that some of
13 the bioassays that were done on workers were
14 inadequate to show the extent of the plutonium
15 contamination that had been either inhaled or
16 ingested by some of the workers. The
17 urinalysis, the lung counts, often were not
18 reliable.

19 He states in his report none of the studies of
20 brain tumors among plutonium workers have
21 explored the extent to which neutron exposures
22 have been accounted for in estimates of total -
23 - total penetrating radiation dose, or whether
24 neutron exposure might have a unique biological
25 effect on the tissues of the brain. The

1 extremely high risk per unit dose estimates
2 from Los Alamos and Sellafield could be due to
3 a large but unascertained neutron dose
4 component from the fluorination of plutonium
5 produced by alpha reactions with fluorene, or
6 to unique biological effects of neutrons in the
7 brain, or both.

8 Given the possibility that the current IREP
9 uncertainty distributions for the risk per unit
10 dose for cancers of the central nervous system
11 are underestimates of the true risk, it makes
12 good sense to explore dose response relations
13 for brain tumors among nuclear workers, and
14 among plutonium workers in particular. Data
15 from the Rocky Flats cohort promises to be
16 particularly useful as data for gamma radiation
17 doses are available for all cohort members, and
18 data for job titles and building locations
19 which can be used to identify the workers with
20 potential neutron exposure, as well as some
21 estimates for neutron doses, are available for
22 most of the current -- most of the -- excuse
23 me, production worker cohort.

24 Given the likelihood that current IREP assigned
25 share estimates are underestimated -- let me

1 read that again. Given the likelihood that
2 current IREP assigned share estimates are
3 underestimated for nuclear workers with brain
4 tumors, it is prudent to replace the current
5 IREP distribution with one that is more
6 favorable to claimants. It is also fair to
7 reopen previously dismissed cases of brain
8 tumors for claimants under the Energy Employees
9 Occupational Illness Compensation Program Act.
10 The issue of brain tumor risk for nuclear
11 workers underscores the need for continued --
12 continued epidem-- epidemiolo-- epidemiological
13 research in cohorts of nuclear workers
14 worldwide. Data from this research is critical
15 for the fair compensation for past U.S.
16 workers, and for the protection of nuclear
17 workers now and in the future.
18 Dr. Ruttenber has also issued a second report
19 entitled "The Mortality of Plutonium Workers at
20 the Rocky Flats Nuclear Weapons Plant" -- we
21 also submitted this at Charlie's Part E
22 hearing. And I'll just very briefly read a
23 couple of quick sentences from the abstract of
24 the report.
25 Studies of plutonium workers have identified

1 elevated risks for cancers at a number of
2 sites, including lung, liver and bone, and
3 other connective tissue. Previous studies of
4 U.S. plutonium workers have suggested increased
5 brain cancer mortality.

6 Methods. We calculited -- we calculated
7 standardized mortality ratios for 16,258 Rocky
8 Flats workers who produced plutonium components
9 from 1952 to 1989, and a subcohort of 8,672
10 plutonium-exposed production workers.

11 We're not talking about 30 and 22 here, or 32
12 and 20.

13 The results. The standardized mortality ratios
14 for malignancy of the brain were elevated and
15 of statistical significance.

16 And then he goes on to conclude the elevated
17 standardized mortality ratios for brain tumors
18 extend previous findings for this cohort and
19 indicate the need for a more detailed analysis
20 of possible causes of brain cancer.

21 We also submitted some reports from S. Cohen &
22 Associates, and they seem to be fairly critical
23 of the dose reconstruction process at work.

24 Specifically a letter of January 17th, 2005 to
25 Mr. David Staudt at the Center for Disease

1 Control and Prevention from John Mauro of SC&A,
2 and a couple of very interesting issues were
3 raised about the -- the dose reconstruction
4 process. On page 2 of this letter there is a
5 very brief paragraph that I'd like to read,
6 which states: Objective one, determine the
7 degree to which procedures support a process
8 that is expeditious and timely for dose
9 reconstruction. Answer: A well-written
10 procedure presents all required data in a
11 logical, concise, unambiguous and prescriptive
12 manner. Frequently SC&A found that poorly
13 structured procedures sequestered the key
14 information or guidance in the final section.
15 This requires the dose reconstructor to read
16 through voluminous and frequently irrelevant
17 background information. An improved format
18 would provide the essential guidance and data
19 for dose reconstruction at the front of the
20 procedure. Relevant background or technical
21 support data would be more effective as addenda
22 that the dose reconstructor could consult if
23 needed.

24 Now this ties in with the next section that I
25 wanted to read with you, which was objective

1 six on page 4.

2 Evaluate procedures for its ability to

3 adequately account for the uncertainty of dose

4 estimates. The input to the Interactive

5 RadioEpidemiological Program of annual external

6 doses as measured by weekly, monthly or

7 quarterly assigned film or thermoluminescent

8 dosimeters not only required an estimate of

9 uncertainty for each individual dosimeter, but

10 also considers the collective uncertainty of

11 the annual dose that may correspond to as many

12 as 52 dosimeters for a weekly exchange

13 frequency. While all external dosimetry

14 procedures reference the need to include

15 uncertainty, only one guidance document

16 attempts to explain how this is to be done.

17 However, guidance in one document is inadequate

18 and scientifically questionable as described

19 below in the review of an implementation guide

20 OCAS-IG-0001. The treatment of uncertainty

21 pertaining to internal exposures as assessed by

22 bioassay techniques is equally deficient.

23 Again let me read that. The treatment of

24 uncertainty pertaining to internal exposures as

25 assessed by bioassay techniques is equally

1 deficient.

2 Objective 7, assess the scientific and

3 technical quality of methods and guidance

4 contained in procedures to ensure that they

5 reflect the proper balance between current

6 consensus, scientific methods and dose

7 reconstruction efficiency. The seventh -- this

8 is the answer now. The seventh and final

9 review objective not only assessed the

10 scientific credibility of procedural methods,

11 but also the EEOICPA directive that the methods

12 and procedures must achieve a balance between

13 technical precision and dose reconstruction

14 efficiency. SC&A's review of procedures

15 identified a number of technical inaccuracies

16 and errors. Many prompt a dose reconstructor

17 to pursue levels of detail not reasonably

18 obtainable. On a more subjective level, SC&A

19 believes that currently select portions of the

20 dose reconstruction process demand a high

21 degree of sophistication and detail that goes

22 well beyond the regulatory requirement of a

23 reasonable dose estimate and comes at the

24 expense of reducing process inefficiency.

25 Now having read that -- having understood Dr.

1 Ruttenber's concerns and having talked about
2 what happened at Rocky Flats, I think it fairly
3 quickly becomes obvious that there is a great
4 deal of scientific uncertainty that surrounds
5 this process of dose reconstruction.
6 There are other letters that we introduced,
7 talking about reports, another report for Rocky
8 Flats, a report of epidemiological analysis
9 performed for Rocky Flats production workers
10 employed between '52 and 1989 dated March 3rd,
11 2003, again performed by Dr. Ruttenber at the
12 University of Colorado Health Sciences Center.
13 And the report states the significant increase
14 noted for unspecified nervous system neoplasms
15 as well as the increase for brain and other
16 central nervous system cancers, deserves
17 further exploration since dosimetry models
18 indicate that plutonium exposure deliver
19 extremely small doses to the brain. Other
20 agents such as gamma, photons, neutrons and
21 chemical carcinogens should be considered as
22 possible causes, both singly and in
23 combination.
24 There is also another report in the *Federal*
25 *Register* entitled "Guidelines for Determining

1 the Probability of Causation and Methods for
2 Radiation Dose Reconstruction" and there is a
3 section on rule-making and it states in the
4 future NIOSH may make additional changes in
5 IREP to address the differences in radiation-
6 related cancer risk between Japanese atomic
7 bomb survivors and employees involved in
8 nuclear weapons productions. Some research has
9 shown substantial differences in the risks for
10 certain cancers such as brain cancer and
11 multiple myeloma. The radiation-related risk
12 of these cancers is significantly elevated
13 among employees involved in nuclear weapons
14 production, whereas it is not among the
15 Japanese study population.
16 Again, criticism of the IREP technique being
17 used in dose reconstruction.
18 I also wanted to reference very briefly a very
19 short portion of testimony that was taken last
20 April at your hearing out in southeast Denver
21 at the Four Points Sheraton -- I was not
22 present for that but I do have a copy of the
23 transcript -- talking about the dose
24 reconstruction process. And this is a very
25 brief portion of the testimony from Dr. Ulsh,

1 and he says on page 53, we've got a large body
2 of dosimetry records here, and this is the
3 primary information that we use for dose
4 reconstruction. He then goes on, on page 60,
5 to talk about the basis for the petition and he
6 says the next basis in the petition was that
7 there are instances when it is not possible to
8 link intakes to specific incidents. And the
9 concern here -- if I can just present a
10 hypothetical situation to you -- a worker's
11 going along on a routine biomonitor -- bioassay
12 program, let's say for plutonium. He gets a
13 plutonium bioassay; it's negative. He gets
14 another one a few months later; it's negative.
15 He gets another one a few months later,
16 positive. Well, then the question is where did
17 that intake come from? Without having special
18 bioassay results, if an incident is recognized
19 at the time that it happens -- for instance, a
20 glovebox fire -- what will typically occur is
21 that special bioassay would be required. But
22 in the absence of that -- I mean there are
23 exposure scenarios where the worker wouldn't
24 even know that he had been exposed. That has
25 certainty -- that certainly occurred at Rocky

1 Flats and other places throughout the DOE
2 complex. And so in some situations we agree
3 with the petitioner that it's not always
4 possible to link intakes that you observe in
5 bioassay results back to specific incidents.
6 It's helpful when we can do it, that is true.
7 Now he goes on to explain that -- a method for
8 taking that into account, which Dr. Ulsh states
9 is approved by the International Commission on
10 Radiological Protection. I wonder how long
11 it's going to be before those standards change.
12 The problem that we've got, ladies and
13 gentlemen, is this issue of scientific
14 uncertainty. And I am deeply distressed by --
15 by what I see as an air of benevolent arrogance
16 in the scientific assessment process. I -- I
17 don't think it's intentional. I think it's
18 perhaps out of an unwillingness to admit that
19 we simply don't know that which we think we
20 should know. Examples abound throughout this
21 process -- the dose reconstruction issues we've
22 talked about, the issue of high-fired oxides,
23 the so-called super S compounds, the
24 reliability of measurements purporting to
25 assess exposures and doses, the missing

1 records, the inaccurate records, the incomplete
2 records.

3 As a law professor I'm not usually concerned
4 about what my students don't know, because most
5 of them will readily admit their ignorance.
6 That's why they attend class. They read their
7 assignments. They exhaustively research that
8 which they don't know, until they are as
9 certain as they can be -- as certain as the law
10 will allow them to discern what they believe is
11 the truth. Hopefully then justice will follow.
12 But I'm deeply concerned about what my students
13 think they know that just ain't so. In that
14 case their analysis often turns out to be
15 inaccurate, their advice unwise, and
16 unfortunately clients will rely to their
17 detriment on that advice. That approach I
18 think forms the basis for this dangerous form
19 of benevolent arrogance.

20 Now there's another answer, and it's an
21 approach that stands in opposition to what I
22 term as the benevolent arrogant approach, when
23 we are faced with scientific uncertainty. And
24 that approach is known in the law as the
25 precautionary principle -- many of you may be

1 familiar with that term. The precautionary
2 principle espouses a goal of preventing rather
3 than merely reacting to harm. The principle
4 incorporates issues of risk, of scientific
5 uncertainty and cost that we're all familiar
6 with. The application of the precautionary
7 principle is triggered by the identification of
8 a potentially serious or irreversible harm that
9 could be averted by regulation. And of course
10 here we have dying workers who have not
11 received medical benefits in many cases. I
12 can't think of a more serious or irreversible
13 harm than those faced by the people that you've
14 -- you've heard from.

15 The central feature of the precautionary
16 principle is to encourage regulatory approval
17 before the causal relationship between the
18 activity and the harm can be fully proven. We
19 see it with mad cow disease. This is a
20 principle that has been embraced by the United
21 States government in numerous treaties, the Rio
22 treaty of 1994 first adopted this principle,
23 and it is embo-- firmly embedded in many of our
24 regulatory structures and especially the
25 environmental area. The focus on serious and

1 irreversible harm is a willingness to regulate
2 under conditions of uncertainty because of the
3 seriousness of the risk, and the mandate to
4 take action in advance of harm occurring are
5 existing elements of this Special Exposure
6 Cohort process. The Special Exposure Cohort
7 process really is a form of law which embodies
8 the precautionary principle.

9 Now assume for a moment that you are one of
10 these unfortunate workers diagnosed with
11 cancer. Can you honestly state, members of the
12 Board, that knowing what you know now of the
13 legitimate differences in studied expert
14 opinions and the quality of the evidence before
15 you, as well as the assumptions that are being
16 based upon the lack of appropriate, competent,
17 available evidence, that you'd be satisfied
18 with the fairness of the dose reconstruction
19 process at Rocky Flats if you had one of the
20 cancers that these people who've testified
21 before you have? Have you delegated the
22 determination of whether or not dose
23 reconstruction can be done with a reasonable
24 degree of scientific certainty to scientists
25 who just really aren't completely sure of the

1 process? Can you go home tonight confident
2 that your decision to deny SEC status to
3 workers stricken with cancer at Rocky Flats,
4 treated each worker just like you'd want to be
5 treated? If you were sitting out there in
6 their place, based upon the doubts that you
7 have about what you have seen, the evidence and
8 the assumptions, would you want someone with
9 your frame of mind making that decision for
10 you?

11 We have a process in criminal law -- it's
12 actually a Colorado jury instruction -- called
13 reasonable doubt. It's a short instruction,
14 and it says reasonable doubt means a doubt
15 based upon reason and common sense which arises
16 from a fair and rational consideration of all
17 the evidence, or the lack of competent
18 evidence, in the case. It is a doubt which is
19 not a vague, speculative or imaginary doubt,
20 but such a doubt as would cause reasonable
21 people to hesitate to act in matters of
22 importance to themselves.

23 Can you honestly state that you are giving each
24 one of these workers the benefit of reasonable
25 doubt? I think if you can't, you're not doing

1 your job.

2 Ultimately your determination and that of NIOSH
3 and the Secretary of Human Health and Services
4 (sic) will have to be able to withstand
5 judicial scrutiny. Dr. Ulsh's opinions and
6 assumptions, and those of others at NIOSH, will
7 be microscopically dissected under the glare of
8 cross-examination to see if they can pass the
9 test of reliable scientific evidence, which
10 many of you seem eager to adopt today.

11 Judicial review of final agency rule-making
12 unfortunately is several years away, and you've
13 already exceeded your allotted time for making
14 a decision for far too long. It's tragic that
15 many of the workers here won't ever know the
16 final outcome. We implore you for the last
17 time, please adopt the precautionary approach
18 and pass the petition. Thank you.

19 **MR. DEMAIORI:** Next I'm going to introduce an
20 old friend and colleague, somebody who brought
21 me along in the union movement for several
22 years. That's this individual had worked very
23 hard in conjunction with several members of the
24 old oil, chemical and atomic workers union who
25 -- who merged into PACE and then finally the

1 steel workers. This is an individual that
2 testified before Congress on the effects of
3 low-level ionizing radiations, that's -- and
4 worked very, very hard to get compensation for
5 the beryllium workers and the plutonium workers
6 at Rocky Flats. This individual is invested
7 30-plus years of experience with his time, his
8 energy and his very life. That's -- the next
9 person I'm going to introduce is the former
10 president of Local 8031, Jerry Harden. Jerry.
11 **MR. HARDEN:** I don't like it when they clap
12 before I give my presentation. Good morning.
13 My name is Jerry Harden, as you've already
14 heard. And I'm going to go through kind of a
15 laundry list today because this appears to be
16 my last attempt to convince you people the
17 error of some of your ways. I have appeared --
18 this is the third time -- before most of you,
19 and I -- I want to go through my laundry list,
20 and if you have problems, I challenge you --
21 take me on, make me substantiate what I'm going
22 to tell you 'cause if you don't, you're missing
23 a chance. In fact, that's one element that's
24 totally been missing from this whole process is
25 a form of active dialogue where if there are

1 questions or challenges that they can be raised
2 on the scene rather than having both groups
3 sequestered where we do a hearsay, he said/she
4 said thing, which we've all been victimized by.
5 And I -- I'm appalled by this process, so
6 you've got to know that. This is -- this is
7 going to be a rock-throwing contest with me and
8 I've got a big pile.
9 So going on with this, I was employed at Rocky
10 Flats for 37 years. My man [identifying
11 information redacted]. I carry a lifetime
12 exposure of 36 rem. I was discovered as having
13 a high lung count in 1988. Now you've heard
14 testimony the last few days how this
15 reconstruction has occurred and they've used
16 bioassay data. Keep in mind, 1988 I was
17 already an employee for over 20 years, and then
18 all of a sudden I showed up at the two-
19 dimensional lung counter and they said you've
20 got high numbers. So I was very disturbed
21 about it. In fact, I am today. You may see
22 elements of that that still remain. And you
23 know, I -- I think it shows the -- the
24 fallibility of this so-called pseudo-science
25 that we've been victimized by -- get out of the

1 way.

2 The other thing that you need to know is in my
3 lengthy career there I was a radiation control
4 technician. I also served three terms as the
5 president of United Steel Workers of America,
6 Local 8031, representing the production and
7 maintenance workers at the Rocky Flats nuclear
8 weapons plant uniquely.

9 When I hired early in 1967, the company didn't
10 give us baseline analysis on radiation that we
11 might have brought to the plant. That didn't
12 occur till much later. In fact, it started to
13 be more of a common practice after the big
14 fire, the cataclysm of 1969.

15 The fire, to me, was a -- was an amazing event
16 and we'll talk about that through my ranting
17 and raving here this morning.

18 When I was hired I was issued a film badge
19 which used photographic emulsion tablets or
20 plates. And as you've heard in previous
21 testimony, they went through thousands of these
22 with a high quality control program in effect.
23 The truth of the matter is, they had one woman,
24 [name redacted]*, that counted physically the
25 neutron tracks on the film emulsion. Many of

1 those emulsions were in question.
2 Neutrons, by the way, have been talked about
3 generally but not specifically. We haven't
4 talked about fast neutrons or slow neutrons.
5 And I would use my experience in the 71
6 building, 771, in the 114 fluorinator -- and by
7 the way, we had no radiation shielding of any
8 consequence prior to about 1968. The neutron
9 shielding was effected with a labyrinth type
10 thing, or water walls later in some of the
11 other areas. In the fluorinator in 114 of 771
12 building we -- we developed or produced a
13 product called pink cake, which was one of the
14 earlier steps in the reduction of plutonium as
15 metal. The pink cake was screaming, according
16 to our field survey instruments. In fact, in
17 the bullpen or the labyrinth, I couldn't use an
18 alpha field survey instrument. There was so
19 much activity due to whatever energy that was,
20 it would avalanche a normal Ludlum air
21 proportional instrument. We had to bring
22 whatever those products were outside in an area
23 where we could isolate them -- and where we
24 could try to protect ourselves, too, by the
25 way, 'cause as many of you know, neutrons are

1 one of the hardest things imaginable to try to
2 shield production workers from.

3 And so we hobbled along for many years, you
4 know, with this pretense that we were being
5 monitored for our radiation exposure. But I
6 can assure you, if you were ever around pink
7 cake with any of our instruments that we had,
8 you'd -- you'd either think that there was a
9 malfunction or some phenomenon that occurred,
10 you know, out of the --the cosmos. And this
11 was a normal environment.

12 Keep in mind that the contractors received
13 bonuses for kgs of plutonium out the door, for
14 units down the road -- to Burlington, Iowa or
15 Pantex at Amarillo that took many of our
16 components.

17 Heard stories about atomic bombs and weapons.
18 That isn't totally accurate in my working man's
19 knowledge. We made the spark plugs. It takes
20 an atomic bomb to make a thermonuclear bomb,
21 I've been told. And in the course of that a
22 lot of the eggheads had a lot of different
23 designs. And every time there'd be a new
24 graduating class at -- at University of
25 California or wherever they were hired, we'd

1 get some new designs. And amazingly, a lot of
2 these things looked like deja vu all over again
3 to me. But these things like the enhanced
4 neutron thing that you heard about, well, every
5 weapon that we ever made -- or component,
6 kicked off neutrons.
7 Some of these unique ones for the Russian tanks
8 were enhanced radiation devices where they were
9 to be used as a tactical weapon, supposedly,
10 due to the numerical superiority of the Russian
11 tank force. That project was a hit and miss.
12 Boy, they spent millions of dollars on
13 equipment to try to shield the workers, and in
14 most cases that equipment never performed as
15 intended.
16 Now in the -- in the sequence here, coming down
17 the line, a lot of these -- these situations
18 were crimes of omission and convenience. Keep
19 in mind, the contractor got bonuses -- kgs to
20 the -- to the -- off the floor and units, that
21 was our completed product, down the road.
22 We also received a lot of site returns. Those
23 were -- were products that were viewed as being
24 obsolete, or in some cases where they
25 disintegrated to the point where apparently

1 they wouldn't perform as intended.

2 The reason I'm telling all of you this is

3 because some of these things seem to have been

4 conveniently omitted in some of the -- the

5 presentations that I've been a part of. The

6 other thing that's been omitted is some types

7 of radiation. We haven't heard about radon.

8 We had huge concentrations of radon in the

9 subterranean concrete buildings -- 991 tunnel

10 was a real beauty; 81 building, another one;

11 371, the new one, totally -- totally ignored.

12 And the contractor conveniently disregarded

13 radon exposure. And I can assure you that

14 radon is a very serious thing. As many of you

15 intellects know, the prime energy of the

16 emission off of radon is very close to the

17 prime emission off of plutonium.

18 There was a doctor -- maybe he's still alive, I

19 haven't talked to him or read about him in many

20 years -- that did work for the uranium miners

21 in Grand Junction. Some of those men were

22 dying like flies due to radon exposure, diesel

23 fuel and diesel emissions, cigarette smoking,

24 you name it. His name was Gene Sakamano*, and

25 the reason I'm going to throw these names out

1 as we go is to hopefully give you some
2 credibility. Even though I'm an ignorant fool,
3 I want you to know that I'm paraphrasing some
4 of these other people's findings, and hopefully
5 that'll flesh out this thing as -- as we go
6 along.

7 The other thing that has been totally ignored
8 in my audience here is beta exposures. 883
9 building, we were a part of what they called
10 the LIP* project, and this was an attempt by
11 the government to remedy a boondoggle on the M-
12 1 military tank. And we had over 100 tons of
13 depleted uranium in residence. Now in the
14 course of this production boondoggle, this
15 uranium was decaying and creating oxide --
16 dirty, brown dust all over everything. In
17 fact, it infiltrated our dosimetry badges where
18 they actually had to have the workers put their
19 badges in a sack in order to keep from cross-
20 contaminating the -- the radiation detection
21 process. I don't know if you're aware of it,
22 but you need to be. Beta emissions have been
23 ignored here -- again, in my -- my visits with
24 you.

25 The other thing that has been totally ignored

1 through this process are tritium exposures --
2 haven't heard a word about it. Maybe you've
3 talked about it in other sessions, but I
4 haven't heard it here. The government spent
5 over \$100 million on property east of Indiana
6 adjacent to the plant on land remediation
7 processes due to tritium and some of our other
8 effluents -- errant effluents. They even
9 bought the rights of Great Western Reservoir,
10 that was a water supply for the city of
11 Broomfield until some sharpie said hey, you got
12 tritium contamination in the -- in the -- in
13 that reservoir. You need to know that. We had
14 workers that were at the epicenter of these
15 tritium projects. The contractor finally said
16 oh, it was a problem of contaminated site
17 returns and we didn't have a system to screen
18 tritium, and we certainly didn't have a system
19 in place to protect workers from exposures.
20 That's been totally ignored through this
21 process.

22 Now the health effects I realize are in hot
23 debate on all of these things. And the reason
24 that I'm telling you this is because, again,
25 these -- these are serious omissions, in my

1 mind. We were not a -- a head shed. We were
2 not dealing with onesie-twosie types of things.
3 In fact, at one time Madame O'Leary, the
4 Secretary of Energy, said we had 16 tons of
5 plutonium in residence at Rocky Flats, and a
6 fair percentage of that didn't occur on any
7 inventory or any known way of accountability.
8 And that was due to the so-called heritage
9 thing or drag-along where the record-keeping
10 was so deficient that no one could tell you for
11 sure where the money was buried.
12 And so the point I'm trying to make here is a -
13 - is a sequence of incompetence, deception,
14 distortion, omission, and as we go along here
15 in my -- in my rambling I want to tell you that
16 I'm very concerned about the well-being of the
17 people. I would use my own example. As I've
18 already confessed to you, I have a lung burden
19 and body burden and some other problems that
20 you've already witnessed mentally. And the
21 reason that I bring this to your attention is
22 because the exposures. And originally we had
23 three crystal arrays as detectors, one of them
24 positioned over a normal human's liver area and
25 two over each lung. And as you know, the right

1 side is usually bigger than the left side kind
2 of thing and it goes on and on and on.
3 So, in the course of the early use of this
4 array, one of the intellects in the castle
5 decided that the data that they were generating
6 off this liver crystal array wasn't to their
7 liking, so they yanked the liver crystals.
8 Again, keep in mind what I've already told you,
9 that I was a worker for over 20 years before
10 they found a high level of count in my lungs.
11 The other thing ironic is this presentation
12 about bioassay. None of that ever showed on my
13 urine samples. Now you're familiar with a
14 phenomenon called Langham's curve, where
15 usually after an exposure you have a high rate
16 of excretion right after that event. Never
17 occurred on any of my records. All of a sudden
18 I showed up on that fine day in 1988 and I rung
19 the bell. This is due to this -- this
20 technique and this equipment that has already
21 been highly praised through this -- this
22 process that I've witnessed. I resent it.
23 The other thing that -- that thing is bothering
24 me. The other thing that I want you to know,
25 and I alluded to it briefly before -- I'm

1 deviating from my notes and it gets worse -- is
2 the transuranic -- Transuranium Registry
3 donors. The government has spent hundreds of
4 millions of dollars soliciting workers to make
5 these donations at their death so these
6 scientists can analyze the -- the data. And
7 Dr. Roessler, you got to be familiar with that
8 because every month the Health Physics Society
9 printed a journal and it was full of papers put
10 up for peer review, and quite a few of them
11 involved Rocky Flats autopsy donor data. And
12 you can look through these indexes -- names
13 like [name redacted]*, couple of others. Any
14 time you see those, it's probably about Rocky
15 Flats workers. And the list of papers is
16 extensive.

17 The reason that I'm bringing that to your
18 attention today is the government has spent all
19 this time and effort to harvest these organs
20 and con these workers into donating body parts,
21 and it's been totally ignored in this format in
22 my attendance here. I don't understand that.
23 I think that the -- the information gleaned
24 from these body parts darned well ought to
25 substantiate the -- the abilities of our -- of

1 our radiation protection program. Why hasn't
2 it been a component of this -- this process?
3 The other thing, as you may already be aware
4 of, is we had three workers that donated their
5 whole bodies. And I don't know what the
6 outcome or the data generated from any of that
7 has -- has developed. I don't know. But you
8 need to know that this isn't a thing that just
9 happened last week. It's been going on for
10 years.

11 The other thing that you need to know is our
12 workers have been guinea pigs. I was a guinea
13 pig. Now I've dropped part of that and I'm
14 just a pig, according to some of them, but what
15 -- but a cultured one. And the reason that I
16 bring that up is because our workers, when they
17 had inhalations or puncture wounds, were
18 subjected to several snake oil salesmen
19 peddling DTPA, saying hey, take this magic
20 drug; all the bad stuff will be gone from your
21 life.

22 Well, the fact of the matter is, it's always
23 been an experimental drug, in my knowledge.

24 [Name Redacted] down at Oak Ridge was another
25 snake oil salesman peddling that. But the same

1 guy that sold that to our workers was the guy
2 that harvested the organs for the -- for the
3 Transuranic Registry.

4 Now I find all these things, again, as being
5 crimes of convenience. I don't have a PhD to
6 present you today, and you ought to be grateful
7 for that 'cause if I -- if I would have gone to
8 school it would have been terrible, folks, but
9 the reason that I bring that to your attention
10 is not to necessarily entertain you, but to
11 enter-- to inform you that I'm not making any
12 pretense of being something that I'm not.

13 The other thing I would tell you, early on in
14 my employment at Rocky Flats I was told
15 routinely by management about this phenomenon
16 known as hormesis. Well, a little bit of that
17 isn't going to hurt you at all. Now that, to
18 me, is a direct expansion on Nietzsche's
19 comment that what doesn't kill you will only
20 make you stronger, and I would tell you that I
21 think that's a very poor operating philosophy,
22 but it's one that we lived with for all my
23 years at Rocky Flats.

24 The other thing is synergy, and some of you
25 folks may already be well aware of that and may

1 be experts on the subject. But most of the
2 things that we had at Rocky Flats were what I'd
3 call mixed stream or mixed waste. It was very
4 rare that we had a unique or a virgin type
5 product, five nines pure. It just didn't exist
6 except in the labs. Most everything was mixed
7 with something else.

8 And in case you haven't figured it out, they
9 didn't make atomic weapons out of good things.
10 And this phenomenon is merely where you take
11 one bad thing and another bad thing and you
12 make something even worse. And that happened
13 with a lot of the products that our people were
14 exposed to.

15 We had limited resources for detection, and
16 very limited ways to protect the people. As
17 I've already tried to illustrate feebly to you,
18 neutrons were very difficult to work with, and
19 still are. We had virtually no protection on
20 the shop floor other than distance and time.
21 They tried the water walls and it caused a
22 reflection where these particles -- or these --
23 these energy things would come in and they
24 would bounce all around, so they made a problem
25 that was bad much worse by this -- this

1 experiment. So we wound up where we stripped
2 out most of our so-called neutron shielding and
3 the workers worked with it naked, basically,
4 using distance and time and our feeble
5 instruma-- instrumentation and our dosimetry
6 techniques.

7 The reason that all of that is important to you
8 is because I don't view this committee or this
9 -- this legislation as just being a one or two-
10 item thing. It was intended to be an omnibus
11 thing where you covered the beryllium victims,
12 you covered the radiation victims, and then of
13 course Part E speaks, you know, to the solvents
14 and some of the other problems.

15 Which, by the way, I heard someone talk about
16 some of the solvents the other day. We were
17 one of the biggest users of carbon
18 tetrachloride in the U.S. We had over 20,000
19 gallons in tanks in residence at Rocky Flats in
20 the height of production. Now any of you that
21 have ever worked around that know that that's
22 very difficult to contain. It's probably about
23 as difficult as it is for tritium. You can't
24 keep tritium in anything for very long. And so
25 we had this material and it was in our

1 production stream.

2 Some of the eggheads said hey, we need to have
3 that carbon tetrachloride because it doesn't
4 seem to affect the properties of our metals or
5 our products. Not much thought was given to
6 what it was doing to the workers. I've seen
7 carbon tet where it defied gravity, where it
8 defied vacuum on dry boxes, and it would
9 migrate through most all of our packaging.
10 Heard earlier in a presentation about
11 radiolytic decay. Well, that came on us from
12 the Ahern committee and a couple of those
13 others -- again, intellects -- talking about
14 all the errors of our ways. Packaging has
15 always been a problem. And again, keep in mind
16 that we didn't deal with pure products usually.
17 Like if we had plutonium residue, we usually
18 had nitric acid or something similar that was a
19 component of that, as well. So most of our
20 packaging would disintegrate and the workers
21 would be around where there wasn't any air
22 sampling.

23 And as I've already feebly tried to point out
24 to you, we didn't have real good monitoring for
25 inhalations, other than bioassay. Again,

1 remember what I told you, my -- my body burden
2 didn't show up on a urinalysis, didn't show up
3 on a lung counter for 20-some years. I believe
4 that my lung burden was this so-called S
5 material -- which I believe is S, but not the
6 connotation that you believe -- and I believe
7 that we had high-fired oxide all along.
8 And that brings up another one of my items on
9 my shopping list. I was in radiation safety,
10 as I've already confessed to you painfully. We
11 used to have a stupid system -- stupid -- where
12 we would divide the plant between soluble and
13 non-soluble plutonium. And the standard for
14 non-soluble was twice as high as it was for the
15 soluble. Now I don't know the health effects,
16 you know, and how they differentiate one to the
17 other, but this is the way we operated. And
18 some of the people have been around the plant a
19 while maybe know what I'm talking about. But
20 this was another crime of convenience. So our
21 workers in the so-called non-soluble areas,
22 they were breathing higher levels of radiation
23 than those that were in the soluble areas. And
24 you know, I -- I never could understand that
25 conflict.

1 I had a guy the other day in the course of this
2 hearing say, you know, you never -- you never
3 were a very good worker on the floor; why did
4 you stay? Valid point. I learned early on I
5 couldn't afford to quit; I had a young family.
6 I thought well, if you can't quit or don't have
7 the guts to quit, try to make it better. And
8 that's when I got involved in the union
9 activities. Even though we didn't clear the
10 deck, I think we helped make it a little
11 better.

12 The other thing that helped is when we got out
13 of this umbrella from the Atomic Energy
14 Commission where the contractors didn't answer
15 for any of their -- their ills. They still
16 don't. Uncle Sam just writes them a check for
17 their legal fees and whatever else is
18 encountered along the way. But we were in a
19 total vacuum, in a bubble. We had virtually no
20 rights. We had virtually no sounding board for
21 our problems. That came about as a DOE
22 aberration, the Williams-Steiger Act, commonly
23 known as OSHA. DOE said we won't allow OSHA
24 inspectors in, but we'll give you our own
25 rendition, and boy, did they ever. And we

1 brought in some inspectors -- I was promptly
2 fired for about two -- two hours. And you
3 know, this is the benevolent contractor that
4 we're going to get around to here in a bit.
5 And the point I'm trying to make is this wasn't
6 an open environment, an open dialogue. In
7 fact, in some ways it's reminiscent to what
8 I've seen here. We had groups of people
9 talking about problems, but we didn't have all
10 the people talking about the problems. So it -
11 - it winds up where you have isolated groups of
12 information, isolated groups that are defining
13 problems. And I'm very disturbed that there
14 isn't a commingling where we have an active
15 dialogue develop.

16 In regard to the contractors -- I see that my
17 protege is restless, and I hope you are,
18 because if you're not I haven't accomplished
19 anything. The history of Rocky Flats and the
20 contractors. The government has conveniently
21 hidden behind the cloak of secrecy and, by
22 using pseudo-science created by arrogant
23 intellectuals, denying the workers and the
24 public access to the truth. So with that, I'd
25 ask do you have any questions today? This is

1 your chance -- chickens. Once again, please --
2 please, fire away.

3 **MR. CLAWSON:** I -- I do want to talk because,
4 you know, a lot of this is to be able to allow
5 you to be able to have a say, but I also want
6 to bring something else up.

7 **MR. HARDEN:** You've been captive.

8 **MR. CLAWSON:** The thing is is I want you to
9 explain, when you have to go in and decon an
10 area, what kind of stuff they'd give you to
11 decon with and how -- how it affected you. And
12 sometimes when it wouldn't decon all the way,
13 some of the mixtures that they'd come up with.

14 **MR. HARDEN:** Well, first off, you need to
15 calibrate your question in specific time frames
16 'cause this thing evolved due to low-bid
17 contracts and suppliers. Like after the big
18 fire, Dow Chemical sold us a bunch of their
19 kitchen cleaner -- imagine that.

20 Speaking of the fire, and this is an extension
21 of your comment, when we got shielding in 1968
22 or thereabouts, a lot of it was Benelex. When
23 the plutonium caught on fire or ignited, it
24 gassified the Benelex and that accelerated and
25 expanded the damage of the big fire

1 considerably. Prior to that we had virtually
2 no gamma shielding on that main line.
3 I heard a guy the other day say that workers
4 were all in the cafeteria after the fire.
5 Well, that -- that's bull, and we need to make
6 a steer of that bull, and we're about to. The
7 workers were out salvaging material. We had
8 parts hanging on pendants in the chainveyors in
9 the dry boxes with the gloves and the windows
10 burned off. These workers were trying to
11 recover the very valuable and strategic
12 important plutonium at a line.
13 To answer your question about the decon, it was
14 always pretty much Stone Age. We went through
15 several renditions and a lot of different
16 chemical experiments, but the most effective --
17 if -- if that could ever be accomplished -- was
18 usually with chem-wipes and with the solution
19 with the water -- wetter or surficant. And the
20 other thing that they used, especially when
21 we're in the height of production, was purple
22 paint. And whatever we couldn't control in a
23 timely fashion, they'd bring out the boys and
24 they'd start spraying the paint all over the
25 place. And like in 71 building, a couple of

1 those corners of the big rooms had probably an
2 inch or better residue of paint, you know,
3 where -- they were interested in getting
4 production going. They weren't interested in
5 cleaning an area, you know, to satisfy workers'
6 needs.

7 So I would tell you that decon's very hard to
8 generalize because every situation, every
9 material brings its own unique characteristics
10 into the mix, which brings up the subject --
11 like if you had solvents, carbon tet, very
12 difficult to control or contain, very difficult
13 to decon. Some of the solids and some of the
14 bigger particulates like turnings from a lathe
15 bed, obviously you can -- you can clean those
16 up fairly easy. Some of the other things would
17 permeate, you know, in the structure, in the
18 pores of whatever the product was. We were in
19 some situations where they had to use
20 jackhammers or scarfing equipment, you know, to
21 -- to abrade the surface before it could be
22 released for whatever purposes that they
23 intended.

24 So I didn't mean to -- yes, I did. I meant to
25 expand on your question. But I've seen a lot

1 of that through the course of this, and this
2 may be my last chance to torment you so you're
3 going to pay. And the purpose is not to
4 antagonize you, it's to try to inform you that
5 you've listened to a lot of people that had
6 pedigrees, but they weren't on the shop floor
7 and I can prove it. But I've been there and
8 I'm -- I'm interested in it, so...

9 **DR. ZIEMER:** I want to defer to your spokesman.
10 Do you want to have the general questions and
11 discussion now or do you have some additional
12 presenters first?

13 **MR. HARDEN:** Yeah, sorry. Yeah.

14 **DR. ZIEMER:** We -- we do need to get a comfort
15 break here (unintelligible) --

16 **MR. HARDEN:** Yeah, no, no, no, that's fine.

17 **DR. ZIEMER:** Let us defer to your --

18 **MR. HARDEN:** No, I can take a hint. Thank you
19 very much. Please help the sick Rocky Flats
20 workers.

21 (Pause)

22 **MR. DEMAIORI:** I would like to now introduce a
23 Colorado native, somebody who's grown very
24 close to us at Rocky Flats, somebody who grew
25 up with a lot of the folks that worked at Rocky

1 Flats, a lot of the professional staff and the
2 blue collar people, somebody who's represented
3 the state of Colorado very well in Washington,
4 the distinguished Honorable Bob Beauprez.

5 I'd like also to remind everybody that
6 Congressman Beauprez is a U.S. Congressman, co-
7 sponsored H.R. 428, and has always been a
8 strong advocate of ours at Rocky Flats.
9 Congressman.

10 **CONGRESSMAN BEAUPREZ:** Thank you, Tony, and all
11 of you. It's a privilege to be here, and
12 thanks for your patience and your dedication
13 and -- as you can imagine from that
14 introduction -- during my time in Congress at
15 least I felt very much like I was on that side
16 of the table, and that's probably what I will
17 focus most of my comments on in just a moment.
18 A little bit of expanded biography -- and very
19 little. For the record, I was born in 1948,
20 about a good drive or distance away from what
21 became Rocky Flats. I was -- I guess I would
22 have been two, maybe three years old when they
23 broke ground at the Flats, so in fairness, all
24 my life it's all I ever knew was the Flats.
25 Didn't know for sure what happened there,

1 didn't talk about that for a long while. But
2 almost everybody that I went to church with in
3 Lewisville, to school with, their parents
4 worked there, depended on it, did stuff that we
5 knew was extremely important. And then it was
6 their kids, same generation as me, and then the
7 kids after that that worked at Rocky Flats.
8 I came to appreciate especially this group of
9 patriots. I don't think that word's been used
10 today, but in my opinion, they are. We -- we
11 won that war. We won that war because of you
12 and we -- you know, we're -- we're in one
13 again, and we're all distressed that we deploy
14 our -- our best and our finest for a year, some
15 of them two, some will go back for a third,
16 maybe even a fourth tour of duty. You just
17 heard from one that did it for 37 years. And
18 we won that war.
19 And we send people off to work. My [identifier
20 redacted] told me to climb ladders and paint
21 the sides of the barns on our dairy farm or
22 stack hay or -- these people showed up for
23 work, too, knowing full well that there was a
24 risk inherent. They did the job. They did it
25 with an assumption just like I did with my

1 [identifier redacted], that if something
2 happened -- you fell, you got hurt, something
3 unforeseen that we didn't imagine before were
4 to happen to you -- we'd be there for you.
5 Somehow we'll pick you up, take care of your
6 injuries. We'll take care of you.
7 Now a nation that is great enough to figure out
8 how to win that Cold War, not only on behalf of
9 the United States of America but I submit to
10 you for the good of the majority of this entire
11 planet. A lot of people are far safer because
12 of what these people did. A nation that is
13 great enough to win that Cold War ought to be
14 big enough and great enough to have the
15 compassion and the caring and the justice to
16 take care of the warriors who won the danged
17 thing in the first place.
18 I want to talk a little bit about process, and
19 I will submit to you -- I guess for -- for the
20 record, for whatever good it is -- the wise
21 words of a -- an old lobbyist friend of mine
22 who happened to be from the other party. I'm a
23 Republican, he was a Democrat. But he told me
24 once, he said Bob, you know, if you're going to
25 assign me something, assign me to defeat it, to

1 get a no vote. And if what I've read in the
2 papers of late -- brought them with me -- is
3 true, the votes are probably already in. I
4 doubt honestly that anything I'm going to say
5 up here in the next few minutes is going to
6 change any of your opinions that are probably
7 already cast.

8 I've been in that situation. Again, I've sat
9 through hearings before. I'll -- I'll confess,
10 as a member of Congress you go there and your
11 mind's pretty well made up. You think you've
12 got the facts. I suppose you probably think
13 you've got all the facts. Maybe you've made
14 you mind up. And you just kind of wait till
15 the bitter end when everybody's said their
16 piece, and you cast your vote.

17 I get the joke. It's not a joke to these
18 people. This is life and death. This isn't
19 about well, we ought to fix Social Security.
20 We should. This isn't about disagreeing on
21 immigration policy. We ought to fix that, too.
22 But consistently we find the votes, don't we,
23 to say no. And the way you do that, he told
24 me, is massive amounts of information. And the
25 bigger and the more complicated and the more

1 maybe, could have been, should have been, might
2 have been that you can create, somebody gets
3 just a little bit of an element of doubt and
4 they let the perfect be the enemy of the good.
5 It's not good enough. It's not perfect enough.
6 I guess I'll vote no. And too often we avoid
7 doing the right thing.

8 I fear, if what I read in these papers is
9 correct, that exactly what frustrates people --
10 and ought to -- about government is that
11 government, as big and as great as this nation
12 is -- and I'll defend that flag till the day I
13 die and I know you will, too -- as big and as
14 great as we are, sometimes we can't find the
15 means to do what is right in front of us and is
16 blatantly obvious.

17 Now let me talk about EEOIPA (sic), or however
18 you refer to it, that Act, that legislation. I
19 was there. I voted for it. And I did sponsor
20 legislation with my Republican colleague Wayne
21 Allard in the Senate and two Democrat
22 colleagues, Mark Udall in the House and Ken
23 Salazar in the Senate, that if EEOIPA (sic)
24 wasn't good enough -- and for heaven's sakes,
25 let us put an exclamation point on it and tell

1 you -- if the record is not perfectly clear, we
2 as representatives of the people, every single
3 one of the current delegation, Democrat and
4 Republican, House and Senate, as well as a
5 bunch of us has-beens, Republicans and
6 Democrats, every one of us, as representatives
7 of the taxpayers, said take care of these
8 people. They've earned it. They deserved it.
9 They showed up and did the job. They took the
10 risk. Some of them are paying the price. For
11 heaven's sakes, do it. That's what we meant by
12 the Act. Not to go through volumes and volumes
13 of woulda/coulda/shoulda and find a reason to
14 deny, but reasons to approve -- and do it in
15 180 days or less, not in two and a half years
16 or more, and submit these people to endless
17 torture.

18 I had [identifier redacted] that went through
19 cancer. Fortunately not caused by work at
20 Rocky Flats, but I know what he went through
21 and we went through, my [identifier redacted]
22 and I, in those eight months that he was on
23 chemotherapy. I know what we went through and
24 still go through every day with that ghost that
25 sits on your shoulder -- is it back, am I sick

1 again, did I just get it, have I got the early
2 signs? It's a terrible thing to live with, and
3 then to believe that your government that asked
4 you to do the job is going to pull the rug out
5 from under you when you most need them. That's
6 a terrible thing to put people through. These
7 people did the job.

8 And [identifier redacted], wherever you're at -
9 - wherever [identifier redacted] went -- see,
10 all of you who took the risk and maybe didn't
11 have every ounce of protection by the
12 contractor, by the government, by whomever, my
13 apologies. But let me state from a lay
14 person's standpoint what I witnessed at Rocky
15 Flats. I did visit. My [identifier redacted]
16 and I visited. We went in Building 70 -- 70 --
17 771, too, and I guess if NIOSH is going to
18 expand, maybe they ought to take care of me,
19 too, in case I get sick. I don't think that
20 was the intent, and I'll tell you that was not
21 the intent. The intent of the legislation was
22 to take care of the petitioners, these steel
23 workers who did the heavy lifting, who put
24 themselves in harm's way and who've got every
25 right to expect that we would take care of

1 them.

2 From my perspective, they did the unthinkable,
3 the unimaginable, the impossible. They worked
4 with plutonium, and you know all the rest. And
5 they won the war. They did what we asked them
6 to do, and they did it going home at night
7 sometimes with a neighbor right across the
8 street protesting what they were doing. That's
9 tough duty. That's tough duty, to just
10 continue to show up because you know it's the
11 right thing to do, and you signed up and you're
12 going to get it done, believing that the
13 government's going to be there for you.
14 And then we said all right, the Cold War's
15 done. We can tear this place down. And of
16 course we heard the hue and cry -- you'll never
17 get it done, not in any of our lifetimes.
18 You'll never really clean it up, will you?
19 They did. It was these same petitioners, these
20 steel workers, who got it done -- ahead of
21 schedule, under budget, and today it sits
22 perpetually, as it started, as a wildlife
23 preserve -- from Mother Nature back to Mother
24 Nature. That's a pretty glorious lesson that
25 they taught the entire world.

1 Now we've got some of them that are sick, and
2 we're trying to find every single way we can to
3 say bad things happen to good people -- see ya.
4 Not the government I served and not the
5 government I believed in. I implore you to
6 approve this petition. Not only me, but every
7 single political representative in Congress,
8 Democrat and Republican in this entire state,
9 present as well as past and now your -- your
10 current Governor and Lieutenant Governor, are
11 saying this is a political question. What do
12 we want to do on behalf of a grateful nation;
13 we want to take care of these people. Take
14 care of these people.

15 There's another test or two that I think is
16 worth mentioning. We -- we are a nation, I
17 think rightfully and proudly, founded on what
18 we typically call Judeo-Christian principles.
19 Go back to those first Ten Commandments that
20 were given a long, long time ago. Right and
21 wrong, take care of folks, treat others as you
22 would want to be treated yourself. It doesn't
23 get any more complicated than that. Our kids
24 have developed their own cliché for that -- a
25 little test. What would Jesus do. I suppose

1 we're not supposed to mix religion and
2 politics. I don't think I am. I think what
3 I'm doing right now is talking about the
4 foundation of this country, the principles that
5 guide us -- again, we call them Judeo-Christian
6 -- what would Jesus do. Jesus will take care
7 of these people some day when He gets them in
8 His tender loving care, I have no doubt about
9 that. Will we? Will we? It is in your hands.
10 It is in your hands, and you -- as I've had to
11 before with my votes -- you will have to live
12 with whichever decision you make. I pray that
13 you decide on behalf of these petitioners.
14 They've earned it. They deserve it. They've
15 got a right to it, justice for all. Thank you.

16 **MR. DEMAIORI:** In order to facilitate this
17 meeting, the petitioner now closes comment.
18 Thank you very much.

19 **DR. ZIEMER:** Thank you very much. I think we
20 will take this point in the meeting to have a
21 comfort break for folks, so let's take a break
22 and then return around 11:00 or so and we'll
23 continue at that point. Thank you very much.
24 (Whereupon, a recess was taken from 10:40 a.m.
25 to 11:10 a.m.)

1 **DR. ZIEMER:** I think we're ready to reconvene
2 if you'd please take your seats.
3 I want to double-check and see if Board members
4 -- Mike Gibson, are you still on the phone?

5 **MR. GIBSON:** Here.

6 **DR. ZIEMER:** And Phil Schofield --

7 **MR. SCHOFIELD:** Yes, I am.

8 **DR. ZIEMER:** Jim Lockey?

9 **DR. LOCKEY:** Yes, I'm here.

10 **DR. ZIEMER:** John Poston?

11 (No response)

12 John Poston not on the phone?

13 (No response)

14 **ROCKY FLATS PETITION DISCUSSION**

15 Okay, thank you. We want to open the floor for
16 some discussion period now. I want to
17 recognize a gentleman who's been a pa-- I think
18 a part of the petition group that has had some
19 questions, and I'd -- if you would raise your
20 questions now, I don't know if the Board can
21 answer them, or perhaps NIOSH can help us with
22 your --

23 **MR. ROMERO:** Well, my questions weren't
24 necessarily for the Board but it was for NIOSH.

25 **DR. ZIEMER:** Okay.

1 **MR. ROMERO:** And I asked these questions
2 yesterday and you said NIOSH would answer them.

3 **DR. ZIEMER:** Well, I --

4 **MR. ROMERO:** Well --

5 **DR. ZIEMER:** -- I can't volunteer NIOSH, I
6 guess --

7 **MR. ROMERO:** Well, whatever.

8 **DR. ZIEMER:** -- but --

9 **MR. ROMERO:** But my question was --

10 **DR. ZIEMER:** -- NIOSH is here, a
11 representative, if they can answer it.

12 **MR. ROMERO:** I mean they -- they had their film
13 badges, we've listened to different people, and
14 my concern is about internal deposition --

15 **DR. ZIEMER:** Right.

16 **MR. ROMERO:** -- from airborne contamination --

17 **DR. ZIEMER:** Right.

18 **MR. ROMERO:** -- from jobs that went on at Rocky
19 Flats.

20 **DR. ZIEMER:** Okay.

21 **MR. ROMERO:** Deconning, production, you name
22 it. Hazards of the job, going in the area,
23 SAMs go off, no respirator -- or going back in
24 an area where the airborne concentration's too
25 high for the type of protection that you're

1 wearing.

2 **DR. ZIEMER:** Right. So the question has --

3 **MR. ROMERO:** And many -- my question -- my
4 question is, what documentation did NIOSH use -
5 -

6 **DR. ZIEMER:** For internal --

7 **MR. ROMERO:** -- other than bioassay. That's
8 all they talk about --

9 **DR. ZIEMER:** Other than bio--

10 **MR. ROMERO:** -- bioassay.

11 **DR. ZIEMER:** Oh, okay.

12 **MR. ROMERO:** What else did they use? We have
13 numerous different types of information that
14 was out there that's over at the Federal
15 Center. Did they have access to all that
16 information?

17 **DR. ZIEMER:** Okay, let me have NIOSH answer
18 this, but I -- I can tell you that NIOSH's
19 first approach is always to use the personal
20 bioassay information, so I guess -- Dr. Ulsh,
21 you want to address that?

22 **DR. ULSH:** I'll try. I might have to get some
23 clarification on exactly --

24 **MR. ROMERO:** (Off microphone) (Unintelligible)

25 **DR. ULSH:** -- what you'd like to know. As Dr.

1 Ziemer mentioned, the primary source of data
2 that we rely on to evaluate internal dosimetry,
3 internal intakes, is the urinalysis data,
4 whether it be for plutonium-specific, uranium-
5 specific or gross alpha -- I mean depending on
6 what was available. Subse-- secondary to that,
7 we also use lung counts when -- when necessary.
8 I mean the first line of defense is -- or the
9 first thing that we would rely upon is the
10 urinalysis data.

11 I know that also in -- in later -- sorry -- in
12 later time periods, some limited fecal sampling
13 was also done. We would use that when it's
14 available. But those are the primary sources
15 of data that we would rely upon.

16 **MR. ROMERO:** Well, my question is on protection
17 factors of respirators. You know protection
18 factor respirators and what the maximum amount
19 you can be in an area with that type of
20 protection.

21 **DR. ULSH:** Uh-huh.

22 **MR. ROMERO:** If you're in a area that's ten
23 times or 100 times or 1,000 times that
24 protection, that person's in that area working
25 --

1 **UNIDENTIFIED:** (From the audience and off
2 microphone) Sorry, we've got people on the
3 phone (unintelligible).

4 **UNIDENTIFIED:** Okay.

5 **UNIDENTIFIED:** (From the audience and off
6 microphone) Could you (unintelligible)
7 microphone?

8 **UNIDENTIFIED:** (Unintelligible)

9 **MR. ROMERO:** My question is about protection
10 factors of respirators, 'cause that's all we
11 had to do our jobs out there. A full-face or a
12 PAPR respirator.

13 **DR. ULSH:** (Unintelligible).

14 **MR. ROMERO:** That's all we had to do the
15 deconning, move material, bag-outs, glove
16 changes, window changes, you name it --
17 respirator's all we had. When the protection
18 factors were exceeded, management would allow
19 us to close the job down, shut the job down, go
20 to the next level of protection.

21 **DR. ULSH:** Uh-huh.

22 **MR. ROMERO:** But as times went on, management
23 deemed that it was allowed to exceed protection
24 factors out there, and protection factor were
25 exceeded on a constant basis out there,

1 especially during D&D times. The levels may be
2 1,000 times or 100,000 times the protection
3 factor of that respirator or PAPR, and the
4 people that were in those areas doing that
5 work, day in, day out for months were not
6 subject to fecal samples or not subject to
7 urine samples on a daily basis. It was only
8 during extreme sit-- sit-- situations where
9 they would make them go do fecal, make them do
10 urine. Occasionally they would do that, but
11 they didn't like do it on a daily basis because
12 they knew they were exceeding protection
13 factors because they didn't want Price Anderson
14 fines.

15 So my question is to you, how do you judge --
16 I'm in a area that's 1,000 or 100,000 times
17 greater protection factor than my respirator,
18 how are you going to equate that to what I got
19 internal to that respirator, if that respirator
20 was functioning at 100 percent.

21 **DR. ULSH:** Okay. That's a very good question
22 and I appreciate your concern on this, and
23 there are certainly -- certainly safety
24 implications for a situation like you describe.
25 What I need to try to make clear, though, is

1 that in NIOSH dose reconstructions we don't
2 consider any reduction in intake because people
3 were wearing respirators -- none, none
4 whatsoever. We don't assume a protection
5 factor of 1,000, 100, nothing. We rely
6 strictly on the urinalysis, the bioassay data,
7 under -- you know, most normal circumstances.
8 So let's say you were wearing a respirator and
9 it was malfunctioning, or you were in an
10 environment that was inappropriate for that
11 respirator and it resulted in an intake
12 because, you know, you had the wrong respirator
13 or it wasn't working. Well, if that resulted
14 in an intake, then that would be reflected in
15 your bioassay data. And I understand that it
16 wasn't taken on a daily basis -- except under
17 extraordinary circumstances. But there was a
18 routine bioassay program at Rocky Flats. And
19 let's say you go in on Monday, you get a -- an
20 intake. You go in on Tuesday, you get another
21 intake. On Friday you go in for your bioassay.
22 Well, that's going to show the integrated
23 measure, all of those intakes that you got are
24 going to be reflected in your urinalysis data,
25 and that's what we're going to use for dose

1 reconstruction.

2 **MR. ROMERO:** What about -- what about three to
3 six months later? They weren't done three days
4 later, four days later.

5 **DR. ULSH:** Right.

6 **MR. ROMERO:** They may be done months later.

7 **DR. ULSH:** Right, taking --

8 **MR. ROMERO:** Or when specific times happened
9 where they deemed for them that they needed to
10 do it. So my question is, a person that did
11 12-hour days, seven days a week in those high
12 values, how can you sit there and tell me oh,
13 we'll wait until we do a fecal sample or a
14 urine sample on that person to get an
15 evaluation. If it's three or four weeks later,
16 he's already excreted whatever might have been
17 inside of him, so the dose is not going to be
18 the same.

19 **DR. ULSH:** You're absolutely right. The body
20 can clear, and does clear, radioactive
21 materials with a known function --

22 **MR. ROMERO:** Uh-huh.

23 **DR. ULSH:** -- you know, that we --

24 **MR. ROMERO:** Natural pathways.

25 **DR. ULSH:** Exactly. And so what we would

1 typically do is -- let's say you had a bioassay
2 in January. You got an intake in February.
3 You didn't get the next bioassay until June,
4 and it shows a positive. Well, we can't say
5 when in that period you actually got that
6 intake -- sometime between January and June.
7 So given the fact that we can't -- usually --
8 can't sometimes tie a particular intake to a
9 particular event, what we are going to do is
10 say well, we know it happened sometime in this
11 time period, before -- or after the last
12 negative bioassay. What can we do to estimate
13 this dose in a claimant-favorable manner? What
14 we're going to do is assume, in general, that
15 it happened the day after your last bioassay.
16 That results in the highest dose estimate for
17 that situation.

18 Now if we assumed that your intake occurred the
19 day before your bioassay, that would not be
20 claimant favorable, and that's why we don't do
21 it. We go all the way back to your last
22 bioassay, and that's a claimant-favorable way
23 to do it. It results in the highest estimated
24 dose.

25 **MR. ROMERO:** And that's going to be conducted

1 at everybody that worked out at the plant?

2 **DR. ULSH:** Yeah, that's routine.

3 **MR. ROMERO:** Plutonium side or uranium side.

4 **DR. ULSH:** Yes, absolutely. That's the way we
5 do internal dose reconstruction.

6 **DR. ZIEMER:** I might add that the Board has
7 examined this methodology and -- and we agree
8 with -- with NIOSH that that gives the most
9 claimant-favorable outcome. In other words, it
10 will give a number which is never lower, but is
11 -- is in general higher than the actual dose
12 because it is a very conservative assumption.
13 It's sort of like the reverse of The Price is
14 Right. You never want to be under the number,
15 you want to be at the number or over, and this
16 always does that.

17 **DR. ULSH:** Yeah, and that --

18 **DR. ZIEMER:** So the Board has been satisfied
19 with that methodology.

20 Another question? Yes.

21 **UNIDENTIFIED:** I have a question for Mr. Ules
22 (sic), too. My question is about --

23 **DR. ZIEMER:** And for the record, you need to
24 identify --

25 **UNIDENTIFIED:** Oh, I'm sorry.

1 **DR. ZIEMER:** -- yourself, yeah.

2 **MS. PADILLA:** My name is Judy Padilla and I
3 would like to ask Mr. Uls (sic) of NIOSH about
4 the as least likely as not, the 50 percent.
5 Why don't they put as 50 percent of what? We
6 never know what that number is and how you
7 arrived at that number.

8 **DR. ULSH:** Okay. That's a -- I'm going to try
9 to answer your question in the time that we
10 have available, but recognize that it's a very
11 complex --

12 **MS. PADILLA:** Of course.

13 **DR. ULSH:** -- topic, of course. The
14 probability of causation reflects the chance
15 that the cancer was caused by the radiation
16 exposure that you experienced at Rocky Flats.
17 And we take the value at the 99th percentile --
18 now that sounds like mumbo-jumbo. Let me
19 explain it just a little bit.

20 **MS. PADILLA:** Of course.

21 **DR. ULSH:** There's a dis-- there's a
22 distribution of values, and it reflects what --
23 some of what you've heard about here today, the
24 uncertainties. We take all of that into
25 account explicitly, and when we come up with a

1 probability of causation value, we don't take
2 the median, the average value. We take the
3 value all the way out at the 99th percentile,
4 and that tells us that in 99 times out of 100 -
5 - there are -- a 99 percent chance that we are
6 overestimating the dose, overestimating the
7 probability of causation. And we do that to
8 account for a lot of the uncertainties that
9 have been discussed. I hope that answers your
10 question.

11 **MS. PADILLA:** No, it doesn't answer my
12 question. My question is, why don't they put
13 the number of what the 50 percent is from, the
14 -- the 99th percentile, as you call it. That's
15 not on our paperwork.

16 **DR. ULSH:** Oh, I see, not in the dose
17 reconstruction report that you get.

18 **MS. PADILLA:** Yes.

19 **DR. ZIEMER:** Dr. Neton perhaps can clarify
20 this.

21 **DR. NETON:** I might comment on -- on that. The
22 -- the do-- NIOSH's responsibility under the
23 Act is to actually do the dose reconstruction,
24 so you'll get a detailed report that highlights
25 the information -- the dose that was calculated

1 in your particular case. It's really the
2 Department of Labor that has responsibility to
3 do the final adjudication; that is, do the
4 final calculation to determine what the
5 probability of causation is, and that number
6 will show up on the letter that you get from
7 the Department of Labor.

8 **DR. ZIEMER:** Well, let -- let me add some --
9 maybe to clarify. The -- the Department of
10 Labor basically is using the IREP program,
11 which has been referred to before, which is a
12 computerized model of the National Cancer
13 Institute's risk statistics. For example, a
14 certain cancer has a certain probability per
15 unit dose. This is largely based on the
16 Japanese studies and adjusted for the American
17 population, but it's a probability per unit
18 dose, numbers that come from the National
19 Cancer Institute, that Labor uses. And based
20 on the dose that that person received to the
21 organ of interest -- say it's the lung -- they
22 compute that and it's -- and it is the -- they
23 get a distribution of possibilities and they
24 take the high end of that, which is the most
25 claimant favorable, and they say okay, that is

1 what we're talking about. So it's -- it's
2 that. It's the pro-- it's -- is it more likely
3 than not, based on those numbers.

4 Now let me give you an example, and I'll do
5 this in terms of asking a question of one of
6 our presenters. Let me ask Bill Brady, who
7 talked about the risk estimates for brain
8 tumors and cited the work of Dr. Ruttenber.
9 Now -- so he had information on the incidence
10 of brain tumors, I assume, and then calcul--

11 **MR. BRADY:** No, that's not right.

12 **DR. ZIEMER:** Oh.

13 **MR. BRADY:** His concern was that because of the
14 high incidence at --

15 **DR. ZIEMER:** At Ro--

16 **MR. BRADY:** -- at Rocky Flats, that the numbers
17 were in fact not accurate and that the IREP
18 model was faulty.

19 **DR. ZIEMER:** Yeah, I understand that.

20 **MR. BRADY:** Yeah.

21 **DR. ZIEMER:** But I'm saying he had some number
22 -- he had a number of brain tumors in that
23 population --

24 **MR. BRADY:** Yes. I'm sorry, yes, I didn't
25 understand.

1 **DR. ZIEMER:** -- and I assume that he relied on
2 the Rocky Flats dose data. What -- what did he
3 use to -- to determine risk per unit dose?

4 **MR. BRADY:** Oh, I -- I -- I'm sure that that's
5 what it was, yeah. I mean I -- I can't --

6 **DR. ZIEMER:** So he --

7 **MR. BRADY:** -- recall off the top of my head,
8 but I can't imagine it being anything else.

9 **DR. ZIEMER:** So he -- he --

10 **MR. BRADY:** Would have to agree.

11 **DR. ZIEMER:** -- he in fact relied on the Rocky
12 Flats dose data --

13 **MR. BRADY:** I think that's right.

14 **DR. ZIEMER:** -- to compute a risk per unit
15 dose.

16 **MR. BRADY:** I think that's right.

17 **DR. ZIEMER:** And in essence, he could do
18 something similar -- you know, he's saying
19 okay, maybe -- maybe these numbers are the ones
20 that should have been used. We're -- we're
21 required under law to use the National Cancer
22 values until they change them, and perhaps that
23 study -- and -- and in fact the IREP model over
24 -- over time has changed as we get new
25 information. That -- that that was a possible

1 --

2 **MR. BRADY:** I think that was part of the
3 conclusion of the study.

4 **DR. ZIEMER:** Yeah. So -- but all I'm saying is
5 that that's really the approach that's used.
6 It's to take information of that type, but it
7 also -- I had a sort of a subtle point I was
8 making is that he did rely on the validity of
9 the Rocky Flats data to do that study, and I
10 simply want to make that -- that note.

11 **DR. ROESSLER:** Could I add to that?

12 **DR. ZIEMER:** Yes, Dr. Roessler.

13 **DR. ROESSLER:** I have a comment right on that
14 point, and since you brought it up I'll make
15 the point. Also Dr. Ruttenber --

16 **UNIDENTIFIED:** (From the audience and off
17 microphone) We can't hear you.

18 **DR. ROESSLER:** Yeah, I don't think my mike is
19 working maybe.

20 **MS. MUNN:** This one is.

21 **DR. ROESSLER:** Let me try this one. Now I
22 think this one's working.

23 **UNIDENTIFIED:** Great.

24 **DR. ROESSLER:** Yeah. You mentioned also that
25 Dr. Ruttenber is recommending a rather large

1 epidemiological study on the Rocky Flats
2 workers. I think he's particularly interested
3 in brain cancer, but to do an epidemiological
4 study you need dose estimates. You need good -
5 - you know, excellent dose estimates, even
6 better than you would need for this particular
7 program. You don't need just upper bounds, you
8 need accurate dose estimates. So my conclusion
9 is that Dr. Rutenber does feel that he can get
10 dose estimates from the Rocky Flats workers,
11 and that's my only comment.

12 **DR. ZIEMER:** Dr. Melius?

13 **DR. MELIUS:** Well, I -- I hesitate to follow up
14 'cause I think we're -- we're speculating on --
15 but -- on something that -- person who's not
16 here and maybe that's not completely fair, but
17 I -- I just would remind that -- one correction
18 to what -- what you said, Dr. Ziemer, is the
19 Act does call upon NIOSH to develop
20 modifications to IREP where appropriate based
21 on the worker experience and --

22 **DR. ZIEMER:** Right --

23 **DR. MELIUS:** -- and my -- my inter--

24 **DR. ZIEMER:** -- I thought I'd made that point,
25 in fact --

1 **DR. MELIUS:** Okay.

2 **DR. ZIEMER:** -- that we have modified IREP as
3 we go along, as we get new information, and
4 perhaps this would be such a case.

5 **DR. MELIUS:** Right, and I -- and I think that's
6 what he was recommending, so -- okay.

7 **DR. ZIEMER:** Yeah. I -- I agree with you on
8 that.

9 **MR. BRADY:** If I could just comment on that --

10 **DR. ZIEMER:** Right.

11 **MR. BRADY:** -- the conclusion of the -- of the
12 -- I forget it now -- the mortality of
13 plutonium workers at the Rocky Flats nuclear
14 weapons plant, that conclusion is -- and I'll
15 quote -- data from the Rocky Flats cohort
16 provide the best source for estimating the risk
17 per unit dose for lung cancer among modern
18 plutonium workers, estimates that are important
19 for assuring that plutonium workers receive
20 adequate workplace protection, and that former
21 plutonium workers with lung cancer are fairly
22 compensated through the EEOICPA.

23 **DR. ZIEMER:** Right.

24 **MR. BRADY:** So yes, in fact he is recommending
25 that study be done based upon that -- that

1 population.

2 **DR. ZIEMER:** While you're at the mike, could
3 you clarify -- did -- did his study look at
4 only malignant bone -- brain tumors or --

5 **MR. BRADY:** No --

6 **DR. ZIEMER:** -- both --

7 **MR. BRADY:** -- he -- he looked at more than
8 that, but -- and again, the -- just let me
9 finish the -- the last sentence of the report
10 following that last sentence was: For similar
11 reasons, dose response studies of Rocky Flats
12 workers may help clarify the risk for brain
13 tumors among radiation workers.

14 This study purported to look at -- and I think
15 I read it into the record earlier, but there
16 were several cancers and I'm -- I'm looking for
17 the section that I -- here it is -- lung,
18 liver, bone and connective tissue were the
19 areas that he looked at, and he found elevated
20 risks certainly for the bra-- brain tumors, and
21 is recommending further study for all of them.

22 **DR. ZIEMER:** Thank you very much. I'd like to
23 -- just a moment. I just want to follow up on
24 one thing. Jerry raised the issue of tritium,
25 and I want to ask NIOSH, do we have tritium

1 bioassay on any workers at Rocky? I -- I think
2 we do, but I just wanted to get some clarity on
3 that.

4 **DR. ULSH:** The answer is yes, we do have bioa--
5 tritium bioassay. I've personally seen tritium
6 urinalysis results in individual worker
7 radiation files.

8 **DR. ZIEMER:** Okay, just wanted to clarify that.
9 I thought that was the case, but I wanted to be
10 sure.

11 **UNIDENTIFIED:** (From the audience) They didn't
12 do urinalysis (unintelligible) tritium.
13 (Unintelligible)

14 **DR. ZIEMER:** Okay, other -- Dr. Melius.

15 **DR. MELIUS:** Just to follow up on that -- Mark,
16 maybe you can answer this, or somebody from
17 SC&A -- has that issue ever been evaluated by
18 the workgroup or SC&A and have they looked --

19 **MR. GRIFFON:** Yeah --

20 **DR. MELIUS:** -- at the completeness of that
21 data and --

22 **MR. GRIFFON:** -- we -- we looked at -- in our -
23 - our discussions on other radionuclides, we
24 certainly looked at tritium as one of the other
25 radionuclides and -- through the workgroup

1 process, so yes, we did look at that.

2 **DR. MELIUS:** But -- but has it been validated
3 or verified -- I mean in terms of going back to
4 -- I -- I'm just trying to get sort of the
5 depth of the evaluation --

6 **MR. GRIFFON:** I honestly can't remember. I
7 don't know if SC&A can speak to that -- the
8 extent of the data and whether we -- but we...

9 **DR. ZIEMER:** Dr. Makhijani's approaching the
10 mike --

11 **MR. GRIFFON:** You know, that's why we -- we did
12 end up with thorium as --

13 **DR. ZIEMER:** -- do you recall --

14 **MR. GRIFFON:** -- the final sort of nuclide that
15 we were concerned about. But anyway, go ahead.

16 **DR. MAKHIJANI:** Yeah, tritium was one of the
17 radionuclides that we looked at in our other
18 radionuclide report. We did not find tritium
19 data on the HIS-20 database, unlike some of the
20 other radionuclides where we said -- neptunium,
21 americium I remember -- to the best of my
22 memory, we found them compiled in the
23 electronic database. We did not find tritium
24 data compiled in the electronic database and
25 raised this question in a working group. And

1 at that time we were told by NIOSH that the
2 tritium data are in the individual worker dose
3 records. Also -- but for the record, there --
4 the one check that we did, I believe -- and
5 Kathy was the one who did this -- from -- from
6 the individual dose record, I believe maybe
7 from the SEC petition, we didn't find that
8 sample in the record, but that was just one
9 thing and we didn't find a systemic pattern.
10 There are -- I believe that we have verified
11 that there are some tritium bioassay data in
12 the -- in the record, but we did not follow up
13 on the NIOSH statement and do an exhaustive
14 check on that. We -- we accepted that
15 statement.

16 **DR. ZIEMER:** Okay.

17 **DR. MELIUS:** Thank -- thanks for the...

18 **DR. ZIEMER:** Kathy DeMers, do you have some
19 additional comments from --

20 **MS. ROBERTSON-DEMERS:** Yeah, and if --

21 **DR. ZIEMER:** -- SC&A?

22 **MS. ROBERTSON-DEMERS:** -- if you remember,
23 there was a logbook that we looked at, 1966
24 through 1969, special analysis logbook, there
25 were also some tritium results listed in there.

1 **DR. ZIEMER:** Okay, thank you. Question.

2 **MR. DEMAIORI:** Tony DeMaiori. I'd like to move
3 to another subject that Mr. Bradley Clawson had
4 brought up, and that was describe the decon
5 procedures that we worked under at Rocky Flats.
6 As being a chemical operator, chemical control
7 operator and then a rad tech, I have a lot of
8 experience in area and personnel
9 decontamination. That's a lot of time working
10 in Building 771, the carrier for the plutonium
11 was nitric acid, whether it was seven -- seven
12 five normality or 12, that's when a SAM alarm
13 would occur, selective alpha air monitor,
14 that's the people would go out of the room,
15 they'd run. That's basically -- they'd meet in
16 the hallway. We'd pick up the decontamination
17 supplies, big stacks of paper towels, we called
18 them chem-wipes, that was the manufacturer's --
19 and detergent. We'd run back in the room with
20 full-face respirators on and we would, in a
21 rapid fashion, throw as many paper towels on
22 the floor as we could as quick as we could.
23 Somebody would follow with the wet solution,
24 the decontamination solution, in a desperate
25 attempt to keep the plutonium from drying out

1 and going airborne, to reduce the mess,
2 basically, is what I'm telling you. That --
3 that was pretty normal. We didn't take DAC
4 samples back then. We didn't have any idea of
5 airborne concentrations. We simply went in and
6 negated the circumstance, the problem. That
7 was pretty normal. That's 771, 371, being an
8 aqueous system with all the variety of
9 chemicals from hydrofluoric acids to nitric
10 acids to caustics. After we controlled the
11 spill, then the process of the actual cleanup
12 would occur. We'd decon from the ceiling to
13 the floor. That's -- and then we would have to
14 neutralize the suits. That's -- this is --
15 considerable period later when we decided if it
16 was a nitric acid spill, we'd dress everybody
17 in a rain suit, a yellow acid-resistant suit,
18 and we'd put -- we'd put individuals in
19 charcoal canisters. Now I'll have to tell you,
20 being human, you -- you know, I've done a lot
21 of decontamination in charcoal canisters for
22 nitric acid with plutonium, so I did take an
23 OSHA class several years later that said no
24 known protection for nitric acid other than
25 SCBA, that's supplied breathing air, that's

1 SCUBA, that's self-contained breathing
2 apparatus. We used nitric -- for nitric acid
3 we used charcoal canisters. We thought we were
4 protecting ourselves. We thought we were
5 protecting our brothers and sisters. So in
6 fact we were breathing plutonium nitrates the
7 entire time we were deconning at Rocky Flats,
8 and we did it for years. That's -- and as
9 Jerry Harden articulated on the bioassay
10 program, it may or may not have shown up in the
11 bioassays. That's simply to say that we'll
12 catch you in the next 30 days, 60 days, six
13 months is absolutely incorrect. That's -- we
14 believe this, we stand by this, that's -- we --
15 we failed to convince members of the Board of
16 this, however we believe the high-fired oxides
17 do mask themselves and that they're not caught,
18 they don't dissolve, they're insoluble and that
19 it doesn't go through the waste system in -- in
20 a quick period of time. So -- so we don't
21 believe that you can hang your hat on that.
22 But you did ask for the decontamination
23 procedures. 371, we had the big acid spills,
24 the 4,000 or 5,000 liters where we blew up
25 tanks when we were first starting the -- the

1 building, we had a -- a stainless steel side
2 and we had a carbon steel side of -- of our
3 process, stainless steel for the acids.
4 Unfortunately during construction a few carbon
5 steel tanks were piped into the stainless steel
6 system and -- and they did explode and we lost
7 4,000 or 5,000 liters of nitric acid, to the
8 point where you could see an orange cloud above
9 the facility. That's -- and I mean on the
10 outside when I went to work that day. It was a
11 huge spill it took us almost nine months to
12 clean up. That's -- and we did the same thing,
13 we used our charcoal canisters and it was with
14 plutonium. I mean it was plutonium-based. So
15 -- so you -- you know, we've had a lot of
16 problems and the cocktails were definitely
17 there. I use the term cocktails because
18 whether it was aluminum nitrate, hydrofluoric
19 acids, nitrates, you know, I dumped a lot of
20 soda in -- in the bags of -- of the acid suits
21 of my coworkers to neutralize so that it
22 wouldn't explode in a 55-gallon drum. And we
23 had 55-gallon drums explode on us. We -- we
24 had drum lids where you could see the rings on
25 the ceilings of our facilities that were 35, 40

1 feet in the air. That's -- and so, you -- you
2 know, we worked real hard and -- and we tried
3 to mitigate these things, and a lot of things
4 we were involved in didn't go documented, but -
5 - but I have to honestly tell you, what Dennis
6 is saying is true. We tried to protect
7 ourselves. We used the best -- best protection
8 available to us. That's -- and we believed
9 that we were protecting ourselves and our
10 coworkers. That's -- but as time tells, as
11 technology gets better, as we get smarter as
12 people, we -- we often find that what we did in
13 the past wasn't good enough.
14 That's -- and my analogy to that is the solar
15 ponds, state of the art in the '50s. You
16 didn't like it, you threw it in the pond. It
17 evaporated, wind blew it to Nebraska and it
18 rained on those people, but it was gone. Okay?
19 That -- we thought hey, that's a pretty good
20 thing. That's a good way -- way of dealing
21 with waste. And then we found out hey, no,
22 that's not. Good folks in Nebraska didn't
23 appreciate it. So -- so technology, you know,
24 that's -- we're learning and that's why this
25 petition is so important to us 'cause we

1 believe still today that we're learning this
2 and, you know, when you're talking about
3 people's lives and you're talking about their
4 families, to -- to say absolutely we can do
5 this -- I think in a perfect world, absolutely
6 you can, given all the facts on every single
7 thing. But I don't think that we have all the
8 facts and I don't think we ever can.

9 So anyway, to answer your question on the
10 decontamination, that's -- we were in there,
11 that's -- we did the decontamination the best
12 we could as fast as we could with the tools
13 that were available. That's -- we did try to
14 protect ourselves from acid burns, that's -- we
15 didn't want to absorb anything, for -- for
16 goodness sakes, if we didn't have to. We
17 didn't want to breathe it if we didn't have to,
18 but that didn't always work. I worked in 371,
19 caustic treatment, that's -- we broke a caustic
20 line. I sent a guy in unprotected to shut the
21 valve. It was a 4,000-liter tank. That's --
22 we didn't want to expose the rest of the world,
23 so he just threw on a full-face. His job was
24 just to go in and shut the valve. Somehow it
25 got on his arm and it burnt the heck out of

1 him. I mean, you know, that was just part of
2 the job, that's -- but he saved the rest of us
3 tremendous amounts of exposure. It's just what
4 happened. That's how we did it. That's -- we
5 did it to the best of our training. That's --
6 and the end of Rocky Flats, we had the -- the
7 fire in the stacker retriever in 371, that's --
8 and you -- you know, our procedure was three
9 fire extinguishers and supplied breathing air
10 and you're out. Then -- then you turn it over
11 to the fire department. But our people thought
12 that they could control this fire and 33 fire
13 extinguishers later and a \$1 million Price
14 Anderson fine, that's -- we brought the fire
15 under control. That's -- and I have to tell
16 you, the guys did it for the right reason,
17 that's they wanted to protect their families.
18 They wanted to protect the community. Okay? I
19 had a answer to that, and my answer was that
20 they were heroes. They didn't necessarily
21 follow their procedure, that's -- and so you --
22 you know, I tell you that a lot of things that
23 we did was instinct and training. That's --
24 and dedication, from the heart, but it wasn't
25 always perfect and I think the nitric acid with

1 the charcoal canisters is a prime example of
2 that. I myself have a little bit of plutonium
3 -- just a little bit, though -- in -- in my
4 lungs, and you -- you know, it came out of one
5 of these body counts.

6 One year they said hey, the americium's up,
7 we're going to recount you. They recounted me,
8 you're below background. Next year they said
9 hey, the americium's up, we're going to recount
10 you. They recounted me, I was below
11 background. The third year they said the Am's
12 up and we know where it came from. You -- you
13 were involved in an incident in this module, so
14 draw your own conclusions. That's -- I -- I
15 mean honestly, draw your own conclusions. I
16 was in every environment on that plant site,
17 both as an operator and a rad tech. That's --
18 I personally don't believe the bi-- bioassay's
19 infallible. I believe that once you do detect
20 it, once you do get ahold of it, then you can
21 measure it, absolutely. But when do you get
22 it? From incident, from inhalation, from
23 intake, injection, whatever, to when we
24 actually discover it, that's -- I was involved
25 in shutting 771 down when we were in the middle

1 of decommissioning the building because we had
2 11 people out of nowhere, out of absolutely
3 nowhere, that's -- come up with extreme
4 intakes. Okay? We didn't know where it came
5 from. We'd been working in the building
6 happily, everybody was working really hard, the
7 progress was phenomenal. All of a sudden one
8 day, wham, 11 people do -- we couldn't figure
9 it out fast, but we had to shut the facility
10 down. We had to stop the decommissioning of
11 that facility and then try to regroup and
12 figure out where it came from. So this
13 happens, that's -- and how does it happen? It
14 happens because a valve's leaking and you've
15 got to go in there and shut it, and it happens
16 because --

17 **UNIDENTIFIED:** (From the audience and off
18 microphone) (Unintelligible)

19 **MR. DEMAIORI:** Well, it's not -- not even
20 mistakes. It's nature of the business, the
21 absolute nature of the business. Thank you.

22 **DR. ZIEMER:** Thank you. Board members, any
23 additional questions or comments? Dave Hiller.

24 **MR. HILLER:** Thank you, Dr. Ziemer. I'm David
25 Hiller with Senator Salazar's office. I've got

1 a couple of questions for the appropriate NIOSH
2 representative. I'll let you pick.

3 The -- the first question is that there were
4 references made yesterday to comments --
5 statements of the Scientific Advisory Board for
6 the NDRP, and my question is whether or not
7 ORAU, who is managing NDRP for NIOSH, was
8 involved in selection of the people who
9 participated on that advisory board.

10 **DR. ZIEMER:** I believe that advisory board
11 predated the -- the EEOICPA activities, did it
12 not?

13 **MS. MUNN:** It did.

14 **DR. ULSH:** That is correct, it predated
15 EEOICPA.

16 **DR. ZIEMER:** But ORAU was around, so I guess
17 that's the question.

18 **DR. ULSH:** I don't -- I don't know the answer
19 to your question, David. I don't know how they
20 selected the members of the advisory board.

21 **DR. ZIEMER:** Okay, go ahead David.

22 **MS. MUNN:** I think they were people who
23 (unintelligible).

24 **MR. HILLER:** Before you leave, Dr. Ulsh --
25 second question is -- you indicated that with

1 regard to the analysis of the thorium strike
2 issue that -- that there was one individual
3 upon whom you placed a great confidence rather
4 than relying on -- on the report of a
5 documented investigation. But there are other
6 issues. For example, Mr. DeMaiori just
7 provided some personal history anecdotes of
8 incidents that he was personally involved in.
9 In some circumstances you don't accept the --
10 the statements of individuals as defining what
11 occurred at the plant. Can -- can you explain
12 that dichotomy, please?

13 **DR. ULSH:** Well, okay. In terms of the thorium
14 strike, first you have to realize that we're
15 talking about a very small group of people. I
16 mean there was a larger group that was involved
17 in the uranium-233 project, but there were
18 seven individuals involved in the thorium
19 strike and we have their names. I mean we know
20 who they were. The person that we relied upon
21 was the manager in charge of the project at the
22 time. He was there when they did the thorium
23 strike. He was a hands-on individual involved
24 in that project.
25 Now in terms of -- you mentioned other accounts

1 that you characterized as we don't accept. I
2 don't agree with that characterization. We --
3 I spoke yesterday that we evaluated each and
4 every concern expressed by members of the
5 public in the petition, that we could cull from
6 the transcripts, through communications with
7 the petitioner, and we evaluate each and every
8 one of those, just as we did with -- with this
9 particular individual. I mean we -- we -- we
10 consider each and every one of these things
11 that we have heard. We take them very
12 seriously and we -- we investigate it.

13 **MR. HILLER:** And did you contact each of the
14 other seven individuals that were involved in -
15 - in handling the thorium --

16 **DR. ULSH:** No --

17 **MR. HILLER:** -- materials?

18 **DR. ULSH:** -- no, we didn't.

19 **DR. ZIEMER:** Could I interrupt on this one?
20 Now the -- the other report that you referred
21 to, I think it was the advisory board or the
22 advisory group, that identified a different
23 building -- 71 --

24 **DR. ULSH:** Not exactly. There -- the report
25 that first raised this question -- okay, not

1 first raised it, but it brought it to our
2 attention -- was called "A History of U-233 at
3 Rocky Flats" and that report was written 40
4 years after the fact. And it relied on a
5 classified document that was authored in 1965,
6 right at -- just after the time of the thorium
7 strike. We got that classified document -- we
8 had it pulled and we had it -- the pages
9 redacted, and that is the source of the idea
10 that the thorium strike might have happened in
11 Building 71. So then we evaluated the pedigree
12 of that -- of that document. And what we found
13 was that it was authored by an independent
14 investigation committee. Not investigating the
15 thorium strike, they were investigating a later
16 contamination incident dealing with the U-233
17 and some U-235 that got in with it, and they
18 were investigating that particular incident.
19 And they were an investigation committee and
20 they wanted to purposefully pick people who
21 were not involved with the project because they
22 wanted independence. So we evaluated that --
23 the word -- the recollection of the hands-on
24 project manager was more definitive, more
25 authoritative than -- than that other report.

1 **DR. ZIEMER:** But you couldn't necessarily rule
2 out the possibility that thorium strikes did
3 occur in the other -- I mean in both cases it's
4 recollecting something --

5 **DR. ULSH:** I can --

6 **DR. ZIEMER:** -- quite a ways back, I guess.

7 **DR. ULSH:** Well, I can tell you that this
8 project generated a lot of attention from --
9 from health physics. Dr. Bistline, who is
10 known to many of the workers and who is -- or
11 at least was, I think he still is -- retained
12 by SC&A, characterized it as this project --
13 this is my paraphrase 'cause I don't have it
14 right in front of me -- this project received
15 very high attention from health physics and so
16 -- I mean it just wasn't one of these projects
17 that, you know, went under the radar.

18 Now there was security concerns with it. I
19 don't want to misrepresent that. But the point
20 of that is that there was a small group of
21 workers who were involved with this project and
22 they wanted to maintain that group of workers
23 to do that same project when it occurred again
24 in '77, so I'm pretty con-- I'm -- I have the
25 utmost confidence in the -- the worker that we

1 talked to.

2 **DR. ZIEMER:** Thank you. David?

3 **MR. HILLER:** My next question is for SC&A, Dr.
4 Ziemer. In -- in reading the most recent
5 supplemental report from SC&A, my
6 interpretation of that report, as -- as a lay
7 person, is that there's a real question as to
8 the -- the reliability and accuracy of the --
9 the methodologies used as part of the -- the
10 NDRP. And I guess my question for SC&A is
11 whether -- if we leave aside the -- their
12 careful wording that they used in the
13 supplemental report, if SC&A has in fact
14 concluded that the NDRP is not accurate and
15 reliable.

16 **DR. ZIEMER:** We can have SC&A respond, or Mark,
17 did your group address that question in terms
18 of the SC&A report?

19 **MR. GRIFFON:** (Off microphone) (Unintelligible)

20 **MS. MUNN:** (Off microphone) (Unintelligible)
21 take that.

22 **DR. ZIEMER:** Arjun?

23 **DR. MAKHIJANI:** (Off microphone)

24 (Unintelligible) couple of slides

25 (unintelligible) (on microphone) the table that

1 might help.

2 **DR. WADE:** We don't really have time.

3 **DR. MAKHIJANI:** You don't have time?

4 **DR. ZIEMER:** We're kind of pressed for time,
5 but can -- can you summarize --

6 **DR. MAKHIJANI:** I can give you an or--

7 **DR. ZIEMER:** -- very quickly what --

8 **DR. MAKHIJANI:** Yes, I can give you an oral
9 report. The NDRP had several components. One
10 was to gather up nearly 90,000 badges that
11 Brant has talked -- Dr. Ulsh has talked about
12 and reread them. There was a process for doing
13 that. And the other was to calculate doses for
14 people who were not monitored for extended
15 periods of time, like a whole year or large
16 fraction of a year. They were called notional
17 doses. And then the third involved badges that
18 were never found and so could not be reread.
19 Let me start with the notional doses first,
20 people who were not monitored. The NDRP used
21 the gamma badge data, neutron-to-photon ratios
22 that have been talked about, by building -- so
23 they calculated average ratios for buildings --
24 and then applied them to the gamma dose. And
25 when we investigated this we found that it

1 might be okay for saying what happened to the
2 population in the building, but that would not
3 be accurate to calculate an individual dose on
4 that basis. And in fact, the NDRP itself
5 concluded that the notional dose estimate
6 should be considered somewhat speculative and
7 the variance estimate should be considered
8 quite approximate. And this applied to periods
9 when there were large gaps. There were
10 instances when there were no building data for
11 the whole year and for the whole building, or
12 nearly no data, and this applied to the SEC you
13 voted on last time, in much of that period, and
14 also to Building 76 and 77 in the early '60s.
15 And for that the NDRP itself concluded -- so
16 what I'm saying is our conclusion was much like
17 the scientific staff of the NDRP, not their
18 advisory board which has been quoted, but their
19 scientific staff report said that for
20 building/year combinations in which neutron
21 films are not available -- that's for the year
22 -- for the whole year, the notional doses are
23 highly speculative. So obviously in -- in
24 those cases the NDRP cannot form the basis of
25 individual dose estimates that would be with

1 sufficient accuracy, in my opinion.

2 For the badges that were not found, there are a
3 number of different problems. In order to be
4 brief I'll just focus on the later period, '68
5 to '70 or '69 to '70, when the badges were
6 deliberately not archived. Some reasons have
7 been presented, but we were not able to find a
8 satisfactory reason why the badges were not
9 archived. Or in more simple terms, thrown
10 away.

11 The main problem with these badges not being
12 thrown away is that from -- starting from --
13 being thrown away or not being archived, is
14 that starting in 1967 a new policy of reading
15 neutron badges was instituted because it was
16 found that the workload of reading all the
17 badges was far too high and there weren't
18 enough technicians to do that job. And so only
19 some of the badges of people considered to be
20 at higher risk were read, and the rest of the
21 badges were not read. And instead of the badge
22 being read, a calculated dose was entered based
23 on an estimated neutron-to-photon ratio that
24 was shown by later work in the NDRP to be
25 generally, in our view, not correct. So

1 there's a real data integrity problem with the
2 1968 to 1970 data because very large number of
3 -- a fraction of those badges were not
4 recovered and not reread, and the data record
5 is actually a mixture of these calculated
6 doses, most of which -- or many of which would
7 be wrong, together with originally doses that
8 were read at the time.

9 The significance of that for the present
10 situation is that NIOSH has proposed to use a
11 correction factor based on all of the 87,000
12 badges that were reread of 6.95, but if you
13 look at the affected workers, 200-and-odd in
14 '68, 200-and-odd in '69 and 1,700-plus in 1970,
15 the correction factors are actually all over
16 the map and vary from .22 to 220. That is,
17 they vary by a factor of thousand -- one
18 thousand, and they bear little or no
19 correlation to the -- the reread dose, so you
20 don't know what correction factor to apply to
21 any particular amount of mis-- gaps where the
22 badges were not recovered. You could apply .2,
23 you could apply .5, so in the one specific
24 instance I can give you -- so there was a 20-
25 millirem original badge dose that was not

1 found, and you could calculate a 10-millirem
2 dose using a correction factor of .5; you could
3 calculate 20 millirem using the correction
4 factor of -- 16 millirem using the correction -
5 - 20 times seven, 140 millirem using the
6 correction factor proposed by NIOSH, and 20
7 times 200, or 4,000 millirem using one of the
8 correction factors that's plausible from the
9 table.

10 The -- finally the question of the rereading of
11 the badges and the statistical corroboration of
12 the re-readings, the NDRP had an elaborate
13 process of trying to check the accuracy of the
14 rereading. This turned out to be a big issue
15 because individual readers were generally found
16 to have significant errors in their rereading,
17 even in the NDRP, and there they were daily
18 checked for the accuracy of their readings and
19 validation of their readings, but as Dr.
20 Griffon (sic) mentioned yesterday, there was
21 one reader who was the gold standard and he --
22 as consultant to ORAU, Roger Falk described
23 himself as the gold standard -- and the
24 accuracy of his reading was never checked. So
25 in a normal independent evaluation, the -- the

1 rereading that was done of the badges would be
2 in question because all of the -- all of the
3 readers had correction factors that were
4 necessary to their reading, with a master
5 reader whose correction was never -- whose --
6 so to that -- to the extent that the NDRP
7 reread doses are the foundation of the neutron
8 dose reconstruction project, that would remain
9 --

10 **DR. ZIEMER:** I believe --

11 **DR. MAKHIJANI:** -- in question.

12 **DR. ZIEMER:** -- the working group has been
13 quite aware of this and has looked at these
14 issues, as well. Is that correct, Mark? Yes.
15 David, do you have a final question?

16 **MR. HILLER:** I do have one other question, and
17 that relates to the -- the timing of the
18 process going forward. It's -- it's my
19 understanding that -- that NIOSH has proposed,
20 and I -- I'm not quite sure if the workgroup
21 has accepted or is going to recommend to the
22 Board for acceptance some changes to the
23 methodology that will require recalculation of
24 neutron doses and maybe other radionuclide
25 doses as a result of the discussion that -- and

1 the analysis of SC&A that Dr. Makhijani just
2 described. And -- and I -- I am wondering if -
3 - in SC&A report, the suggestion was that there
4 is no estimate as to how long it will take to -
5 - to conduct that -- those recalculations, so
6 my question is to -- to NIOSH whether in fact
7 they have analyzed how long it will take to
8 conduct whatever reconstructions they are
9 proposing, whether they have the staff to do
10 that at the present time, so that we know
11 whether we're looking at a period of three
12 months or six months or another year before
13 these doses are calculated.

14 **DR. ZIEMER:** Let me suggest that NIOSH wait to
15 answer that till they determine whether the
16 Board is proposing any such thing to them.

17 **MR. HILLER:** Fair enough. I -- I would just
18 urge -- in light of the fact that timeliness
19 remains an important issue --

20 **DR. ZIEMER:** Yes, understood.

21 **MR. HILLER:** -- that that's considered.

22 **DR. ZIEMER:** Right.

23 **MR. HILLER:** Thank you, Dr. Ziemer.

24 **DR. ZIEMER:** Board members, other comments?

25 Yes, Mark.

1 **MR. GRIFFON:** I just wanted to -- I -- I think
2 we might want -- it might be useful to have a
3 follow-up from -- from NIOSH on -- and I -- I'd
4 like maybe just the narrow question of the '67
5 through '70 with the zeroes and the correction
6 factor approaches and I -- I know you've looked
7 into this quite a bit, so I -- I think we need
8 to hear response on that.

9 **DR. ZIEMER:** Right, okay.

10 **DR. ULSH:** I can tell you that the NDRP --
11 well, the situation that Dr. Makhijani
12 described I think is accurate at the time the
13 badges were read in that time period. The
14 NDRP, when they went back and they reacquired
15 all of those neutron films, they reread them at
16 the time. Now, Arjun is correct that there are
17 a higher fraction of those original films that
18 were not able to be reread in that time period,
19 in that later time period. We also know that
20 we can identify which of the films were
21 actually read originally and which ones were
22 based on the ratio that Arjun described. The
23 worksheets that you fill out when you do the --
24 the reads are different. They're going to be
25 blank. And so we know which ones are which.

1 And I also have to comment on the point that
2 was made about the individual readers, and the
3 reason I have to comment on that is because I
4 don't think the description was complete. It
5 is true that there was a senior reader who was
6 considered the gold standard. However, his
7 readings -- he was simply the normalizer. All
8 of the other readers were compared to him, and
9 his readings were compared to a calibration set
10 of films of known -- films that had received a
11 known dose. And so he was -- his readings were
12 compared to those calibration films. So it's
13 not as if it was just blind faith that they
14 just accepted that his readings were right.

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

16 **MR. GRIFFON:** Just -- just a --

17 **DR. ZIEMER:** Mark.

18 **MR. GRIFFON:** -- Brant, just a follow-up on
19 that, just for clarification. The -- part of
20 what I was questioning yesterday was you have -
21 - for '67 through '70 you have this question of
22 -- in some cases, and Arjun mentioned the
23 archiving -- when these -- the policy in that
24 time period, I'm not sure exactly when it
25 started or stopped -- or when it started, but

1 the policy was to not necessarily keep the
2 films, but in all those cases you have these
3 worksheets. Is that what you're telling us?

4 **DR. ULSH:** Let me tell you again what the
5 policy change was.

6 **MR. GRIFFON:** Yeah.

7 **DR. ULSH:** I think Arjun alluded to it. The
8 AEC, before they made this decision, considered
9 the official dose record to be the NTA film
10 itself. Then they changed their policy and
11 made the official dose record the worksheet
12 that was created when the films were read, and
13 therefore the site was no longer required to
14 archive the films. So to answer your question,
15 Mark, yes, we have the worksheets that were
16 created when those films were read.

17 Now you asked me in every single case. Well,
18 there are a lot of them, I can tell you that --

19 **MR. GRIFFON:** But you have the -- you have the
20 worksheets --

21 **DR. ULSH:** Yes.

22 **MR. GRIFFON:** -- in gen-- and -- and I guess
23 the other important thing that I heard, which
24 we did examine on the workgroup, was that
25 during that time period actually -- at least --

1 I'm not sure if it's the end of '66 or early
2 '67, we definitely saw a point where the most
3 highly-exposed workers, to neutron exposures,
4 were monitored -- had measured data and not the
5 notional data. And I think -- you know, the --
6 the approach was to basically -- the non-
7 measured badges that we're talking about for
8 the most part were -- and I -- and I -- and we
9 looked at this at the workgroup and it was
10 confirmed that the highest likely exposed were
11 monitored in that time frame, so I think that's
12 an important consideration in discussing this
13 time period, too.

14 **DR. ZIEMER:** Okay. Thank you, Mark.

15 **MR. GRIFFON:** Wasn't a question there, just a -
16 -

17 **DR. MAKHIJANI:** (Off microphone)

18 (Unintelligible) the record -- (on microphone)
19 I just wanted the record to be correct about
20 what I said in relation to the master gold
21 standard reader. I said that there was no
22 independent verification, and he himself has
23 said that I was right about that, there was no
24 independent verification. What he has said is
25 documented in the SC&A report of April 30,

1 which you have. His calibration was done by
2 his rereading calibration badges that he
3 himself had prepared and in the '60s at least
4 knew the readings of and said that he had
5 disciplined himself to not remember those
6 readings -- that's not a quote, it's a
7 paraphrase, but I believe it's pretty accurate
8 -- so that under a normal procedure or
9 validation of an -- of a very large multi-
10 million-dollar exercise of 90,000 badges, it
11 would be expected that an independent
12 validation of one person who was the master
13 reader would have been conducted.

14 A second point also should be clear for the
15 record, which is that Roger Falk told us as a
16 consultant to ORAU, which is why I'm allowed to
17 say his name in that context, that the AEC
18 required the non-- did not require the
19 archiving of TLDs once TLDs were introduced,
20 and that was not until 1971 -- this is also in
21 the interview. We were -- and this is in our
22 report. We were not able to find a good reason
23 why the badges that were still NTA badges were
24 not archived for the period when the policy
25 change to paper records was supposed to have

1 gone into effect when TLDs were introduced,
2 according to Roger Falk, all -- I believe that
3 I've accurately represented what is in the
4 reports and I just wanted the Board to be aware
5 of what is in the SC&A reports. Thank you.

6 **DR. ZIEMER:** Thank you. Okay. Board members,
7 do you have any further questions for --

8 **UNIDENTIFIED:** (From the audience and off
9 microphone) I've got a question for you.

10 **DR. ZIEMER:** Okay, we need to make it quickly.

11 **UNIDENTIFIED:** Well, I'm a little confused with
12 NIOSH's saying about the reconstruction and the
13 doses on the TLDs that were zeroes or didn't
14 have reading. Now what about the TLDs from
15 when they started to closure that came back as
16 zeroes and they should have information on
17 them, are they go-- 'cause you can't re-
18 evaluate those 'cause those are only a one-time
19 read, so how are they going to address people's
20 TLDs that came back with no data available,
21 what number are they going to assign those
22 people in reconstruction?

23 **DR. ZIEMER:** Well, I think we're just referring
24 to the film badges here, not to the TLDs.

25 **UNIDENTIFIED:** Well, 'cause we've had TLDs in

1 the past that come up no data available, but
2 yet the person sitting next to you or working
3 in the same job, he's got data, so how they
4 going to evaluate that? That's the same --
5 that's the same thing going on with the film
6 badges -- the same thing.

7 **DR. ZIEMER:** Well, that's -- that's an
8 individual case. You take that case-by-case, I
9 assume.

10 **MR. GRIFFON:** But -- but they have approaches -
11 - maybe -- maybe Brant can just say quickly,
12 you know, you do have approaches and we -- we
13 have discussed this on the workgroup.

14 **DR. ZIEMER:** Yeah.

15 **DR. ULSH:** Yes, we have, we've discussed --
16 first of all, we're mixing a couple of issues
17 here. The no data available was a concern that
18 was expressed -- I think it was a matter of
19 great concern for the workers, and we
20 investigated it under the data integrity effort
21 that the working group looked at, and the
22 explanation for it is this, and I'll try to
23 make this quick, as Mark requested.

24 The dosimetry department issued supervisor
25 reports to the supervisors and, during some

1 time periods at least, the workers -- you know,
2 those were posted and the workers could see
3 them. Due to workload, sometimes those reports
4 themselves showed NDA, or no data available.
5 That is not the same as a zero. What that
6 meant was that by the time the report had to be
7 issued, they hadn't been able to read the
8 dosimeter yet. But we checked. We looked for
9 individual cases where there was a no data
10 available in the supervisor reports. We went
11 back to the individual worker radiation file
12 and we verified that those badge were read
13 after that report and they -- the entry was put
14 into the worker's radiation file.

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

16 **UNIDENTIFIED:** But what if it's invalid?

17 **DR. ZIEMER:** Well --

18 **UNIDENTIFIED:** How are you going to...

19 **DR. ULSH:** Well --

20 **UNIDENTIFIED:** (Off microphone)

21 (Unintelligible) those?

22 **DR. ULSH:** -- you're right, the TLDs are a one-
23 time read, because when they read them it
24 resets them --

25 **UNIDENTIFIED:** Right.

1 **DR. ULSH:** -- and so that is entirely correct.
2 We have no indication that -- that there was a
3 systematic problem with TLDs like there was
4 with the NTA films. The NDRP covered the NTA
5 films.

6 **UNIDENTIFIED:** There was, constantly.

7 **DR. ZIEMER:** Okay. Mark, do you have any other
8 comments from the workgroup, or is the
9 workgroup prepared to make any recommendations
10 to this Board?

11 **UNIDENTIFIED:** (Off microphone) And I have
12 (unintelligible) --

13 **MR. GRIFFON:** I -- I -- I just think we might
14 want one more response from NIOSH --

15 **DR. ZIEMER:** Okay.

16 **MR. GRIFFON:** -- on the independent verifica--
17 you know, the -- the question of the gold
18 standard and the reading of the NDRP films -- I
19 mean...

20 **DR. ZIEMER:** Okay, we'll hear from -- a
21 gentleman have a comment first?

22 **MR. HERRAN:** Yeah -- yes, my name's James
23 Herran. You know, all this stuff you talk
24 about, I lived it. Roger Falk is the guy that
25 was in charge when I filed that complaint 35

1 years ago that the film badges were wrong. My
2 film badge showed 50 percent of the gamma for
3 the neutron. In other words, it should have
4 been ten times higher. It was half of what it
5 should have been. Falk was in charge. I know
6 these guys -- like Bistline. I know him. All
7 you talk about this stuff like the 233, I was
8 there. The first criticality test, I was
9 there. The fire, I was there. All this stuff.
10 You know, it seems like what we're doing here
11 is we're generating some big high salaries for
12 people that know big words. In the meantime,
13 these people are dying. I think your
14 priorities are wrong. I think it's time we did
15 something where we said hey, let's put the
16 priority where it belongs. We're spending more
17 money doing this and talking with big words --
18 I think if you put the money where it belongs,
19 there are -- these people worked hard. They
20 did a damned difficult job in a difficult
21 situation and sometimes they did it on -- they
22 winged it, because they had -- there was nobody
23 to tell you something. Like when I learned
24 stuff, I went out and learned it -- you had to
25 learn it on the job, or you tried to grab this

1 here or that there and you put it together
2 because there was nobody there to stand over
3 you.

4 You know, it's funny, I never saw any DOE guy
5 in the area with me, or AEC people. They
6 weren't there. You know why? They stayed up
7 on the hill where it was safe. I think the
8 priority is wrong. I think it's time to say
9 hey, listen, folks, put the money where it
10 belongs. These are the people that are dying.
11 Those are the ones that did the work. Take
12 care of them.

13 **DR. ZIEMER:** Thank you.

14 **MR. HERRAN:** Put the priority where it belongs.

15 **DR. ZIEMER:** Okay, is there someone from NIOSH
16 that could address Mark's question?

17 **DR. NETON:** Yeah, this is Jim Neton. I would
18 like to address this issue of the -- of one
19 person being the gold standard doing the
20 calibrations. I've -- I've been involved in
21 probably 25, 30 years of calibrating
22 instruments in my career, specifically
23 radiation instruments, and I -- I don't -- I
24 don't find the argument that -- that -- the
25 first part of the argument that SC&A rings very

1 true in the sense that if one person calibrates
2 the instrument, they do it their way and they
3 develop a ratio between their reading and what
4 the standards measure. Now a different person
5 could get a very different calibration factor,
6 but the point is as long as you apply that
7 calibration factor consistently across the
8 board, you'll get the right answer every time.
9 So it really in my mind is not relevant that a
10 different person didn't establish the
11 calibration of the -- of the technique.
12 Now I will agree that Roger made the -- Roger
13 Falk made the standards and it's not double
14 blind. That may have some merit. But the fact
15 that it was not independently calibrated is --
16 is not inconsistent with the way that many
17 readers are calibrated in general.

18 **DR. ZIEMER:** Uh-huh. Okay, thank you. Mark,
19 additional questions?

20 Wanda Munn?

21 **MS. MUNN:** Just the observation -- a couple of
22 observations, one with respect to the issue at
23 -- at -- of concern right now. Although one
24 might not consider that an individual's work
25 was being peer-reviewed at the time, that

1 doesn't change the fact that if his standard is
2 the one that all of the others were having to
3 test to every single day when they went to
4 work, then you're getting multiple individuals
5 essentially verifying the same standard day
6 after day after day, simply because that was
7 the standard they had to meet. So it's
8 difficult to say that that was not in fact the
9 case.

10 One other quick comment about concerns that
11 have been expressed very passionately here
12 about how long this process has taken with
13 respect to your claims. It would be helpful if
14 you understood that most of the delays that
15 you're concerned with are not on the heads of
16 the people that you've charged them with
17 delaying. It's on the head of this Board's
18 working group, of which I am a member. The
19 reason these delays have taken place is because
20 our contractor brought to us a long laundry
21 list of very detailed concerns that you had
22 brought forward and that they perceived might
23 be problems with what they were seeing. And
24 this group went through every possible activity
25 that we could think of to examine each one of

1 those in painful detail. Nothing was
2 overlooked. This was not the result of the
3 agency. It was the result of the fact that
4 this working group kept saying if this has some
5 problem with it, is there any legitimate way
6 you can approach it and still be accurate, and
7 so the agency said yes, there is indeed another
8 way to look at it and still be accurate and
9 they've done that. And that's why you see all
10 of the detailed procedures that were -- you
11 were concerned with evolving after your claim
12 was brought to us. It's because we looked very
13 closely at how things could be done, how they
14 should be done, and the procedures were in many
15 cases produced to address exactly those
16 concerns. So yes, it's been a long time. It's
17 been painful for everybody. But those of us
18 who were involved in the working group need to
19 take responsibility for much of that delay, and
20 it's because we felt we were doing so on your
21 behalf.

22 **DR. ZIEMER:** Okay. Thank you, Wanda. Other
23 Board members, comments at this time? Mark?

24 **MR. GRIFFON:** I -- I just wanted to -- I think
25 one -- one more point that we need maybe NIOSH

1 to respond on, as far as the three issues that
2 we've been discussing, the follow-up iss--
3 actions from the Board from the previous
4 meeting, the 881 building and whether we can --
5 whether the coworker approach adequately bounds
6 the earlier -- early period photon doses and --
7 and shallow doses, but photon doses, and I -- I
8 think the only clarification that I wanted as a
9 workgroup member was a little bit more on the
10 question of whether the operations in '60 and
11 '61 when you do have data, I think compared to
12 pre-'60 when you -- when you don't have data,
13 whether the operations were comparable or if --
14 if changes were made, they -- they wouldn't
15 affect the doses significantly. We saw factors
16 of four or five in the difference in doses, the
17 coworker model assigning higher than '60/'61,
18 but I just want to be reassured that any
19 changes -- or that there weren't any
20 significant operational changes that may
21 negatively affect our analysis on this, so...

22 **DR. ULSH:** Right, Mark. Yesterday I talked
23 about the fact that we know that there were
24 some changes that occurred, specifically I
25 talked about the one in -- around the 1957 time

1 frame when they added to the machining
2 capability in that building. That certainly
3 happened. But what we expect is, because of
4 the new pit design, that that increased the
5 amount of enriched uranium and the machining
6 that would be required. So if anything, you
7 would expect the dose to go up, and that would
8 be reflected in the 1960 and '61 dosimetry.
9 Similarly with other processes, yes, there
10 could have been other processes -- process
11 changes. We know that there were not
12 significant shielding improvements during that
13 particular time period that would depress those
14 later doses. We know that that didn't happen.
15 So the crux of our reasoning on this issue was
16 that the coworker models that we have exceeded
17 even the maximally exposed individual by such a
18 large margin that sure, the doses might have
19 been a little bit higher in the '50s, but not -
20 - it's just not plausible to say that they
21 would have been so much higher at the same time
22 that they were judged to have an exposure
23 potential of less than ten percent of the
24 regulatory limit. Keep in mind that that was
25 why they were not monitored at the time. It's

1 just not plausible that they would have been so
2 much higher that they would have exceeded that
3 large margin of error in our coworker models --
4 large margin of safety in the coworker models.

5 **MR. GRIFFON:** And -- and did you -- and I --
6 I'm trying to re-- I don't remember, quite
7 frankly. I know that SC&A also I -- I think
8 identified some operational changes in that
9 period. Have you -- and maybe I have to
10 (unintelligible) SC&A to the -- to the podium,
11 but you know, I -- I'm not sure if SC&A
12 identified any operational changes that they
13 feel might have negatively affected this
14 approach. SC&A, can you...

15 **DR. MAKHIJANI:** Yeah, we -- we looked at the
16 question of changes and the engineering history
17 of Rocky Flats actually identifies a number of
18 very substantial changes in Building 81 in the
19 late '50s and early '60s. The nature of some
20 of these changes including in the chemical
21 process and the way things were handled and so
22 on, beyond the pit design. Some of them at
23 least are mentioned in the report that we just
24 submitted to you, and it was for that reason we
25 felt -- and -- and we did not find any

1 investigation of these changes in the NIOSH May
2 17th report in terms of validation of the
3 coworker model doses relative to what might
4 have been. And since the early period -- the
5 early period equipment, if I'm remembering
6 correctly, and designs generally related to the
7 Manhattan Project era and the changes that
8 occurred from the mid-'50s onward, late '50s
9 onward, were reflective of the experience, at
10 least a priori it -- we felt it cannot be
11 assumed that you could use 1960s data as a way
12 of saying the coworker model is a lot more than
13 1960s data, therefore it's okay, because the
14 production processes look to have been -- at
15 least in some cases -- substantially different.

16 **MR. GRIFFON:** And -- and do you have -- I -- I
17 know it's probably in your report, but for the
18 record, do you have example of this --

19 **DR. MAKHIJANI:** Yes, I'll have to --

20 **MR. GRIFFON:** -- significant change --

21 **DR. MAKHIJANI:** I'll have to --

22 **MR. GRIFFON:** Okay.

23 **DR. MAKHIJANI:** Let me just find it and then
24 I'll bring up --

25 **MR. GRIFFON:** All right.

1 **DR. MAKHIJANI:** -- the page and quote it for
2 you.

3 **DR. ZIEMER:** John Mauro's approaching, maybe he
4 wants to add to that or -- John.

5 **DR. MAURO:** Yes, along those lines -- one of
6 the -- Brant gave a presentation regarding the
7 birdcages. Now if I cor-- if I understood it
8 correctly, this is -- the argument was that
9 well, really the worst scenario one could
10 envision is you have this enriched uranium
11 sitting in a birdcage which is specifically
12 designed to pre-- prevent criticality, and you
13 really couldn't have more material closer
14 together without running into a criticality
15 situation. Now I found that -- we -- we were
16 not awa-- we had -- that was the first time
17 we've seen that. And I just want to -- I guess
18 -- am I correct -- I guess this is posing this
19 question to -- to Brant -- that when that
20 analysis was done, it's my understanding that
21 it's being representated (sic) at -- as a
22 scenario that places an upper bound. You
23 really can't have an external exposure scenario
24 worse than having a person one foot away from
25 this five-by-five birdcage I guess for 2,000

1 hours per year. And I guess if -- this the
2 first I heard it and I found it very
3 compelling, and I'd like to hear a little bit
4 more about that.

5 **DR. ZIEMER:** All right, Brant is approaching.

6 **DR. ULSH:** Actually what that was, John -- I --
7 I don't recall -- we didn't do that originally
8 for Rocky Flats. It was just an analysis that
9 was performed at one of the -- in one of the
10 other TBDs. To be honest with you, I can't
11 even remember which one it was and I certainly
12 don't know if it's on the list that you guys
13 have reviewed yet.

14 **UNIDENTIFIED:** (Off microphone)

15 (Unintelligible)

16 **DR. ULSH:** Okay, that's -- that's where I
17 pulled it from.

18 **DR. MAURO:** Yeah, you ge-- so -- my question
19 really goes toward -- I am familiar with that
20 analysis and -- but basically what I'm hearing
21 is that that analysis and the dose rates that
22 were observed from running those calculations -
23 - and we did check those calculations at that
24 other site, might have been Huntington, I'm not
25 quite sure; it was one of the AWEs, but you --

1 but that's one of the reasons you feel
2 comfortable that the coworker model that you've
3 constructed, notwithstanding the changes in
4 design that we have been talking about, you're
5 saying that notwithstanding those changes in
6 design, you feel that since the coworker model
7 comes up with external doses that are higher
8 than what you would experience by being one
9 foot away from this birdcage, that gives you a
10 sense of confidence that the coworker model
11 will serve the process well.

12 **DR. ULSH:** Yeah, you've accurately stated it,
13 John. I'm not saying that this represents a
14 situation that actually existed at Rocky Flats.
15 It was presented merely to give some
16 perspective on how much higher could it have
17 been. And the details of that analysis were a
18 five-by-five array of birdcages, a person
19 spends 2,000 hours a year one foot from it.
20 Now did that actually happen? No, it didn't.
21 But it's meant to be a bounding analysis just
22 to give you an idea of the magnitude of an
23 increase that we could be looking at. And
24 you've got to understand, as I mentioned and
25 John mentioned, we're talking about fissile

1 material here and so criticality concerns are
2 very serious, as you all know. And that's --
3 that -- you can't have more material really
4 than that scenario presents because you would
5 get into trouble with criticality. So -- so
6 your description, John, was accurate in what we
7 were trying to demonstrate with that.

8 **DR. ZIEMER:** Arjun, did you have a follow-up on
9 your previous comment?

10 **DR. MAKHIJANI:** Yes, I have -- I have quotes
11 from the -- our report. They're on pages 25
12 and 26 of the report where it does say that the
13 initial processes at Rocky Flats were based on
14 World War II processes that were then
15 immediately after refined at -- at Los Alamos
16 and Y-12 before the construction of the Rocky
17 Flats plant, and that's what was operated
18 initially -- I'm paraphrasing -- and that the
19 dissolution, precipitation and calcination
20 processes were originally performed as batch
21 processes. By the late 1950s to early 1960s
22 the processes became one continuous operation,
23 so that's the first sort of major change. The
24 orange oxides were converted to uranium
25 tetrafluoride, a green salt. The conversion

1 was conver-- conducted by placing the orange
2 oxides into Monel, copper/nickel alloy,
3 containers, heating to reduce the compound and
4 adding anhydrous hydrogen fluoride. The green
5 salt -- et cetera, and then it describes how
6 these changes came about, and this is all from
7 the Rocky Flats engineering history. Plant
8 personnel contributed many unique improvements
9 to enriched uranium recovery processes.
10 Improvements were made to the continuous
11 dissolution processes of the following
12 materials: sand and slag from foundry
13 operations and skull oxide material recovered
14 from foundry crucibles. Improvements were made
15 in other continuous processes for peroxide
16 precipitation, calcining of uranium peroxide
17 and leeching of powdered solids. Site
18 personnel developed improved processes for
19 graphite incineration, (unintelligible) parts
20 decontamination and achieved a 15 kilogram
21 scale reduction of uranium tetrafluoride to
22 metal. So as you can see, the -- the changes
23 in the operations in -- in Building 81 were ec-
24 - extensive and -- and basic to the way they
25 did business over there. The health physics

1 implications of this are -- are not known
2 because -- because as -- as NIOSH has stated,
3 Building 81 workers were not monitored during
4 the 1980s and this was one of the things that
5 we discovered through our data completeness
6 evaluation and also through what NIOSH has
7 stated. Thank you.

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

9 **MS. MUNN:** Mark?

10 **DR. ZIEMER:** Mark, I'd like to --

11 **MR. GRIFFON:** Just -- just to follow up on
12 that, that was in '59, Arjun? I think --

13 **UNIDENTIFIED:** (Off microphone)
14 (Unintelligible)

15 **MR. GRIFFON:** I'm sorry.

16 **DR. MAKHIJANI:** (Off microphone) Late '50s and
17 early --

18 **DR. ZIEMER:** Use the mike, Arjun, please.

19 **UNIDENTIFIED:** Excuse me --

20 **DR. ZIEMER:** Hold on, sir.

21 **UNIDENTIFIED:** Oh, excuse me, sir.

22 **DR. MAKHIJANI:** This happened in the late '50s
23 and early '60s, and the data that we're talking
24 about in terms of the first monitoring was from
25 the last quarter of 1960 and the whole year of

1 1961.

2 **MR. GRIFFON:** Thank you.

3 **DR. ZIEMER:** Sir, do you have a question?

4 **MR. SABA:** Yes, sir, my name is Phil Saba. I
5 was a machinist in 81 building. I started
6 there in 1957, and I was there until they
7 closed the building down -- or the production
8 down to send to Oak Ridge. Okay, the birdcages
9 were used in the hot area in 76 and 77
10 building. Okay. In 81 building the parts
11 ranged from eight-inch diameter to 12-inch
12 diameter, and they were set on a cart out in
13 the open. We washed the parts in car-- in
14 percolene and, like I said, you know, the carts
15 were -- the parts were in open area so there
16 was no birdcages in 81 building.

17 **DR. ZIEMER:** Okay, thank you. Okay, Mark.

18 **MS. MUNN:** Please. Please, Mark.

19 **MR. GRIFFON:** I -- I -- this is a question
20 again to NIOSH, just to clarify for the record
21 for us, I -- following up on -- on Jennifer's
22 presentation, the -- and -- and this -- this
23 was new news to us, as well, but the 881
24 subcritical experiments and I know you
25 mentioned two individuals and my -- my sense is

1 similar to -- to what the petitioner presented,
2 which is that likely these were the two leads,
3 but you -- you must have had some support
4 personnel, so I wonder if -- if NIOSH -- you
5 know, it's the question of whether this
6 building is included as a neutron building and
7 to what extent we can identify who within that
8 building is likely a -- a -- you know, a
9 candidate for neutron ex-- or had potential for
10 neutron exposure, and I -- I would -- I would
11 expect it might be a little wider of a
12 population than two, but I -- I -- you know, I
13 just want to understand more how NIOSH is going
14 to make -- make that determination.

15 **UNIDENTIFIED:** (Off microphone) Don't they have
16 (unintelligible) in the trunk?

17 **DR. ULSH:** Okay, this question came up -- was
18 brought up by SC&A, and the source that they
19 quoted was the -- it was called a "Technically
20 Useful History of the Critical Mass Laboratory
21 at Rocky Flats," I believe, or pretty close to
22 that. And I pulled that same document and
23 looked at it, and -- okay, I'm going to delete
24 the names here for Privacy Act considerations,
25 but to quote directly from it, it says

1 (reading) A bright and innovative young man
2 named -- and it gives his name -- was hired
3 away from -- again, I -- I want to be very
4 careful --

5 **MR. GRIFFON:** Yeah.

6 **DR. ULSH:** -- for Privacy Act information, but
7 he was hired away from another facility. His
8 task was to establish some form of criticality
9 safety at the fledgling facility. Soon after
10 arrival he hired another scientist -- it gives
11 his name -- to assist him, and here is the key
12 part -- these two provided the entire
13 criticality safety program at Rocky Flats
14 throughout the rest of the first -- that first
15 decade, the 1950s. That's quoting directly
16 from the report that --

17 **MR. GRIFFON:** Yeah.

18 **DR. ULSH:** -- formed the reference that NIOSH -
19 - that SC&A quoted. Later on they hired more
20 people. For many years the entire nuclear
21 safety group consisted of only 14 persons, but
22 that was later on, into the '60s.

23 Okay, here's another quote from the -- that
24 same report. (Reading) Prior to constructing
25 the CML, that's the Critical Mass Laboratory,

1 persons performing in situ experiments were the
2 same ones evaluating criticality safety
3 throughout the plant. The same ones.

4 **MR. GRIFFON:** Right.

5 **DR. ULSH:** And there were two -- at least
6 according to this report.

7 **MR. GRIFFON:** Yeah. But I -- I guess -- do we
8 have any further indication of where -- within
9 881 was it a certain designated area all the
10 time? Was it in various areas? Do we know any
11 --

12 **DR. ULSH:** No, I don't --

13 **MR. GRIFFON:** -- mention anything like that?

14 **DR. ULSH:** I don't --

15 **MR. GRIFFON:** 'Cause I would argue that if
16 someone says that they were in that building
17 and worked, you know, in that certain room or -
18 - or area, I -- I would think -- and I would
19 hope that DOL's determination would be to
20 presume they were exposed to neutrons rather
21 than make the individuals prove that they were
22 one of those two, you know.

23 **DR. ZIEMER:** Or even if they weren't part of
24 that group --

25 **MR. GRIFFON:** Yeah, so I --

1 **DR. ZIEMER:** -- if they were in the area.

2 **MR. GRIFFON:** Well, I -- I understand these two
3 were likely in charge of the experiments, but I
4 -- I would imagine that they might have had,
5 you know, setups and things like that, or
6 stand-by people in case of a -- an accident, an
7 incident or whatever, I -- I don't --

8 **DR. ULSH:** Okay.

9 **MR. GRIFFON:** -- you know.

10 **DR. ULSH:** A couple of other facts about these
11 in situ experiments, because they were also
12 done at Lawrence Livermore and I talked to a
13 guy who did them there. He said yeah, we did
14 similar types of things as they did at -- at
15 Rocky. These are not big, enormous
16 experiments, Mark. I mean they're putting
17 together components, pieces, stacking them up
18 in different configurations and they're very
19 carefully monitoring the amount of neutrons
20 that come off of them. And what I was told is
21 -- I mean you've got to understand that as you
22 approach criticality, it's not like once you
23 hit critical geometry you use this much and if
24 you only go -- have half that much, then you
25 have half the number of neutrons. It's not

1 like that. It's like flicking a switch --

2 **DR. ZIEMER:** Exponential.

3 **DR. ULSH:** -- because of exponential --

4 **DR. ZIEMER:** Uh-huh.

5 **DR. ULSH:** Exactly. So what I'm saying is that
6 they always -- and that's described in this
7 report. They always kept the neutron dose, the
8 amount of neutrons, neutron flux coming off of
9 these experiments to a very, very low level.
10 It was characterized to me as they could barely
11 even detect them they were so low. And the
12 quote that SC&A pulled out from this same
13 report -- which I can't find right now on the
14 spot -- also talked about for safety
15 considerations or something like that -- this
16 is my loose paraphrase -- they always did this
17 off-shift, when other people weren't around,
18 for exactly these reasons. That's what it says
19 in this -- this report, because of -- you know,
20 I mean you don't want to exp-- put more people
21 at risk than absolutely necessary.

22 **MR. GRIFFON:** No, I --

23 **DR. ULSH:** Now all I can do is rely on this
24 report right here and what it says in that
25 report. I'll -- I'll let you evaluate the --

1 the merits of what -- what it says.

2 **DR. ZIEMER:** A question?

3 **MR. DEMAIORI:** Yes, I'd like to extrapolate a
4 little bit on what NIOSH has articulated as far
5 as the amount of individuals that would be
6 required to do this. That's -- the building
7 would have to have a minimum of two SOEs just
8 to operate the building air. That's -- there's
9 no experiments that could possibly take place
10 that -- where they would abandon the minimum
11 staffing of the facility. That's -- they would
12 also have to have rad techs. That's absolute.
13 That's your minimum, your safety envelope, your
14 SOEs, your rad techs. You'd have to have
15 security, special nuclear material. That's --
16 you'd have to have material control people,
17 special nuclear material, access in and out of
18 the vaults. That's true enough, that's --
19 anybody within reason would -- would do it on
20 an off-shift to reduce the number of building
21 personnel day to day. That's -- however, to --
22 to make the assumption from a report that a
23 building was evacuated -- that's on a second
24 shift or a third shift -- completely of
25 personnel is absurd. That's -- it would have

1 been very unsafe.

2 **DR. ZIEMER:** Yeah, thank you for clarifying
3 that, it (unintelligible) to make sense.

4 **MR. GRIFFON:** All right, I think I --

5 **DR. ZIEMER:** Further comments or questions?

6 **MS. MUNN:** (Off microphone) Please
7 (unintelligible).

8 **DR. ZIEMER:** Then I'm going to ask Mark --
9 question, sir?

10 **MR. CASTILLO:** My name is Richard Castillo. I
11 worked there from 1978 to 2005. Back in the
12 '90s when we were in production, how do you
13 take and try to evaluate a reading, a dosimetry
14 reading, when you have management telling the
15 workers your dose is too high; you need to take
16 your badge, stick it in the office in a desk.
17 How do you get a reading for that? I mean he
18 can calculate all he wants, but these people
19 were getting dose that was never calculated.

20 **DR. ZIEMER:** Thank you. Actu--

21 **MR. CASTILLO:** Also I want to go back to an
22 incident that happened in -- in E module. In E
23 module we had the birdcages that they talk
24 about. There was a line, there was a conveyor
25 and they went overhead. We had this one

1 foreman, and I could give you his name if I --
2 but I -- for purposes of safety or -- not
3 safety, but Privacy Act, I will not. But
4 anyway, what happened is five of the triggers
5 fell off the line, off the birdcages overhead.
6 Okay? He came to me -- well, first he went to
7 the crate engineers and he said okay, the crate
8 engineers got back with me. They said for --
9 it was okay for you to get up there and move
10 them, it wouldn't cause a criticality. I says
11 I want to see it in writing. He says oh, they
12 said it's okay. I says no. I says I want to
13 see it in writing. He says well, then I'll do
14 it. I says okay, you do it. Let me get out of
15 here. So I cleared that -- that -- in case his
16 hands caused a criticality 'cause now you have
17 -- you're changing the configuration.

18 **DR. ZIEMER:** We understand.

19 **MR. CASTILLO:** He got in -- up there and moved
20 it. I seen him a year later. Both hands are
21 full of cancer. I don't care how much data he
22 has, that's living proof. That's all I want to
23 --

24 **DR. ZIEMER:** Thank you. And let -- let me --
25 let me mention that in the -- the first case

1 that you described where if a worker in his --
2 in his claim so indicates that the situation
3 that you described did occur, NIOSH does have
4 methods to -- to handle that, as well, so they
5 -- they do -- and it's done on an individual
6 worker basis. If you -- if you said that this
7 was done with my badge --

8 **MR. CASTILLO:** Yeah, they have -- they have
9 calculations for that, but how do you account
10 for the guy having the skin cancer? That's
11 living proof. And I -- I could tell you the
12 guy's name, and I could give you the names of
13 the people that put the badges in the desks.
14 They asked me to do it. I refused.

15 **WORKING GROUP RECOMMENDATION**

16 **DR. ZIEMER:** Okay. Thank you. Now Mark --
17 call on Mark for purposes of a recommendation
18 from the working group.

19 **MR. GRIFFON:** Yeah, I -- I think at this point
20 the workgroup -- I have at least a -- a
21 preliminary motion, and I think -- I have
22 written out a draft anyway that has some of the
23 details supporting the motion, but I think I
24 can offer the sense of the motion first --

25 **DR. ZIEMER:** Okay.

1 **MR. GRIFFON:** -- if that's okay.

2 The motion is to -- to have an SEC established
3 for all workers who were monitored, or should
4 have been monitored, for neutron exposures from
5 January 1, 1959 through December 31st of 1966,
6 and -- and it's -- it's worded as all -- all
7 workers who were monitored, or should have been
8 monitored, so we have that same language where
9 we have to -- that's why I was inquiring some
10 on the buildings that would be included and how
11 we're going to determine -- I think that's a
12 separate discussion, but that's -- that's the -
13 - that's the one -- one motion we're prepared
14 to make.

15 **DR. ZIEMER:** Okay. Let -- let me -- that --
16 that is a motion then from the -- from the
17 workgroup?

18 **MR. GRIFFON:** Well, it's a motion -- well, I
19 guess it's my motion. We didn't have -- Mike
20 Gibson wasn't -- hasn't -- hasn't seen this or
21 heard this, so -- but Wanda --

22 **MS. MUNN:** I second.

23 **MR. GRIFFON:** Wanda seconds, yeah.

24 **DR. ZIEMER:** Okay, the motion is made and
25 seconded. Let me ask if the workgroup is

1 prepared, after we take action on this motion,
2 to address subsequent years, namely '67 and
3 beyond, in some fashion and -- or -- your
4 motion goes through '66 --

5 **MR. GRIFFON:** Yeah, yeah --

6 **DR. ZIEMER:** -- 1966, you would --

7 **MR. GRIFFON:** -- the motion beyond -- '67
8 through the -- is it 2005, the motion is to
9 accept NIOSH's evaluation report and -- and
10 that would also overlap the '52 through '66 for
11 non-neutron parts of the evaluation report. So
12 it's basically to accept NIOSH's conclusions in
13 the report for --

14 **DR. ZIEMER:** Well, that motion is not before us
15 yet, but just --

16 **MR. GRIFFON:** Right.

17 **DR. ZIEMER:** -- in anticipation. So the motion
18 is to recommend Special Exposure Cohort status
19 for neutron workers for the period of January
20 1st, 1959 through December 31st, 1966 -- is
21 that correct?

22 **MR. GRIFFON:** Right -- yes.

23 **DR. ZIEMER:** Okay, and the motion's been
24 seconded. Board members, do you have questions
25 or comments on this motion, pro or con?

1 **MR. GIBSON:** Can I make a comment?

2 **DR. ZIEMER:** Yeah, is that Mike?

3 **MR. GIBSON:** Yeah.

4 **DR. ZIEMER:** Mike Gibson, please proceed.

5 **MR. GIBSON:** First I apologize that I wasn't
6 able to be there in Denver, but -- so I have
7 not seen the motion. I guess I just want to
8 comment that in light of Ms. Munn's comments
9 and I, as part of the working group, do take
10 responsibility for the process being drawn out.
11 I didn't quite look at it in those terms as --
12 that she's put them, but I do accept that
13 responsibility. And I feel that since we have
14 been less than timely, I would just like to say
15 that at the end of this exhaust-- (broken
16 transmission) approach, we're still down to
17 NIOSH saying -- throwing the word "plausible"
18 around. And when I look at the definition of
19 "plausible," it says believable and appearing
20 likely to be true, but usually in the absence
21 of proof. And given that, I just think that we
22 might ought to consider (broken transmission)
23 the petition to include all Rocky Flats
24 workers.

25 **UNIDENTIFIED:** Yes.

1 **DR. ZIEMER:** So Mike, you are speaking against
2 the motion, as I understand it then.

3 **MR. GIBSON:** Or to -- to amend it and to
4 broaden the scope.

5 **DR. ZIEMER:** Okay, thank -- thank you. Other
6 comments or questions, Board members? Dr.
7 Lockey or Phil -- Phil Schofield, any comments?

8 **MR. SCHOFIELD:** Yeah, this is Phil. I would
9 like to -- I'm still concerned about some of
10 the records, particularly (broken transmission)
11 to about 1970, which if we're not going to be
12 able to expand it for the whole time frame,
13 then we should at least make it through the end
14 of 1970 because of the spottiness of a lot of
15 the records in '69 and '70.

16 **DR. ZIEMER:** Okay, so your concern here is the
17 period from basically '67 to '70. Is that
18 correct?

19 **MR. SCHOFIELD:** Correct.

20 **DR. ZIEMER:** Yeah, okay. Let me ask Mark to
21 address that momentarily here.

22 **MR. GRIFFON:** That was certainly a -- a -- a
23 lengthy discussion between workgroup members
24 that -- and we -- we certainly considered that.
25 A couple of points on that. One is that it's -

1 - it's clear in our review that the -- the
2 highest exposed individuals from '67 through
3 '70 -- the time period for this NTA film
4 consideration -- were actually measured during
5 this time period and -- and not -- not assigned
6 notional dose in the NDRP project. So that was
7 one part of it.
8 The other part of it was that this question of
9 the zeroes and the correction factors and this
10 -- this sort of non-recovered films that were
11 never -- never measured. The -- the worksheets
12 being available is helpful 'cause we can
13 distinguish which ones are actually measured
14 zeroes versus -- and I raised this as a concern
15 yesterday, that if we can't sort that out, we -
16 - we may have a -- a problem here. But in fact
17 we have the worksheets to back that up and --
18 and one further item was that I've -- and NIOSH
19 can confirm this, but I've been assured that in
20 the event that worksheets are not available for
21 certain of that group, they would assume
22 unmonitored and assign just the highest -- the
23 95th percentile cycle date. I -- NIOSH may
24 want to veri-- they're -- they're nodding their
25 head, the record should show, in agreement with

1 DR. WADE: Okay. Mr. Presley?

2 MR. PRESLEY: I vote for the motion.

3 DR. WADE: Mr. Clawson?

4 MR. CLAWSON: No.

5 DR. ZIEMER: No.

6 DR. WADE: Mr. Griffon?

7 MR. GRIFFON: For the motion.

8 DR. WADE: Ms. Roessler?

9 DR. ROESSLER: I'm for the motion.

10 DR. WADE: Ms. Munn?

11 MS. MUNN: For the motion.

12 DR. WADE: Dr. Melius?

13 DR. MELIUS: Just repeat the motion again.

14 DR. ZIEMER: The motion is to recommend a
15 Special Exposure Cohort status for neutron
16 workers covering the period of January 1st, '59
17 through December 31st, '66. And of course the
18 wording that would go to the Secretary would
19 include the more complete description and our
20 usual caveats which would spell out how soon
21 the Chairman has to get that information in and
22 -- and --

23 DR. MELIUS: Okay.

24 DR. ZIEMER: -- the usual legal wording on --
25 on that motion.

1 agree that we would discuss this second time
2 period separately, in a separate motion, so
3 that's why I'm offering it as a separate
4 motion, to have a separate discussion on it and
5 --

6 **DR. ZIEMER:** Right, the --

7 **MR. GRIFFON:** -- separate -- separate vote.

8 **DR. ZIEMER:** -- Chair insisted at the last time
9 that the Board take some kind of action, pro or
10 con, on the remaining time period. I -- I want
11 it on the record, at least. So we're talking
12 about January 1st, '67 and up through I think
13 2005 --

14 **MR. GRIFFON:** Five, right.

15 **DR. ZIEMER:** -- was the period covered in the
16 petition.

17 **MR. GRIFFON:** Yeah.

18 **DR. ZIEMER:** So your -- your motion basically
19 is that --

20 **MR. GRIFFON:** That the -- that the Board accept
21 the NIOSH evaluation conclusion that they can
22 reconstruct dose for -- can reconstruct all
23 radiation dose for that time period.

24 **DR. ZIEMER:** That is the motion. Is there a
25 second?

1 **MS. MUNN:** Second.

2 **DR. ZIEMER:** And seconded. Now discussion on
3 this motion? Let me start with those on the
4 phone.

5 **MR. SCHOFIELD:** Yeah, could I have the motion
6 restated and -- I seemed to break up right
7 then.

8 **DR. ZIEMER:** The -- the motion is to accept the
9 -- or to agree with the NIOSH recommendation
10 that for the period 19-- January, 1967 through
11 2005, agreeing that dose reconstruction can be
12 done and therefore to not recommend Special
13 Exposure Cohort status for that time period.
14 Now Board members, do you wish to speak for or
15 against the motion? Dr. Melius.

16 **DR. MELIUS:** I'd like to speak against the
17 motion. I think there are too many open issues
18 that have not been adequately addressed, at
19 least to my satisfaction, regarding the '67 to
20 '70 neutron dose exposure issue, the thorium
21 issue and the building 881 issue, as well as I
22 think a number of other issues that have been -
23 - been brought up today by the petitioners and
24 other people here. And for those reasons, I am
25 not in support of that motion.

1 **UNIDENTIFIED:** (From the audience and off
2 microphone) Thank you.

3 **DR. ZIEMER:** Thank you.

4 **MR. GIBSON:** Dr. Ziemer?

5 **DR. ZIEMER:** Somebody on the phone, is it --

6 **MR. GIBSON:** Dr. Ziemer, it's Mike.

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

8 **MR. GIBSON:** Yeah, I'd like to -- I'd like to
9 speak out in opposition of this motion. This
10 Board was made up by law of those from the
11 scientific, medical and the labor field, and I
12 think that we have to give as much weight to
13 the experiences that the people went through at
14 the site as we do to the scientific issues.
15 And again I state, at the end of the day all I
16 hear is it's plausible on the scientific side,
17 and I hear argument after argument from people
18 that were actually there doing the job, and I
19 think that the -- if we're to do our duties
20 correctly, we need to consider the people's
21 experiences and we need to grant this petition
22 as they (broken transmission) it.

23 **DR. ZIEMER:** Thank you. So you are speaking
24 against the motion. Thank you.

25 Wanda Munn.

1 **MS. MUNN:** At the core of our responsibility on
2 this Board we have only one issue. We are not
3 chartered with dealing with the unfortunate
4 business of what's been referred to as chemical
5 cocktails -- I think appropriately referred to.
6 We have one responsibility and one only, and
7 that's to deal with the issue of whether
8 adequate information exists to complete
9 accurate -- reasonably accurate dose
10 reconstructions for individuals who have had
11 radiation exposure. So the core of our
12 responsibility is really very difficult to get
13 to, but in simple terms, the only issue is
14 whether adequate information exists for those
15 reconstructions to be done in a reasonable
16 manner.

17 We have heard no indication that we do not have
18 adequate information to do that. We have
19 excellent information, and for that reason I
20 support the motion.

21 **DR. ZIEMER:** Other Board members, pro or con?
22 Yes, Mr. Clawson.

23 **MR. CLAWSON:** You're absolutely right. We've
24 got a responsibility, but we also know that
25 there is gaps. And I'm -- I'm not a scientific

1 person. I'm still a worker. I still work in
2 the industry and I still know the fallacies
3 that are out there. I believe that we are
4 still learning. I believe that we -- you look
5 in the last 40 years what we have learned and
6 what we have gotten, and I apologize, I -- it's
7 no disrespect to NIOSH or anybody else, but I
8 really do not feel that it can be done, and I
9 speak against it.

10 **UNIDENTIFIED:** (From the audience and off
11 microphone) Thank you.

12 **DR. ZIEMER:** So you speak against the motion.
13 Mr. Presley?

14 **MR. PRESLEY:** As a -- a Board member that's
15 been on the working group, yes, we've taken a
16 tremendous amount of time. We've looked at a
17 tremendous amount of data. And I think that
18 NIOSH has done their job, SC&A has done their
19 job. They have given us reports, they have
20 given us data that says that they can do dose
21 reconstruction and do it accurately and do it
22 in the favor of the petitioner. I would like
23 to speak in favor of the motion.

24 **DR. ZIEMER:** Thank you. Dr. Roessler?

25 **DR. ROESSLER:** I wasn't on the working group,

1 but I have worked in the field of health
2 physics and dosimetry for a long time. And I -
3 - I have confidence that NIOSH, in their very
4 detailed evaluation of the situation, can
5 reconstruct the doses in the manner that we're
6 required by this rule, and that is to have an
7 upper bound. I think enough information is
8 known, in spite of all of the things that have
9 been brought up, that -- that an upper bound
10 and a claimant-friendly dose can be obtained.
11 I -- I do want to add, though, that it's very
12 difficult, as a Board member, to listen to
13 these people, and I sympathize with all of the
14 health problems. So this decision is very
15 difficult for me to make.

16 **DR. ZIEMER:** Thank you. Any others on the
17 phone that have comments? Dr. Lockey?

18 **MR. GIBSON:** Dr. Ziemer?

19 **DR. ZIEMER:** Yes.

20 **MR. GIBSON:** If I could just add --

21 **DR. ZIEMER:** Sure.

22 **MR. GIBSON:** -- (broken transmission) my
23 comment just a little bit.

24 **DR. ZIEMER:** Yes, Mike Gibson.

25 **MR. GIBSON:** And with all due respect to my

1 former -- my working group member, Ms. Munn, I
2 just want to make a note (broken transmission)
3 the record that we have more than one
4 responsibility. We have the responsibility to
5 do this in a timely manner, and I just (broken
6 transmission) I take the responsibility as a
7 member of the working group that we have not
8 (broken transmission) in this time, but you
9 know, I don't think we have that liberty now
10 that it's been put in this kind of light. But
11 we have more than one responsibility to do it
12 in a timely manner and I don't believe that
13 criteria was met in this situation.

14 **DR. ZIEMER:** Thank you. Let's see, Mike --
15 okay, Mark.

16 **MR. GRIFFON:** Yeah, I -- I guess I have to -- I
17 mean I -- I want to say that I agree with
18 Wanda's point that -- and as a workgroup member
19 I do take responsibility, and probably the
20 chief responsibility for some of these delays
21 because, quite frankly, I was the last person
22 maybe on the workgroup or -- well, maybe not --
23 maybe that's not true, but I certainly was
24 attempting to, as Brant I think characterized
25 it, turn over every stone and had a great bit

1 of doubt about some of the database data, asked
2 for -- met some resistance sometimes, but asked
3 for a lot in terms of we want more raw data to
4 support some of these conclusions. We -- you
5 know, I -- I see some inconsistencies between
6 databases. We -- we have to go back to raw
7 data and verify this. We're not just going to
8 accept this as the truth. And I think we did
9 push for a lot of those -- extensive amount of
10 raw data and looked into that at great length
11 and, you know, I -- I think it's also important
12 to point out, after doing all this, I think --
13 at least for those points I went over in my
14 presentation yesterday -- it doesn't include
15 the '67 through '70 time -- time period with
16 the neutrons, but from '70 and beyond, SC&A is
17 -- is concluding -- is in agreement with this,
18 you know, that their -- their findings are
19 consistent with what we're saying on the
20 workgroup. So it's not only NIOSH telling us
21 this. We've had SC&A look at this thoroughly,
22 and I think that's also important to remember.
23 We -- and we all know how extensive SC&A's
24 report is. I think it totals probably over --
25 close to 1,000 pages now. So we -- we

1 definitely looked at this and didn't just
2 accept it on face value. We -- we tore into
3 this and I think at the end of the day, you
4 know, we -- we do have the data for that later
5 ti-- I feel we do have the data for that later
6 time period, so...

7 **DR. ZIEMER:** Thank you. Let me ask if either
8 Phil or Jim Lockey have any comments, pro or
9 con, on the motion?

10 **DR. LOCKEY:** This is Jim Lockey. I -- I've
11 been impressed by the -- the work that this
12 working group has gone through, and
13 particularly Mark leaving no stone unturned.
14 And I think that all the Board owe a debt of
15 gratitude and thanks for the extra effort
16 that's gone into this project.

17 **DR. ZIEMER:** Okay. Do you have any specific
18 comments for or against the motion?

19 **DR. LOCKEY:** I -- you know, after looking at
20 all the data and -- and listening to the
21 workgroup, I think it -- it -- that it appears
22 that dose can be reconstructed in this cohort
23 for the time period outlined.

24 **DR. ZIEMER:** Okay, thank you. Phil, are you on
25 the line?

1 **MR. SCHOFIELD:** Yes, sir. I'm actually against
2 the motion as it stands because I still feel
3 that the data for '69 to '70 is awful spotty
4 and there's a lot of assumptions being made
5 instead of hard data for that, so people
6 actually trying to get their dose
7 reconstructed, '69/'70, when there's large
8 gaps, I have a problem (broken transmission)
9 those years in the motion.

10 **DR. ZIEMER:** Okay, thank you. Dr. Melius, you
11 have an additional comment?

12 **DR. MELIUS:** I would just like to elaborate a
13 little bit. First of all, I -- my disagreement
14 with the conclusions of the workgroup is not
15 meant to in any way criticize the workgroup's
16 hard efforts in trying to evaluate this
17 petition and -- and come to grips with what's a
18 very complicated site with lots of different
19 exposures and over a long time period and with
20 information that's not always easy to deal
21 with. However, I would remind the -- all of
22 the Board that I -- I think the -- the fault,
23 to a great extent, with this process and with
24 the effort required, you know, goes back to how
25 this site was originally approached. We had a

1 site profile that was largely written by people
2 with very significant conflicts of interest.
3 To this day if one goes back to the revised
4 site profile in the two main chapters, those on
5 external and internal exposures, all of the
6 attributions I believe in those chapters are to
7 those two individuals who were originally
8 involved in the dose reconstruction program --
9 yet to be convinced that there's been an
10 adequate, independent review of that.
11 Secondly, there was no opportunity, for very
12 little opportunity for worker input into the
13 process. There was one meeting held in 2004
14 prior to the more recent work with the
15 petition. And one -- if one goes back to the
16 revised site profile, one -- though one finds
17 some verbiage that says that worker inputs were
18 considered, there is not one reference to a --
19 any comment or information received from a
20 worker into that -- that report.
21 Unfortunately we're then left at the end of the
22 process with the petition to try to sort
23 through what I think's been a lot of valuable
24 information, including valuable information
25 that we received last night that I don't think

1 we've given, you know, adequate attention to or
2 -- or have adequately followed up on.
3 We also are dealing with a process that's very
4 unfair to the petitioners. They are given --
5 you know, they lack resources. They're given
6 access to information begrudgingly and often at
7 the last minute and not in a timely fashion.
8 And even the Board is presented with
9 information from NIOSH that is incomplete and
10 at the last minute. We were given a
11 presentation yesterday we're still struggling
12 to get some of the references for that was --
13 the report given to us I believe in the end of
14 May had no attributions as to where the
15 information came from and so forth. And so
16 we're being asked to judge things very quickly
17 and with incomplete and inadequate information.
18 And finally, I -- I think the report that
19 Jennifer and the other petitioners have -- have
20 made quite well. I mean this process has taken
21 847 days and that's -- it's -- something is
22 sort of grossly unfair about that and, you
23 know, maybe we could struggle on and -- and try
24 to come to grips with all these issues, but I
25 think we have to try to reach some closure on

1 it. It may be up to Congress or to the legal
2 system to better address this process, but --
3 or it may be to NIOSH to revise the whole
4 process, but -- but thi-- this is not a fair
5 process and I can't, you know, claim that I've
6 been adequately convinced that individual dose
7 reconstruction is po-- feasible to be done with
8 sufficient accuracy over the entire time period
9 and over the tire-- entire scope of the period
10 that's covered in -- in Mark's motion.

11 **DR. ZIEMER:** Okay.

12 **UNIDENTIFIED:** (From the audience and off
13 microphone) Thank you.

14 **DR. ZIEMER:** Thank you. And typ-- typically
15 the -- typically the Chair on a board of this
16 type is supposed to sort of be the moderator
17 and -- and not enter into the debate. But I
18 think it behooves me to make some remarks, as
19 well.

20 First of all, I've become convinced, based on
21 the work of the working group, that it is
22 certainly feasible to -- for NIOSH to do dose
23 reconstruction with sufficient accuracy -- and
24 sufficient accuracy in this case means accuracy
25 that will allow them to make a claimant-

1 favorable decision. I also note that the
2 workgroup, through their process, has caused,
3 in a way, NIOSH to change much of what they
4 were doing on this site in terms of dose
5 reconstruction so that in the end, sort of
6 regardless of how the final thing comes out,
7 dose reconstructions done here will be done in
8 a much better manner than they would have been
9 done prior to the efforts of this workgroup and
10 this process.

11 Now we heard from the Congressman earlier today
12 and I -- in a sense, and I can say this since
13 I'm not a part of any of these agencies. It's
14 unfortunate that the burden has been passed to
15 a group like this to correct what Congress
16 should have done correctly in the first place.
17 It is hard to get any of them to admit that the
18 -- the generation of the convoluted process
19 that we find ourselves in is the way that the
20 law was originally written, that basically --

21 **UNIDENTIFIED:** (From the audience and off
22 microphone) (Unintelligible)

23 **DR. ZIEMER:** -- that basically requires us to
24 go through this process, that requires some
25 time-consuming efforts for us to do our

1 responsibilities as they are stated under the
2 law, because what we see here is duplicated all
3 over the country. This is not the only site
4 that has the same -- we have these problems --
5 timing problems with a Board which -- of
6 workers which is not as large as the law
7 dictates it should be and therefore is very
8 overburdened. That's why our working groups
9 are -- are overburdened in time -- doing a
10 little soap-boxing here --

11 **DR. WADE:** No more about Congress, but you can
12 talk about the process.

13 **DR. ZIEMER:** Yeah. But the process perhaps
14 could -- could have been set up in a better
15 manner at the front end, but we have what we
16 have. And I think the Board is struggling to
17 do its job in the way that it -- it believes it
18 should be done. Every Board member is very
19 conscientious. I think every Board member
20 empathizes with the workers very much. We --
21 we end up in somewhat different places. We do
22 this in a collegial fashion. None of us are
23 mad at each other because of how we vote on
24 these things. We do it in a collegial fashion,
25 but we have to -- we have to proceed and vote.

1 Now at the moment, without the vote having
2 occurred, it appears to the Chair that the vote
3 may pass. Now -- and I want -- I want us to
4 think about that for a moment because what we
5 will have will be a recommendation to the
6 Secretary that is not a very strong
7 recommendation. But nonetheless, he will have
8 to deal with that in some manner or another.
9 The other part of it is to point out to the
10 assembly that we are not precluded, I suppose,
11 in the future from having a different
12 recommendation if other information comes forth
13 of the type that Jim mentioned. However, I --
14 I do -- I don't want to drag out the process
15 and -- and delay the process. I've tried to
16 press the Board to come to a type of closure.
17 We'll be where we are at the end of this
18 process today. Perhaps there will be
19 additional information come forth that would
20 re-- that would suggest that there be some --
21 some other endpoint in the future, but we have
22 what we have at the moment.

23 **MR. ROMERO:** (From the audience and off
24 microphone) Mr. Zimmer (sic), another question,
25 please?

1 **DR. ZIEMER:** Yes.

2 **MR. ROMERO:** If it's Congress's problem why
3 this is not working, why didn't you address
4 that when the man was standing right there?

5 **DR. ZIEMER:** Probably I --

6 **MR. ROMERO:** Why didn't you tell him how to fix
7 it so he can go to Washington and fix it?

8 **DR. ZIEMER:** I -- I think -- I think he's
9 already indicated that -- that they're --
10 Congress is in fact taking some steps that may
11 change the process, so he recognizes that, I
12 think, and -- I -- I don't want to say -- I'm --
13 - it's not my intent to insult Congress. I'm --
14 - I'm simply expressing a concern --

15 **UNIDENTIFIED:** (From the audience and off
16 microphone) (Unintelligible)

17 **DR. ZIEMER:** -- I'm simply expressing a
18 concern. None -- none of these laws are -- you
19 know, this one doesn't consider the chemical
20 mixes and so on, so we have -- there's --
21 there's those kinds of things. We can't
22 address them all, but we'll do the best we can.
23 Now --

24 **DR. WADE:** Call the roll?

25 **DR. ZIEMER:** -- additional comments. Robert?

1 DR. WADE: I can call the roll.

2 DR. ZIEMER: Ready for a roll-call vote.

3 DR. WADE: Okay. Presley?

4 MR. PRESLEY: I vote for -- I vote for the
5 motion.

6 DR. WADE: Clawson?

7 MR. CLAWSON: No.

8 DR. WADE: Griffon?

9 MR. GRIFFON: For the motion.

10 DR. WADE: Roessler?

11 DR. ROESSLER: For the motion.

12 DR. WADE: Munn?

13 MS. MUNN: For the motion.

14 DR. WADE: Melius?

15 DR. MELIUS: Against the motion.

16 DR. WADE: Lockey?

17 DR. LOCKEY: For the motion.

18 DR. WADE: Schofield?

19 MR. SCHOFIELD: Against the motion.

20 DR. WADE: Gibson?

21 (No response)

22 Mike? Mike Gibson, are you with us?

23 MR. GIBSON: Yeah, are you calling me?

24 DR. WADE: Yes.

25 MR. GIBSON: I can hardly hear.

1 DR. ZIEMER: You vote --

2 DR. WADE: I'm sorry.

3 MR. GIBSON: I vote against the motion.

4 DR. ZIEMER: Thank you.

5 DR. WADE: Thank you. Dr. Ziemer?

6 DR. ZIEMER: For the motion.

7 DR. WADE: The vote is six to four in favor of
8 the motion.

9 DR. ZIEMER: Six to four is the vote. The
10 motion carries.

11 Board members, are there any follow-up -- and
12 again, this motion would be put into the -- the
13 normal regulatory form that would go forward to
14 the Secretary, and I assume that -- and -- and
15 we have, at the request of the -- the Colorado
16 delegation, held the letter for the original
17 motion. They asked that it not be sent in
18 until we completed the -- the work here at this
19 -- so there -- there would be recommendations
20 on three different time periods that would go
21 forward. Is -- is that your understanding --

22 DR. WADE: Correct.

23 DR. ZIEMER: -- Dr. Wade? Right. Okay, Board
24 members, any further comments or questions
25 relative to the Rocky Flats petition.

1 **MR. SCHOFIELD:** This is Phillip, just one
2 comment. I think that SC&A and the working
3 group have done an outstanding job and have dug
4 up a mountain of facts that they have (broken
5 transmission) to sift through.

6 **DR. ZIEMER:** Thank you, Mike (sic). Any other
7 comments?

8 **DR. WADE:** We have more work to do. That was
9 Schofield.

10 **DR. LOCKEY:** Paul?

11 **DR. ZIEMER:** Oh, that was Schofield. Okay.
12 Yes?

13 **DR. LOCKEY:** Paul, Jim Lockey, I --

14 **DR. ZIEMER:** Jim.

15 **DR. LOCKEY:** -- I just wanted to reiterate your
16 -- your comment that you made a few minutes ago
17 about additional steps that -- that perhaps
18 should be taken in relationship to this
19 legislation.

20 **DR. WADE:** Again, individual Board members can
21 speak out their views relative to Congress, but
22 the Board really is in no position to advise
23 Congress.

24 **DR. ZIEMER:** Okay. Yes.

25 **UNIDENTIFIED:** (Off microphone)

1 (Unintelligible) Maryanne (unintelligible) (on
2 microphone) and I'm going to ask you to sit
3 through one more thing.

4 **DR. ZIEMER:** Sure.

5 **UNIDENTIFIED:** This is called "The Silent
6 Soldiers". (Reading) They walked many days in
7 plutonium dust because there were those who
8 told them they must. They stood behind glass
9 that was meant to shield while the gaskets on
10 boxes plutonium did yield. They battled the
11 dragons of plutonium fire and fought
12 criticalities down to the wire. Aprons of lead
13 were their garments of armor, dosimetry badges
14 their badges of honor. They went when their
15 call -- country called them to service, as the
16 nuclear threat made our citizens nervous. Day
17 after day quietly serving their nation, and
18 they did it proudly till the Cold War
19 cessation. But now when they need their
20 allegations supported, there is none to be
21 found, the nation's aborted. They die one by
22 one, brothers and sisters by their side,
23 watching and waiting till it's their turn to
24 die. There will be no flags flown half-mast in
25 their honor, no flags on their coffins when

1 that -- once they have passed. No statutes --
2 no statues designed nor monuments created, no
3 walls with their names, only memories abated.
4 I call the nation to consider their plight, for
5 these are the silent soldiers of the Rocky
6 Flats site.

7 **DR. ZIEMER:** Thank you.

8 **UNIDENTIFIED:** (Off microphone) I honor all of
9 you, including (unintelligible).

10 **DR. WADE:** One thing we need to do are the --

11 **DR. ZIEMER:** Thank you very much. Let's see if
12 we can move ahead.

13 **DR. WADE:** Right now? Okay.

14 **DR. ZIEMER:** We do have some members that will
15 be needing to catch planes and I'm wondering,
16 Board members, do you want to proceed through
17 the lunch hour and try to finish up?

18 **MS. MUNN:** Could we have a 20-minute break?

19 **DR. ZIEMER:** We can have a break -- comfort
20 break, 20 minutes, and we'll recon-- well,
21 let's see what it -- it's --

22 **MR. ROMERO:** I'd like to thank the four members
23 -- four Board members that voted for us, I'd
24 like to thank them.

25 **DR. ZIEMER:** So noted, thank you. We'll take a

1 20-minute break.

2 (Whereupon, a recess was taken from 1:10 p.m.
3 to 1:50 p.m.)

4 **DR. WADE:** People on the line?

5 **DR. ZIEMER:** Let me check and see who's on the
6 line. Mike Gibson?

7 **MR. GIBSON:** Yeah, here.

8 **DR. ZIEMER:** Thank you. Jim Lockey?

9 (No response)

10 May -- may not. Phil Schofield?

11 **MR. SCHOFIELD:** Here.

12 **DR. WADE:** Okay, we have a quorum.

13 **DR. ZIEMER:** We have two on the line, we have
14 four, five, six here.

15 **DR. POSTON:** Paul?

16 **DR. ZIEMER:** Yes.

17 **DR. POSTON:** John Poston's on the line.

18 **DR. ZIEMER:** Oh, John, hi. Okay. Thank you,
19 John.

20 **FURTHER ROCKY FLATS DISCUSSION**

21 Now we have one -- one sort of carry-over item
22 and I committed to Dave Hiller to see if we can
23 get an answer to his question, which basically
24 was how -- sort of imbedded in Mark's original
25 proposal was that we would encourage NIOSH to

1 utilize the issues -- the new information that
2 has derived out of the working group to -- to
3 upgrade -- I'll use the word upgrade -- how
4 dose reconstructions are done on this site.
5 There's been a piece of paper passed around and
6 it has four bullets on it --

7 **MR. GRIFFON:** I think NIOSH needs to be in the
8 room, too, for this.

9 **DR. ZIEMER:** I don't -- I'm looking for --

10 **MR. GRIFFON:** Yeah.

11 **DR. ZIEMER:** -- NIOSH people. Is either Jim
12 Neton or Brant --

13 **MR. PRESLEY:** I think Jim had to leave. I
14 believe they had to catch a flight.

15 **DR. ZIEMER:** What about Brant?

16 **MR. PRESLEY:** I'd say they're both on that same
17 plane.

18 **MR. GRIFFON:** (Off microphone) Better get
19 (unintelligible) --

20 **MR. PRESLEY:** They left here about --

21 **MR. GRIFFON:** -- (unintelligible).

22 **MR. PRESLEY:** -- (unintelligible) 1:00 o'clock.

23 **DR. ZIEMER:** Can we get either one on the cell
24 phone or not? I don't know.

25 **MR. PRESLEY:** Let me look out here --

1 **DR. ZIEMER:** David Hiller --

2 **MS. MUNN:** (Off microphone) (Unintelligible)
3 went to go (unintelligible).

4 **DR. WADE:** Can call Brant on his cell --

5 **DR. ZIEMER:** Yeah. David, we're going to try
6 to reach Brant or Jim by cell phone.
7 Apparently they have left the -- left the room
8 -- left the hotel, but David, do you have a
9 copy of the bullet points that -- that the
10 Board has that describe the new issues that
11 were raised in terms of dose reconstructions
12 and changes? Do you have that?

13 **MR. HILLER:** Yes, I do, Dr. Ziemer.

14 **DR. ZIEMER:** Yeah. And I think your question
15 was how long would it take NIOSH to enact or
16 get these in place. Is that basically your --
17 or do you want to restate the question?

18 **MR. HILLER:** No, that -- that's exactly my
19 concern, and I was hoping that the -- the --
20 the Board would have that information from
21 NIOSH before you acted on the motion. I'm not
22 sure if -- if it's a three-month process or an
23 18-month process, or longer, for NIOSH to
24 reconstruct all these doses again based on the
25 -- the new methodologies.

1 **MS. MUNN:** (Off microphone) (Unintelligible)
2 thinking -- I doubt they could tell you that.

3 **DR. ZIEMER:** Well, we're going to try -- try to
4 get one or the other of them on the phone here
5 in a moment so stand by and we'll see if we can
6 get an answer.

7 **MR. HILLER:** Thank you.

8 **MR. GRIFFON:** I don't know. No, I don't know.

9 **MR. PRESLEY:** That sticks in my mind.

10 **MR. GRIFFON:** I don't -- I don't want to put
11 words in (unintelligible).

12 **MR. PRESLEY:** Yeah, I don't want to say it.

13 **MR. GRIFFON:** Yeah. Should we -- should we
14 read -- I -- I -- I handed around -- and I
15 think they're available for the public, also --
16 the -- sort of the full -- the motion is the
17 same in these, but I think it also gives the
18 detail of what I think should be rolled into a
19 letter when the letter is written, including
20 for the first period the -- the defin-- or the
21 technical merit or basis of the --

22 **DR. ZIEMER:** Right, uh-huh.

23 **MR. GRIFFON:** -- proposed petition --

24 **DR. ZIEMER:** You want to read that?

25 **MR. GRIFFON:** Yeah, and for the second period

1 it -- it lists these re-evaluations that NIOSH
2 should do in -- in a timely manner, so we -- we
3 sort of do -- we think that's important to get
4 on the -- in the letter to the Secretary, so...

5 **DR. ZIEMER:** Read that -- that one with the
6 bullets. That's the (unintelligible).

7 **MR. GRIFFON:** Okay. Okay. So the -- and I --
8 I think -- you know, we -- we may need -- this
9 was done hastily so there may be some editorial
10 questions, certainly. But this is the -- the
11 second motion that we voted on, and I'll read
12 it for the record.

13 The Advisory Board is in agreement with NIOSH's
14 evaluation report with regard to the ability to
15 reconstruct radiation dose for the period from
16 '60 -- 1967 through 2005, and for all radiation
17 dose other than neutron dose from 1950 -- that
18 might be '51, I -- I might have to correct that
19 -- 1951 through 1966. I'm not sure if it's '51
20 or 2, I'd like to --

21 **DR. ZIEMER:** We'll check --

22 **MR. GRIFFON:** -- come up with a --

23 **MS. MUNN:** My memory is 2.

24 **MR. GRIFFON:** Through the review process of the
25 Rocky Flats petition, SEC 30, NIOSH has made

1 several important modifications to the dose
2 reconstruction approach, and the Board notes
3 that NIOSH has committed to re-evaluation of
4 all affected cases in a timely manner. The
5 primary changes of concern include, but are not
6 limited to -- bullet one -- NIOSH will use
7 modified approach for assessing internal doses
8 due to super S plutonium for all affected
9 cases. Bullet two, NIOSH will use modified
10 internal dose coworker approach, using the
11 agreed-upon approach of using the 95th
12 percentile values of the electronic data in
13 estimating worker dose via coworker internal
14 dose model for all affected cases -- and I'm --
15 get your edit pencils out on that line. Bullet
16 three, NIOSH will use modified internal dose
17 coworker approach for D&D workers using the
18 agreed-upon approach of using the 95th
19 percentile values of the electronic data in
20 estimating worker dose via coworker internal
21 dose model for all relevant radionuclides for
22 all affected cases. And bullet four, NIOSH
23 will use modified approach for reassessing
24 neutron doses for the time period from January
25 1, 1967 to December 31st, 1970 for all affected

1 cases.

2 **UNIDENTIFIED:** (Via telephone) Hello,
3 (unintelligible).

4 **MR. GRIFFON:** The Board strongly recommends the
5 -- that re-evaluation described above be
6 completed in a timely manner.

7 **DR. ZIEMER:** Someone on the phone?

8 **DR. WADE:** Someone was speaking. This is a
9 conference call. Is either Jim Neton or Brant
10 Ulsh on the phone?

11 **DR. NETON:** Hello, this is Jim Neton.

12 **DR. WADE:** Hi, Jim.

13 **DR. ZIEMER:** Jim.

14 **DR. WADE:** Would you please stay with us? The
15 Board is starting to discuss, Jim, this issue
16 of a timely re-evaluation of completed dose
17 reconstructions based upon the technical
18 changes that have resulted from the workgroup
19 process.

20 **DR. NETON:** Okay.

21 **DR. WADE:** And again, I think that the Board
22 might have some questions for you as to your
23 ability to meet their desire to see timely work
24 done. So stay with us. Mark was simply going
25 through a motion where he called out several

1 issues that NIOSH had to rework. Mark --

2 **DR. NETON:** Okay.

3 **DR. WADE:** -- for Jim's benefit, could you give
4 the list again?

5 **DR. ZIEMER:** Just read the four bullet points.

6 **MR. GRIFFON:** Yeah, the four bullet points,
7 NIOSH will use modified approach for assessing
8 internal dose due to super S plutonium for all
9 affected cases. Second bullet, NIOSH will use
10 modified internal dose coworker approach, using
11 the agreed-upon approach of using the 95th
12 percentile values of the electronic data, in
13 estimating worker dose via coworker internal
14 dose model for all affected cases. The third
15 bullet, NIOSH will use modified internal dose
16 coworker approach for D&D workers, using the
17 agreed-upon approach of using the 95th
18 percentile values of the electronic data, in
19 estimating worker dose via the coworker
20 internal dose model for all relevant
21 radionuclides for all affected cases. And the
22 fourth bullet, NIOSH will use modified approach
23 for reassessing neutron doses for the time
24 period from January 1st, 1967 through December
25 31st, 1970 for all affected cases.

1 **DR. NETON:** Okay, I've got it.

2 **DR. ZIEMER:** And Dave Hiller basically asked
3 how long will it take to implement these
4 changes, or perhaps you've already implemented
5 some of them.

6 **DR. NETON:** Right, we've started on some of
7 them, but I -- I would say that we -- in some
8 cases when we -- when we apply the Program
9 Evaluation Report, we actually just take the
10 analysis far enough to make a determination
11 that it doesn't change the case, the outcome of
12 -- of the decision. So with that proviso, I
13 mean one -- if that's okay, that's how we'll do
14 it. Are you looking now for an opinion as to
15 how long it would take for us to implement all
16 four of those changes?

17 **MR. GRIFFON:** Yeah, I said for affected cases,
18 so you know, that --

19 **DR. ZIEMER:** Yeah, in other words, you're going
20 to have to go back and redo some earlier cases,
21 possibly. Right?

22 **DR. NETON:** Right.

23 **DR. ZIEMER:** And we had some --

24 **DR. NETON:** I would say -- I'm not sure what
25 time frame is desirable, but I think we can do

1 this in a matter of -- of a month or two.

2 **DR. ZIEMER:** I think that's the kind of
3 information Mr. Hiller was looking for. We
4 wanted to see --

5 **DR. NETON:** Right.

6 **DR. ZIEMER:** -- whether we're talking about a
7 month or a year or whatever (unintelligible) --

8 **DR. NETON:** Right, I -- I --

9 **DR. ZIEMER:** Dave, is -- is that responsive to
10 your question? I just want to make sure
11 that...

12 **MR. HILLER:** Yes, that -- that's responsive to
13 the question and I hope it's an accurate
14 estimate. Thanks.

15 **DR. ZIEMER:** And -- and we will certainly be --
16 can I commit us to following up at our next
17 meeting to make sure that that's on track, just
18 to get a report from NIOSH --

19 **MR. GRIFFON:** I did -- I did consider putting a
20 -- a time estimate in here for -- in our letter
21 of what the Board considers timely. I know
22 that wouldn't necessarily be binding, but I --
23 I -- I don't know if it's worth including
24 (unintelligible).

25 **DR. ZIEMER:** Well, unless -- unless the Board

1 feels that -- that we need to do something
2 that's more pressing, I -- it seems to me a
3 month is quite reasonable, and we'll be --

4 **MR. GRIFFON:** (Off microphone) (Unintelligible)
5 is still reasonable.

6 **DR. ZIEMER:** -- meeting -- we'll be meeting in
7 a month and if we find nothing's happening, why
8 we can take some further action. But is -- is
9 that --

10 **MS. MUNN:** I -- I'd hate to put restrictions on
11 them, really, not understanding fully what else
12 is before them -- how big the Hanford site and
13 how -- how big other sites and -- and other
14 things we have on our plate are going. But
15 certainly a month or two seems more than
16 reasonable to me, and a verbal commitment ought
17 to be able to do it without our providing
18 restrictions, I think.

19 **DR. WADE:** Could -- could I ask a clarifying
20 question of Jim while you're on the line? Jim,
21 this is Lew.

22 **DR. NETON:** Sure.

23 **DR. WADE:** I know your process is you first do
24 the step of triaging all of the denied cases,
25 and then you make --

1 **DR. NETON:** Right.

2 **DR. WADE:** -- then you make a judgment as to
3 which cases could be affected, and then you go
4 ahead and re-evaluate those cases.

5 **DR. NETON:** Correct.

6 **DR. WADE:** Now is your month or two covering
7 all of the steps I've listed?

8 **DR. NETON:** Yes.

9 **DR. WADE:** Okay.

10 **DR. NETON:** Yeah, I would say it'd be closer to
11 two months just to get it through the process,
12 but we can get the triage done fairly quickly,
13 but then we'll have to apply these models to
14 the remaining cases and it's difficult for me
15 to predict how many that would be, but I'm
16 pretty confident we could do that in two
17 months' time.

18 **DR. WADE:** Thank you.

19 **DR. ZIEMER:** Okay. Thank you, Jim, appreciate
20 the input.

21 **DR. NETON:** Okay.

22 **DR. ZIEMER:** Okay. Thank you, Mr. Hiller.
23 Board members, we have a couple of items to
24 take care of. First of all --

25 **MR. GRIFFON:** Do -- do we want to read both

1 these motions in for the record, the other
2 motion as well, or do you just want to take
3 these -- I mean I -- I look at these and I
4 already found edit -- you know, certainly
5 grammatical problems, but if -- I would leave
6 it if the Chair --

7 **DR. ZIEMER:** Well, I --

8 **MR. GRIFFON:** -- wants to reword for editorial
9 purposes, that's fine.

10 **DR. ZIEMER:** I think the -- I think the
11 original motion is on the record --

12 **MR. GRIFFON:** Okay.

13 **DR. ZIEMER:** -- and is adequate for that. We
14 have already indicated we would put it in the
15 form of -- of the letter, which will be
16 actually more detailed than this --

17 **MR. GRIFFON:** I guess just one --

18 **DR. ZIEMER:** Liz, do you --

19 **MR. GRIFFON:** -- one point of clarification in
20 -- in this motion, it does say that -- and for
21 all radiation doses other than neutron doses
22 from '52 through '66 or '51 through '66. I --
23 I had -- I'd said that in my initial motion,
24 but I think when you -- when you
25 recharacterized it you sort of boiled it down

1 to this '67 through 2005 time frame. The
2 question was raised during the break as well,
3 what about the non-neutron workers prior to
4 '67, and this -- this says we can reconstruct
5 those doses, so I just wanted to be clear on
6 that.

7 **DR. ZIEMER:** That was already sort of built in.

8 **MR. GRIFFON:** It was said, right, right.

9 **DR. ZIEMER:** Also -- well, Liz, did you have a
10 comment -- comment?

11 **MS. HOMOKI-TITUS:** I just would like you to
12 clarify for the record, when you say you're
13 going to put it into your standard language,
14 does that include the 250-day determination?

15 **MS. MUNN:** Yes.

16 **DR. ZIEMER:** That's all included in there and -
17 - and the reference to the appropriate legisla-
18 - or -- or --

19 **MS. MUNN:** Part?

20 **DR. ZIEMER:** -- CFR 82 Part whatever -- 81 and
21 2 and 3 and the other wording, so we will
22 distribute to the Board the drafts of those
23 letters so they have the exact wording on that.
24 The thrust of the motion remains the same, I
25 believe.

1 **MR. SCHOFIELD:** Aye.

2 **DR. ZIEMER:** Okay, motion carries, minutes are
3 passed.

4 I'm going to suggest that we not have workgroup
5 updates today. Lew, I don't think it's
6 mandatory. We had them a few weeks ago in our
7 earlier meeting. We can pick that up next
8 time, but we do need to get underway with the
9 SC&A contract issues.

10 **DR. WADE:** Right, one small issue now. Jim,
11 are you still on the phone, Jim Neton?

12 **DR. NETON:** Yes, I am.

13 **DR. WADE:** Jim has given me a report to give
14 you on the status of the Hanford SEC. I guess,
15 Jim, I might have the piece of paper, so you
16 want me to do it or do you want to do it?

17 **DR. NETON:** No, it'd be better if you did it.
18 I don't think I have it memorized.

19 **DR. WADE:** Okay. So you had asked Jim to
20 provide you with an update with the -- on the
21 Hanford SEC status, and this is his update.
22 A class for SEC0057 (sic) proposed by
23 petitioners for 1/1/42 through 12/31/90 -- so
24 there was a petition 0050 (sic) proposing to
25 add that class. A NIOSH evaluation report was

1 issued on 5/18 of this year that proposes to
2 add a class for 10/1/43 through 8/31/46. Okay?
3 A second NIOSH evaluation report will be issued
4 to address the remaining years. The
5 anticipated completion date is by August 21st
6 of this year.

7 Last item. There is an SEC outreach meeting
8 scheduled for Hanford the week of June 18th of
9 this year.

10 So this was in response to whether it's
11 worthwhile to go to Hanford. I think you have
12 one petition evaluation report by NIOSH that
13 recommends that you add a class. You have
14 another pending. I think it would be good to
15 go to put this Board before the workers at
16 Hanford and to start to hear their stories.

17 **DR. ZIEMER:** Wanda Munn.

18 **MS. MUNN:** It's always good to go to Hanford.

19 **DR. ZIEMER:** We like those unbiased opinions.

20 **MR. CLAWSON:** That's questionable.

21 **DR. ZIEMER:** Okay. Thank you. Do we -- any
22 more on that then?

23 **DR. WADE:** No, then I can do SEC.

24 **DR. ZIEMER:** Okay.

25 **DR. WADE:** SC&A.

1 **DR. ZIEMER:** SC&A.

2 **DR. WADE:** We all realize that SC&A is a
3 critical part of this process and we want to
4 make sure that SC&A is available to the
5 process, and particularly for the Board, at the
6 start of next fiscal year. That's October 1st
7 of 2007. In order to do that, the time line
8 David Staudt and I have looked at would be that
9 we would be in receipt of SC&A proposals for
10 work next year when the Board meets in Hanford
11 in July. The Board could then modify those
12 proposals as it would like, ask for amended
13 proposals, and that would give David the
14 ability to get amended proposals from SC&A
15 according to Board's instruction, and issue
16 modification to the contract that would have
17 SC&A funded and working on October 1st of this
18 year.

19 In order to do that, I need to go to SC&A and
20 ask them for proposals. What I would like to
21 do is ask the Board's concurrence that I go to
22 SC&A and ask them to produce cost proposals on
23 Task I, that is the review of site profiles. I
24 would ask them to do a proposal that would
25 include six site profiles, but to present it in

1 a way that the Board would be able to see the
2 unit cost of reviews so that the Board could
3 decide in July if it wanted to adjust that
4 number up and down.

5 Second thing I would ask the Board to do --

6 **DR. ZIEMER:** Let me interrupt, Lew. Are -- are
7 we at this point simply asking for a number of
8 site -- not specific sites in --

9 **DR. WADE:** Not specific sites.

10 **DR. ZIEMER:** -- their proposal.

11 **DR. WADE:** Right.

12 **DR. ZIEMER:** Okay.

13 **DR. WADE:** Not specific sites, generic -- SC&A
14 has a good ability to estimate now -- I think
15 John would agree -- the doing of site pro--

16 **DR. ZIEMER:** Does it make much difference
17 whether it's a complex site like Hanford or a
18 simpler, smaller -- I -- I'm -- what I'm really
19 getting at is whether or not we should say, for
20 example, three major sites and three minor or
21 just leave it at six or -- or what -- how would
22 you approach that?

23 **DR. MAURO:** Yeah, in the past we did make that
24 distinction. Based on the experience, the
25 reality is it doesn't -- we can -- quite

1 frankly, it's 1,000 work hours per site
2 profile, and it averages out -- typically what
3 happens is we -- we don't know which ones are
4 going to be the tougher ones, but usually it
5 works out that they end up averaging out at
6 that right spot and -- and that's exactly
7 what's happening with the set of six we're
8 doing this year. So we -- I -- I would prefer
9 just to give you unit cost for the six, and I -
10 - the way the cost would be is to deliver the
11 draft report, and then there would be a
12 separate budget in terms of work hours again
13 for the closeout process. This is exactly how
14 we did it the last time.

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

16 **DR. WADE:** Thank you, fine. For Task III,
17 that's the review of procedures, I would ask
18 SC&A for a cost proposal that would include the
19 review of 30 procedures, that's what we've
20 normally asked for, but I would ask them to
21 give me unit costs on three types. One would
22 be the review of a new procedure. The second
23 would be the review of a previously-reviewed
24 procedure that has undergone major revision by
25 NIOSH. And the third would be the review of a

1 Program Evaluation Report. That's what we're
2 talking about in terms of the review of
3 completed dose reconstructions that Jim was
4 speaking of.

5 I would like to have the Board have the ability
6 to decide that it would like to do some of that
7 type of review next year and to have unit costs
8 on those three types of procedures. Okay?

9 For Task IV, which is individual dose
10 reconstruction reviews, I would ask for 60, a
11 proposal for 60. Again, SC&A has good cost
12 estimating capabilities now. And for the
13 record, SC&A has realized significant economies
14 now in their performance of this work.

15 **MR. GRIFFON:** Do we want to -- do we want to
16 scale up? I know we talked about eventually
17 adding more per year --

18 **DR. WADE:** I think we want to have the ability
19 for you to judge --

20 **MR. GRIFFON:** Yeah.

21 **DR. WADE:** -- that in July, so --

22 **MR. GRIFFON:** I know -- I know -- having said
23 that, I know the workgroup's -- or the
24 subcommittee's way behind where -- the
25 resolution process is way behind where SC&A is

1 (unintelligible).

2 **DR. WADE:** You want to ask for 60 plus the cost
3 of an addit-- of additional blocks of 20?

4 **MR. PRESLEY:** Mark? Mark?

5 **MR. GRIFFON:** Yeah, I think so. Yeah, at least
6 to have -- so we can consider it.

7 **MR. PRESLEY:** What about -- what did we decide
8 to do about blind?

9 **DR. ZIEMER:** Use -- use the mike.

10 **MR. PRESLEY:** What did we decide to do about
11 blind?

12 **MR. GRIFFON:** Yeah, we -- we did say
13 (unintelligible).

14 **DR. ZIEMER:** Well, I -- I think it was said
15 this would include some blind studies since --

16 **MR. GRIFFON:** Right.

17 **DR. ZIEMER:** -- proportionately there's not as
18 many of those, so you could -- for example, if
19 it was 55 and five, is it going to make much
20 difference.

21 **MR. GRIFFON:** Factor that in, yeah.

22 **DR. MAURO:** To help that out a bit, with regard
23 to this eighth set, we're expecting that we
24 will be doing the eighth set and some
25 additional blind -- perhaps two, three,

1 whatever you decide -- within the existing
2 budget. So as far -- so what I can do is when
3 I provide the -- the cost, I guess I could also
4 put in the unit cost per blind dose
5 reconstruction as part of it, so I'll give you
6 the -- in other words, there's unit cost for 60
7 plus additional blocks of 20, and per
8 additional blind dose reconstruction --

9 **DR. ZIEMER:** That would be good.

10 **DR. MAURO:** -- so you can pick and choose.

11 **MR. PRESLEY:** Yeah.

12 **DR. ZIEMER:** Okay, let's do that.

13 **DR. WADE:** Fine, thank you. And for Task V,
14 which is the SEC task, I would ask for six,
15 three focused reviews, three general broad
16 reviews, and again with unit costs for each --
17 each type.

18 **DR. ZIEMER:** Now --

19 **MR. GRIFFON:** I -- I was just going to ask, in
20 terms of the 60 cases, I know we have -- we've
21 had some discussion on the subcommittee about
22 basic versus advanced and -- and re-looking at
23 that scope as a subcommittee. I don't know
24 that we've completely defined that, but I know
25 John's been there during those deliberations.

1 I don't know if it'd be worthwhile to break out
2 unit cost at least. I don't know that we know
3 how many advanced or basic, but reconsider
4 maybe unit cost for the advanced cases based on
5 what --

6 **DR. ZIEMER:** Well, didn't we --

7 **MR. GRIFFON:** -- we were discussing --

8 **DR. ZIEMER:** -- end up sort of saying
9 everything we're doing now -- it's not basic
10 and it's not advanced; it's somewhere in
11 between?

12 **MR. GRIFFON:** Somewhere in between, right.

13 **DR. ZIEMER:** And unless -- unless we're going
14 to make that distinction in the future -- if
15 we're -- if we're going to continue --

16 **MR. GRIFFON:** I guess we haven't made it yet so
17 we can't (unintelligible) yeah.

18 **DR. ZIEMER:** -- we haven't, and -- and in fact,
19 it really has come down to the distinction
20 between the -- the best-estimate cases and the
21 other kind of cases. That's what it's really
22 boiled down to, in practice, at --

23 **MR. GRIFFON:** No, no --

24 **DR. ZIEMER:** No?

25 **MR. GRIFFON:** -- not -- not always, but we --

1 **DR. ZIEMER:** Well --

2 **MR. GRIFFON:** And I guess we have to wait till
3 -- we -- we are working on that issue in the
4 subcommittee, so --

5 **DR. ZIEMER:** But we haven't --

6 **MR. GRIFFON:** -- until we -- until we define
7 something --

8 **DR. ZIEMER:** Unless the subcommittee comes up
9 with a good definition --

10 **MR. GRIFFON:** Yeah, I agree.

11 **DR. ZIEMER:** -- of what these are --

12 **MR. GRIFFON:** I agree.

13 **DR. ZIEMER:** -- I think we can go with -- now I
14 think, Lew, you've suggested how we proceed.
15 I'm going to ask the Board for a motion --

16 **MR. STAUDT:** Lew, this is Dave.

17 **DR. WADE:** Yes, Dave.

18 **MR. STAUDT:** There just another -- Task VI, and
19 that covers program management cost, and I
20 think it's probably going to be pretty
21 consistent again this year.

22 **DR. WADE:** Right. Sorry, Dave, that's right.

23 **DR. ZIEMER:** That would be built in. Right?

24 **DR. WADE:** But we would ask for --

25 **DR. ZIEMER:** We would ask for that.

1 **DR. WADE:** -- for a reasonable and prudent
2 proposal for project management -- which is
3 excellently done.

4 **MR. STAUDT:** Okay.

5 **DR. ZIEMER:** Thank you, David.

6 **MR. CLAWSON:** Dr. Ziemer, I just have a
7 question on these -- I -- I guess I'm wondering
8 -- these blind or -- or whatever case profiles
9 that we redo, I guess what I'm getting to is
10 will some of these -- or could they be part of
11 some of the Rocky Flats ones that were -- we're
12 asking them to go -- NIOSH to go back and redo
13 some of these. Are they still going to be a
14 part of this -- they'd be -- can I just -- I
15 want to kind of check the work that is -- has -
16 - has been done and that it --

17 **DR. ZIEMER:** Well, it may or may not be. I --
18 I think a blind review is going to be
19 completely blind to the -- to the reviewers,
20 but it'll be up to the subcommittee to consider
21 --

22 **MR. GRIFFON:** (Off microphone) (Unintelligible)
23 select, yeah (unintelligible).

24 **DR. ZIEMER:** -- whether to select --

25 **MR. CLAWSON:** Well, I just wanted to make sure

1 that we -- we had the ability to be able to go
2 back and look at some of these that were --
3 were redone.

4 **DR. ZIEMER:** Yeah, whether blind or not, we can
5 always do that.

6 **MR. GRIFFON:** (Off microphone) (Unintelligible)
7 yeah.

8 **MR. CLAWSON:** Right.

9 **DR. ZIEMER:** Right. I -- I'm simply going to
10 ask for a motion to -- to charge SC&A to
11 prepare the cost proposals as described by Lew,
12 which is, to reiterate, Task I, six site
13 profile reviews; Task III, review of 30
14 procedures, which includes the new, the revised
15 and the Program Evaluation types and subsets;
16 60 dose reconstruction reviews plus blind
17 reviews plus additional sets of 20; and
18 finally, three focused and three broad SEC
19 reviews. Can someone make a motion?

20 **DR. WADE:** And project management.

21 **DR. ZIEMER:** Or project -- plus -- plus the
22 project management proposal. Someone make such
23 a motion?

24 **MR. CLAWSON:** I move to do what you said.

25 **DR. ZIEMER:** Thank you. That was exactly the

1 motion I was looking for.

2 **MS. MUNN:** Second.

3 **DR. ZIEMER:** And seconded. Any discussion?

4 (No responses)

5 And Phil, Mike, John, Jim, any discussion?

6 **MR. GIBSON:** No.

7 **MR. SCHOFIELD:** No, it sounds good to me.

8 **DR. ZIEMER:** Sounds good, that's what we were
9 looking for.

10 All in favor, aye?

11 (Affirmative responses)

12 **DR. WADE:** Let me call the roll.

13 **DR. ZIEMER:** Call the roll since we have some
14 on the phone.

15 **DR. WADE:** Well, I know the ayes in the room,
16 but on the phone -- Phil Schofield?

17 **MR. SCHOFIELD:** Aye.

18 **DR. WADE:** John Poston?

19 (No response)

20 **DR. ZIEMER:** We lost John.

21 **DR. WADE:** We lost John. John (sic) Lockey?

22 (No response)

23 **MR. GRIFFON:** Jim Lockey.

24 **DR. WADE:** Mike Gibson?

25 **MR. GIBSON:** Aye.

1 **DR. WADE:** Okay. So we have Gibson and
2 Schofield voting, Lockey -- Jim -- and Poston
3 not on the line.

4 **DR. ZIEMER:** Okay, motion carries. Thank you
5 very much.

6 Do we have any other items to come before the -
7 - the remnant of the Board?

8 **MS. MUNN:** I have one.

9 **DR. ZIEMER:** Wanda.

10 **MS. MUNN:** Due to unbelievably fortunate
11 circumstances, all of the procedure review
12 committee is -- working group is still present.
13 That's Mike, Mark, Paul and alternate Presley.
14 I had mentioned earlier that I'd hoped we might
15 be able to identify a date for a workgroup
16 call, a conference call, where we could take a
17 look at the outstanding procedures which we
18 already have in hand. They've been provided to
19 us by SCA. And identify what date we might be
20 able to take half a day to sit down and go
21 through that list, between now -- hopefully
22 between now and -- and the July meeting on the
23 17th, so --

24 **DR. ZIEMER:** You have a date to suggest?

25 **MS. MUNN:** I would like for us to do that yet

1 this month, if it's possible to do it. I was
2 looking at something like June 27th, Wednesday.
3 Give us a couple of -- of weeks to look at the
4 material we have and give some thought to --

5 **DR. ZIEMER:** I'm okay.

6 **MS. MUNN:** -- advanced thought. Is the 27th
7 okay?

8 **MR. GRIFFON:** If it's early or late, I can do
9 it. Middle of the day is tough for me, but...

10 **MS. MUNN:** Okay.

11 **MR. GRIFFON:** Yeah, early Eastern time.

12 **MS. MUNN:** Yeah, early for you is too early for
13 me, probably. So late is okay, late being
14 after what your time?

15 **MR. GRIFFON:** 4:00 p.m.

16 **MS. MUNN:** After 4:00 p.m. your time?

17 **MR. GRIFFON:** (Unintelligible)

18 **MS. MUNN:** Is that bad for others?

19 **DR. ZIEMER:** Well, are you going to go all
20 evening then or --

21 **MS. MUNN:** No.

22 **MR. GRIFFON:** Well, you may be able to pick
23 another -- better date, I don't know.

24 **DR. ZIEMER:** I'm okay. I mean I'm willing to
25 stay over.

1 **MS. MUNN:** Would you be better --

2 **DR. ZIEMER:** Are -- are we talking about
3 Cincinnati or do you want to go somewhere --

4 **MS. MUNN:** Well, I'm -- for this date I'm just
5 talking about a four -- probably a four-hour
6 phone call.

7 **MR. GRIFFON:** Phone call.

8 **DR. ZIEMER:** Oh, a phone call.

9 **MS. MUNN:** Phone call probably.

10 **DR. ZIEMER:** Oh, yeah, that's -- I thought we
11 were traveling.

12 **MS. MUNN:** Would a day other than Wednesday be
13 better? In the morning? Or are all your
14 mornings tied up?

15 **MR. GRIFFON:** No, Thursday's better, Thursday -
16 -

17 **MS. MUNN:** Thursday better -- Thursday 28th all
18 right?

19 **MR. GRIFFON:** Yeah.

20 **MR. PRESLEY:** (Off microphone) (Unintelligible)
21 can't.

22 **MS. MUNN:** No, not for Bob. He's our --

23 **MR. PRESLEY:** And I'm -- I'm just an alternate.

24 **MS. MUNN:** What about --

25 **MR. GRIFFON:** Wednesday --

1 **MS. MUNN:** -- you, Mike?

2 **MR. GRIFFON:** -- Wednesday if we started it at

3 --

4 **MR. GIBSON:** What time of day did you say,
5 Wanda?

6 **MS. MUNN:** I'm -- I'm -- we're looking at the
7 morning of June 28th for a four-hour --
8 probably -- no more than four-hour phone call
9 talking about SC&A procedure reviews and making
10 some selections about which ones we want them -
11 - we want to talk about them with face-to-face.

12 **MR. GIBSON:** Yeah, I could do the 28th in the
13 morning.

14 **MS. MUNN:** 28th be okay? So we can't get to --

15 **MR. GRIFFON:** I could -- I could do --

16 **MS. MUNN:** -- Presley from anywhere.

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

18 **DR. ZIEMER:** Bad for Presley.

19 **MR. PRESLEY:** That's -- go ahead and have it.

20 I --

21 **MR. CLAWSON:** He's an alternate.

22 **MR. PRESLEY:** -- (unintelligible) go see my...

23 **DR. WADE:** Pick a time, Wanda, see what
24 happens.

25 **DR. ZIEMER:** You're -- you're out?

1 **MR. GRIFFON:** If it was -- actually Wednesday
2 or Thursday I could probably do it if we
3 started at 9:30 Eastern time. I don't know if
4 that's too early for you, Wanda. It's kind of
5 early.

6 **DR. ZIEMER:** 6:30.

7 **MR. GRIFFON:** 10:00?

8 **DR. ZIEMER:** She's up by then.

9 **MS. MUNN:** Up, but not awake.

10 **MR. GRIFFON:** All right, Thur-- Thursday I
11 could go -- you know, start a little later, at
12 10:00.

13 **DR. ZIEMER:** What about Friday?

14 **MS. MUNN:** Well -- well, I guess we have not
15 looked at Tuesday. Would Tuesday the 26th
16 catch everybody? Could we do that?

17 **MR. PRESLEY:** I can do that.

18 **MS. MUNN:** Tuesday the 26th?

19 **DR. ZIEMER:** Yeah.

20 **MS. MUNN:** Let's -- let's do the morning of
21 Tuesday the 26th. Okay?

22 **DR. WADE:** Morning is what time?

23 **DR. ZIEMER:** Morning is what time? I've --
24 I've got a luncheon that day and I --

25 **MS. MUNN:** Oh, you do? Okay.

1 **DR. ZIEMER:** Although I'd be willing to skip
2 it.

3 **MS. MUNN:** If we start 7:00 o'clock my time,
4 that's 10:00 o'clock --

5 **MR. GRIFFON:** Yeah.

6 **MS. MUNN:** -- your time, that's going to take
7 you through lunch, but it may not --

8 **DR. ZIEMER:** That's -- no, that's all right.

9 **MS. MUNN:** -- take us more than two hours.

10 **DR. ZIEMER:** That's all right, I can -- I can
11 skip this one.

12 **MR. GRIFFON:** So 10:00 --

13 **MS. MUNN:** Okay.

14 **MR. GRIFFON:** -- 10:00 on the 26th?

15 **MS. MUNN:** Yes, 10:00 o'clock Eastern time on
16 the 26th.

17 **DR. WADE:** Mike, did you hear that? 10:00
18 o'clock on the 26th of June?

19 **MR. GIBSON:** Yeah, I got that.

20 **MS. MUNN:** And that'll do? Okay. And you have
21 the material from -- from SC&A, all that list
22 of procedure reviews that they've done?

23 **DR. ZIEMER:** Yes.

24 **MS. MUNN:** You have that, Mike?

25 **MR. GIBSON:** Yeah, I believe so. I think it's

1 on my flash drive. I'll look and make sure.

2 **MS. MUNN:** Okay, good. Thanks. I'll verify by
3 e-mail.

4 **DR. ZIEMER:** Thank you very much. Any other
5 items to come before us?

6 **MR. CLAWSON:** Just mine on the Fernald
7 workgroup. Hans Behling has given us the SEC
8 review -- SC&A's review of the Fernald group
9 and I wanted to be able to get the working
10 group together, but we don't have NIOSH so --

11 **DR. ZIEMER:** Let's do it by e-mail probably --

12 **MR. CLAWSON:** Okay.

13 **MR. GRIFFON:** Do it by e-mail, yeah, we're
14 pretty (unintelligible) --

15 **MR. CLAWSON:** Okay, I'll --

16 **MR. GRIFFON:** Yeah.

17 **MR. CLAWSON:** -- send out the e-mail and we'll
18 go from there.

19 **DR. ZIEMER:** Okay.

20 **MR. GRIFFON:** Yeah.

21 **DR. ZIEMER:** Thank you. Any others?

22 **MR. SCHOFIELD:** Okay.

23 **DR. ZIEMER:** If there's no other items to come
24 before us, I declare the meeting adjourned.

25 Thank you very much, everyone.

1
2
3
4

DR. WADE: And thank you all for your service.
(Whereupon, the meeting was concluded at 2:20
p.m.)

1

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

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of June 12, 2007; and it is a true and accurate transcript of the testimony captioned herein.

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

WITNESS my hand and official seal this the 4th day of July, 2007.

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