

1 to be some chemical separation in order to
2 avoid sample self-absorption. There's no
3 doubt in my mind.

4 **DR. NETON:** This is Jim Neton. I seriously
5 doubt they used a liter. It was probably
6 more, a much smaller volume, and you could
7 certainly dry off your organic material with
8 wet ash and with nitric acid or something of
9 that nature. And whether or not there was
10 some sort of a calcium oxalate precipitation
11 to separate out the bulk elements that would
12 not preferentially remove transuranic or
13 alpha-type emitters. You know, it's not that
14 uncommon. I mean, if you look at the HASL
15 manual, I'm sure there are procedures in there
16 for gross alpha analysis of urine. It's more
17 of a screening technique than anything else.
18 It's just much quicker.

19 **DR. BEHLING:** Yeah, I was just curious about
20 the issue of the Americium-241 being an issue.
21 It was always my impression that even when you
22 engaged in gross alpha counting for plutonium
23 that you chemically isolated plutonium.

24 **DR. NETON:** If you want to get plutonium-
25 specific, but the payback, the cost is fairly

1 enormous to start doing plutonium-specific
2 chemical separation. The bottom line is if
3 you can pull out the gross alpha emitters by
4 themselves and demonstrate that there is not
5 much there, you accomplished your mission
6 without going to the great expense of some
7 sort of ion exchange column or solvent
8 extraction process. It's not that uncommon in
9 the early years for them to do those type of
10 analyses.

11 **MR. GRIFFON:** So we're talking in
12 generalities now, Jim. I mean, maybe over the
13 break, Hans, if you haven't reviewed
14 Attachment A completely, maybe you can take a
15 look at that.

16 **DR. BEHLING:** Yeah, I'm actually looking at
17 a document that a Savannah River site internal
18 Technical Basis Manual which has nothing to do
19 with the TBD for the energy employee issue
20 here, and I'm looking here. And for a gross
21 alpha counting they do, in fact, isolate
22 plutonium by using Plutonium-241 as a tracer,
23 et cetera, and chemically separate it.

24 **MR. GRIFFON:** But again, that was Savannah
25 River so maybe --

1 **DR. BEHLING:** I realize that.

2 **MR. ROBINSON:** Excuse me, this is Al
3 Robinson. You know, in the TBD there it turns
4 out that from '52 to '71 for gross alpha, what
5 they did is they did an extraction method
6 using either TBP or a TOPO. And basically it
7 pulled out the plutonium, uranium as well as
8 americium and natural thorium, the major parts
9 of the urine matrix, and allowed it to be
10 counted. So they were all pulled out, but
11 there was some purification, but it was a
12 gross purification of all the alpha emitters.

13 **MR. GRIFFON:** So that's in the TBD?

14 **MR. ROBINSON:** Yeah.

15 **MR. GRIFFON:** Do you have a page number and
16 stuff, and maybe, Hans, you can --

17 **MR. ROBINSON:** That's on page 42.

18 **DR. BEHLING:** Okay, that would clarify it,
19 so I'm not, you know, it's been a long time
20 since I read the TBD.

21 **MR. GIBSON:** This is Mike Gibson. Could I
22 ask one question, too, and I'm certainly not a
23 health physicist, but the size of the sample,
24 I thought I heard someone say one liter.
25 That's, in my task we're just accustomed to a

1 complete 24-hour voiding for a bioassay
2 sample. So if some smaller sample was used,
3 how representative would that be? Would that
4 actually show a representative sample of what
5 you may have had in an uptake?

6 **DR. NETON:** Well, Mike, this is Jim Neton.
7 This issue sort of came up yesterday early in
8 our discussion of the Ames Laboratory where we
9 would, you know, oftentimes it was practiced
10 when spot samples were taken for routine
11 analyses, something less than a 24-hour void
12 was collected. And in fact, that's fairly
13 common even today.

14 Twenty-four-hour voids were collected
15 in response to known incidents. The bottom
16 line is when you take less than a 24-hour
17 void, you do incur some amount of uncertainty
18 in extrapolating to a daily voiding. But all
19 of our internal dosimetry calculations, when
20 they're done, have an assigned geometric
21 standard deviation of three, which
22 incorporates some of that uncertainty.

23 In other words, we don't, none of our
24 internal doses, if they're reasonable
25 estimates of internal dose, are assigned a

1 single value. They allow for the uncertainty
2 distribution to be sampled as part of the IREP
3 process, or as part of the IMBA, the IREP
4 process. And if you recall, if the 99th
5 percentile is used so that the value of POC
6 that is calculated, 99 percent of the possible
7 outcomes are less than the value that we
8 quote. And that would include the uncertainty
9 assigned for the internal dose.

10 **MR. GIBSON:** Well, I mean, and I'm just
11 speaking from my own experience, that's all I
12 have as far as the DOE complex, but even on
13 spot checks or incident checks, it was always
14 a 24-hour sample not just a one-time voiding
15 or a one-liter voiding. It was always a 24-
16 hour sample.

17 **MR. ALLEN:** In the modern era I'm sure.

18 **DR. NETON:** That was Dave Allen by the way.
19 In the modern era that may be true for stuff
20 like plutonium, but not in the early days.

21 **MR. GIBSON:** Who asked me in the modern era?
22 Who was that?

23 **DR. NETON:** That was Dave Allen speaking.

24 **MR. ALLEN:** Yeah, by modern era I mean, you
25 know, after the, say, 1970 or...

1 **MR. GIBSON:** I was at Mound for about 25
2 years, and it was that practice for at least
3 the 25 years.

4 **DR. NETON:** But again, if it were not as I
5 described --

6 **MR. GIBSON:** I'm not trying to be
7 argumentative, but I don't know what you mean
8 by modern times.

9 **MR. ALLEN:** Well, basically, that type, but
10 it's timeframe into the '70s. The '50s, '60s
11 things were a little different as far as
12 trying to every plant sorting out something
13 different it seemed like. But once you got
14 into the '70s with plutonium, I think almost
15 everybody was doing a 24-hour sample.

16 **DR. NETON:** Again, the uncertainty is
17 incorporated into the overall dose estimate.
18 And in fact, the 95th percentile is somewhere
19 around nine times higher than what the best
20 estimate is, and that is sampled and part of
21 the dose, part of the POC calculation.

22 **MR. GIBSON:** Okay, like I say, I'm not a
23 health physicist, and I'm just trying to
24 clarify that for myself. Maybe if I'm off-
25 base, you know, someone's got the expertise

1 and can speak in, but just had that question.

2 **MR. GRIFFON:** Yeah, and that point has been
3 raised before, Mike. I think we've, and
4 they're, you know, we have discussed it and
5 the ways to adjust for it and account for it
6 and added uncertainty in for it. And I think
7 Jim pretty accurately described that.

8 **MR. GIBSON:** Okay, that's fine.

9 **MR. FITZGERALD:** Mark, Joe. Just one quick
10 question that really deals with the overview
11 as opposed to the matrix. On page 44 of the
12 evaluation there's a conclusion that none of
13 the other radionuclides present at Rocky was
14 in high enough quantities to contribute
15 significantly to internal dose. Just as a
16 point of clarification, is there any
17 characterization analyses or anything that
18 would tie that to work-specific activities
19 such as those involved in thorium strikes?

20 I guess I was just curious about the
21 basis for that, you know, pretty much pushing
22 that off the table at this point. Given the
23 fact that it was, did figure rather
24 prominently during the Y-12 analyses, it just
25 seems like we ought to be clear on what the

1 basis of that conclusion is.

2 **MR. GRIFFON:** Right, good point.

3 **DR. ULSH:** This is Brant. In terms of
4 thorium, if you read that paragraph there,
5 Joe, where it talks about the thorium strikes
6 that you mentioned --

7 **MR. FITZGERALD:** Right.

8 **DR. ULSH:** -- those occurred during the mid-
9 to-late 1960s. At that time Rocky Flats was
10 doing gross alpha, and so they did have a
11 bioassay method in place to detect, I mean,
12 that bioassay method would have covered
13 thorium. As I mentioned before, it wasn't
14 generally observed that there was a large
15 potential exposure to thorium, and that's the
16 way they would have monitored it with gross
17 alpha.

18 Is that, I mean, you asked
19 specifically about thorium.

20 **MR. FITZGERALD:** Well, no, I was just saying
21 that there's sort of a list of the minor and
22 trace materials. And I tend to agree that
23 trace materials that were used in the weapons
24 program I can see where the, just the
25 quantities would be so small as not to be

1 significant. But between the thorium maybe,
2 the neptunium, is there an analysis or
3 anything or is it just strictly based on the
4 amount of material handled?

5 **DR. ULSH:** Well, I guess I would base it on
6 the amount of material present. I'm not sure
7 what you mean by --

8 **MR. FITZGERALD:** But was the conclusion
9 based on just the amount of material handled
10 and the fact that, I guess in the case of
11 thorium, you would expect the gross alpha to
12 pretty much encompass whatever exposure the
13 worker would have had.

14 **DR. ULSH:** Right, I think what you're saying
15 is probably accurate.

16 **MR. GRIFFON:** Brant, I don't think you're
17 even in that situation, the way I read this.
18 If you had gross alpha in those years, even if
19 a person was working in those areas where they
20 had the thorium, unless you had specific
21 information, you probably just assumed the
22 gross alpha was, what, plutonium or the most
23 claimant-favorable assumption in that case?

24 **DR. ULSH:** Yes, that is correct, Mark.

25 **MR. GRIFFON:** But you'd never assume thorium

1 I guess is what this statement says, you know,
2 that these were not significant.

3 **DR. ULSH:** We would not assume thorium.
4 Okay, let me put it this way. If it were
5 possible for a worker to be exposed to a
6 multitude of alpha-emitting radionuclides and
7 all we had was gross alpha, we would assign
8 that to the most claimant favorable of the
9 possible choices. And I can't think of a case
10 where that would be thorium, but I'm looking
11 around for someone who's more of an expert to
12 correct me.

13 **UNIDENTIFIED:** I think it would usually be
14 plutonium. I can't think of a case that would
15 be thorium. That wouldn't be an easy high
16 dose already.

17 **DR. ULSH:** Does that answer your question,
18 Mark or Joe or whoever asked it?

19 **MR. GRIFFON:** Yeah, I mean, I can understand
20 that gross alpha would encompass the
21 potential, you know, that you could use the
22 gross alpha to calculate thorium doses, but
23 here you're saying that these nuclides are, as
24 Joe stated, you know, sort of off the table
25 because they weren't of a significant quantity

1 to contribute to the internal dose
2 significantly, and that's a different
3 statement, you know?

4 **DR. ULSH:** Okay, so you're differentiating
5 between thorium and the other ones that were
6 present in lower quantities. Is that
7 accurate?

8 **MR. GRIFFON:** Well, I, no, I'm using thorium
9 as an example. Are all of them, are you
10 saying that thorium, oh, you're saying limited
11 amounts of neptunium, americium, plutonium.

12 **DR. ULSH:** Right.

13 **MR. GRIFFON:** So those are the ones that
14 you're saying are not of significant quantity?

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

16 **MR. GRIFFON:** Okay, I'm brushing over the
17 paragraph quickly. I apologize then, so if
18 you knew that a person was in a thorium area,
19 for instance, and you had gross alpha data,
20 you may reconstruct thorium doses as opposed
21 to just assumed the worst radionuclides?

22 **DR. ULSH:** I suppose theoretically that
23 would be possible although I would have to
24 look at whether we could ever say that a
25 worker was only exposed to thorium and not to

1 something else.

2 **MR. GRIFFON:** Right, so when in doubt, you
3 would defer to the most claimant-favorable
4 nuclide?

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

6 **DR. MAKHIJANI:** Mark, this is Arjun. In
7 some cases -- I think this has come up before,
8 maybe in my own -- in some cases thorium is
9 the worst rated.

10 **DR. ULSH:** Then we would pick it.

11 **MR. GRIFFON:** Okay, and I just don't
12 understand. It's not clear to me how within
13 this, how you determine whether someone was
14 working in the thorium areas. Do you have
15 enough specificity as far as job title,
16 location, timeframes, et cetera to make a
17 determination?

18 **DR. ULSH:** I don't think I could say that we
19 do, Mark. We do know, in general I think,
20 where the thorium was on site. If we could
21 pin a worker to a specific area, we could
22 maybe do that, but I can't say with confidence
23 that we would have that level of detail. But
24 if a particular building handled thorium in
25 one area and plutonium in another area, and we

1 know that a worker worked in that building, we
2 would include all of the possible radionuclide
3 alpha emitters from that building.

4 **MR. GRIFFON:** And again I'm just looking for
5 clarification myself, so thank you.

6 Joe, did you have a follow up on that,
7 or Arjun?

8 **DR. MAKHIJANI:** No.

9 **MR. FITZGERALD:** I think that helps. Again,
10 I think that paragraph had a lot in it. I see
11 that he had two basic conclusions there, but
12 it wasn't clear what the basis of the first
13 was. And you're saying the gross alpha.

14 **MR. GRIFFON:** And I think at this point
15 unless there's anything else pressing in the
16 evaluation report, we can maybe take lunch and
17 come back and start in on the matrix. Is that
18 acceptable?

19 **DR. WADE:** Makes sense. How much time
20 should we take?

21 **MR. GRIFFON:** Can we try to be back by 1:00
22 p.m.?

23 **DR. WADE:** Let's try 1:00 p.m. We'll call
24 back in.

25 (Whereupon, a lunch break was taken, and the

1 meeting resumed at 1:00 p.m.)

2 **MS. MUNN:** And it is page 43, by the way,
3 when he starts talking about gross alpha.

4 **DR. WADE:** Just if I could have all Board
5 members identify themselves. I know Mark, any
6 other Board members besides Mike, Mark and
7 Wanda?

8 (no response)

9 **DR. WADE:** Mark, go ahead. We don't have a
10 quorum, and we've all been identified as to
11 our prejudice.

12 **MATRIX**

13 **MR. GRIFFON:** I think what I'd like to do is
14 go back to the matrix that we worked from in
15 the past work group meetings. And I sent a
16 revised version of that out. I just wanted to
17 make sure that everyone was able to get that
18 including the petitioners, if anyone's on from
19 the petitioners.

20 Did that get to the petitioners, Jim?

21 **DR. WADE:** I asked Jason to send it to them.

22 **MR. GRIFFON:** And now Mark has to find it.
23 I know I've got it in one of my folders here.

24 **DR. MAKHIJANI:** That's the April 10th file,
25 right, Mark? March 27th, 2006, Mark, April

1 10th, 2006.

2 **MR. GRIFFON:** Yeah, March 27th it should say.

3 **MS. MUNN:** March 28th, actually.

4 **MR. GRIFFON:** Does it say 28th? I forgot how
5 --

6 **DR. MAKHIJANI:** Yeah, and in the text it
7 says 28th.

8 **MS. MUNN:** My heading says 28th, too, March
9 28th.

10 **DR. MAKHIJANI:** A different one.

11 **MS. MUNN:** Prepared by ABRWH Work Group
12 March 28th, 2006, in parenthesis.

13 **MR. GRIFFON:** The file name, I think the
14 file name is what Arjun is talking about. It
15 says March 27, but the header should --

16 **MS. MUNN:** Oh, your file name. I'm sorry,
17 Arjun, I'm just reading off the paper that's
18 in front of me.

19 **MR. GRIFFON:** At least I think that's what
20 Arjun was referring to.

21 **DR. MAKHIJANI:** Yeah, the file name says
22 March 27 to April 10th.

23 **MR. GRIFFON:** Anyway that two-day meeting so
24 I got a little confused. If we start with
25 that matrix then it is, the file name has

1 Rocky Flats SEC Issues Matrix March 27, '06.
2 And the header actually says prepared by the
3 work group March 28th, '06. And again, this
4 cross-references back to the February 27th
5 matrix. Just for formatting reasons I didn't
6 include all of the actions from previous work
7 group meetings. I carried them through into a
8 March 28th action.

9 **MS. MUNN:** They were much too cumbersome.

10 **MR. GRIFFON:** Yeah, it was just too unwieldy
11 to carry all that through.

12 So anyway, comment number two, I guess
13 it'll make most sense to go right down this as
14 an overview. You'll see that the, this is
15 much lengthier, and the main reason is because
16 after issue, what previously was called new
17 issue number two and new issue number one, I
18 relabeled those ten and 11. And then from 12
19 on our, the issues that we identified through
20 the review of the petition, many, some of
21 these I should say, have no further action
22 necessary, but I thought we need to capture
23 these in summary form so I tried to do that.

24 So going back up to the top starting
25 with comment number two, I guess just to

1 follow up, the TIB-0049 SC&A was going to
2 review this. Now I don't know if SC&A ever
3 got any formal comments back to the Board or
4 to NIOSH on this.

5 **DR. MAURO:** This is John Mauro. We have
6 reviewed it. We have not submitted formal
7 comments. However, I can say that the
8 discussions and review of the material
9 represent a very scientifically robust
10 approach to evaluating high-fired, the doses
11 from high-fired plutonium when you know the
12 lung burden. We also are aware of a great
13 deal of work and material that NIOSH has
14 prepared are related to when you have
15 information on urinalysis and the, whereby
16 your starting point is the activity in urine.

17 However, the material we saw, of
18 course, that was all part of the working group
19 discussions. We are not aware of a revision,
20 at least I'm not aware of any revisions to
21 OTIB-0049 or any other OTIB where that
22 protocol has, in fact, been adopted or
23 incorporated into any documentation. But we
24 are certainly familiar with the work that was
25 done and have done a great deal of work on our

1 own to independently evaluate NIOSH's position
2 regarding this matter.

3 **MR. GRIFFON:** Are you in a position to
4 provide any of your analysis to the Board or
5 to the work group I mean?

6 **DR. MAURO:** We are planning on doing that as
7 part of our report. That was sort of center
8 stage of some of the work that we were
9 preparing to put together. At the risk of I
10 guess speaking up before we have a chance to
11 put all of our material together, I would like
12 to say that the material that we did review is
13 very compelling. I guess we were expecting --
14 correct me if I'm wrong. I don't think we've
15 seen anything in GI tract yet though nor
16 related to, the marriage between the high-
17 fired plutonium issue when you're starting
18 point is urinalysis and the GI tract protocol
19 and the lymph node protocol. We are, of
20 course, very familiar with the other organs.
21 And of course --

22 **MR. GRIFFON:** I think 1-c, John, 1-c is an
23 action for NIOSH to provide those other, I
24 don't know if it's going to be a different
25 procedure or expansion of TIB-0049, but --

1 **DR. NETON:** Mark, this is Jim. We provided
2 that at the last working group meeting.

3 **MR. GRIFFON:** It was provided, okay.

4 **DR. NETON:** Yeah, on March 21st, 2006. The
5 title was "Approach to Dose Reconstruction for
6 Super Type-S Material. And I went over that -
7 -

8 **DR. MAURO:** Yes, do that, but did that
9 include the GI tract?

10 **DR. NETON:** Yes, it did.

11 **DR. MAURO:** Then my apologies, I must have
12 missed on that.

13 **DR. NETON:** Yeah, it started with TIB-0049
14 and then based on the models that were
15 generated in TIB-0049, and then we adapted 49
16 to adjust from urine data and included an
17 analysis for GI tract, systemic organs and the
18 extrathoracic regions.

19 **DR. MAURO:** As I said, I missed that.

20 **DR. MAKHIJANI:** I have it here. This is
21 Arjun. I can send it to you, John.

22 **DR. MAURO:** Thank you.

23 **MR. GRIFFON:** What I'll say here is SC&A, on
24 both those items SC&A will review and
25 incorporate comments into their final review

1 of the evaluation report. Is that --

2 **DR. MAURO:** That's correct.

3 **DR. ULSH:** Considering the timeframe that
4 we're operating on here, is there any
5 estimated time that we will get comments on
6 that?

7 **MR. GRIFFON:** Well, it's probably going to
8 be the same question as, I don't know, it
9 might be a different question then. Why don't
10 we, Brant, I would ask if we, let's go through
11 the matrix and at the end of this let's
12 discuss process if that's okay.

13 **DR. ULSH:** Okay.

14 **MR. GRIFFON:** Because I know we have two
15 weeks, and yesterday we discussed all kinds of
16 deadlines for Y-12 as well. So I think we
17 only have a finite number of people involved
18 so I think we, let's discuss, if that's okay.

19 And, Lew, I would ask you, too --

20 **DR. WADE:** Sure.

21 **MR. GRIFFON:** -- if we could discuss process
22 maybe at the end. I think that's important,
23 but --

24 **DR. WADE:** Yeah, I think we need to go
25 through those technical issues. We have to

1 take a look back and see what's reasonable and
2 do able.

3 **MR. GRIFFON:** And item 1-b, item 1-b was
4 actually just the fact that you provided the
5 background materials. So that's completed as
6 well.

7 The only reason there's a pause here
8 is I'm trying to do my updates real-time so I
9 don't have to spend hours updating these
10 matrices.

11 **MS. MUNN:** So 1-b now essentially falls
12 under the same response as 1-a, correct?

13 **MR. GRIFFON:** Right, correct, so 1-a and 1-
14 c, those comments will be incorporated into
15 your final comments of the evaluation report
16 for SC&A.

17 And then I'm up to comment number 4, I
18 guess, if we can move ahead on this. Unless
19 there's any discussion of those items while
20 we're on the phone, John, are you, I mean,
21 really, you need to look further at the GI
22 models that were provided?

23 **DR. MAURO:** Yes.

24 **MR. GRIFFON:** So you're not in a position
25 right now to comment or discuss that.

1 **DR. MAURO:** Yes, I'm not in a position right
2 now to comment. I'm not quite sure if Joyce
3 is on the line.

4 (no response)

5 **DR. MAURO:** She has not joined us. She
6 indicated she might be able to join us. But
7 right now from caucusing within our group, I
8 know that we have looked closely at organs
9 other than, well, look at the lung and organs
10 other than the lung but not the GI tract
11 portion of the analysis. So we right now are
12 not in a position to discuss that.

13 **DR. MAKHIJANI:** But John and Mark, could I
14 ask a question about that? I have the
15 document that Jim Neton was talking about. It
16 has two short paragraphs on the GI tract
17 implying that there's more underlying analysis
18 that's where this multiplication factor comes
19 from and so on. Did we get that also or is
20 that --

21 **DR. NETON:** Well, Arjun, I think you're
22 making more technical out of this than there
23 really is.

24 **DR. MAKHIJANI:** Oh, okay.

25 **MR. GRIFFON:** Maybe you can re-explain it,

1 Jim. It might just be that we've got so many
2 sites running through our heads.

3 **DR. NETON:** This whole analysis hinges on
4 the model that was developed that I discussed.
5 The model was developed for TIB-0049 which was
6 the Super, it wasn't only a model, it was a
7 Super-S technique that was developed using the
8 Rocky Flats case number 872 in conjunction
9 with the Hanford one case. In using the
10 clearance parameters developed from those
11 combination of bioassay and in vivo counts, we
12 determined that the maximum difference between
13 the intake retention fraction for S versus
14 Super-S at any time post-intake. It turned
15 out that the maximum difference in those two
16 values was a ratio of four.

17 **DR. MAKHIJANI:** Yes, I remember.

18 **DR. NETON:** So it's very simple, and we did
19 not want to speculate as to which portion we
20 were applying it to so we just decided to use
21 four over all times post-intake and that the
22 genesis of that multiplier.

23 **DR. MAKHIJANI:** Yes, yes, I see that. It's
24 here in Table 1 and in your charts, and, I
25 forgot.

1 **DR. NETON:** After that analysis it's a
2 simple matter of adjusting the intakes by a
3 factor of four and clearing the material to
4 the GI tract with Type-S clearance parameters,
5 which we believe is claimant favorable. So I
6 think it's all outlined there fairly well.

7 **DR. MAURO:** Jim, I'm listening to you and I
8 think that where we have the material we need,
9 and really there's no further clarification.
10 It's just a matter of us looking a little more
11 closely at it to make sure that we all fully
12 understand that all the issues have, in fact,
13 now been addressed.

14 With regard to our having a position
15 on it, we will be writing something up, but I
16 can say that the material you have provided is
17 very compelling and very comprehensive.

18 **DR. NETON:** Okay, thank you.

19 **MR. GRIFFON:** If we, I guess we can move on
20 to item 4 then, number one.

21 **DR. ULSH:** Okay, Mark, this is Brant. If
22 you look at the handout that I prepared, the 5
23 April, 2006 comment responses, the first page
24 there deals with this issue. I think the last
25 time we talked about this at the last working

1 group meeting in Cincinnati in March, we
2 presented some information to demonstrate or
3 to document plutonium isotopic composition.

4 And I think it was Arjun had a
5 question about one of the bullets. That
6 figure is provided on the first page of my
7 comment responses. And the bullet that we're
8 talking about is the one second from the
9 bottom where it says waste stream americium
10 content. And the specific part that I think
11 generated the question was in parentheses
12 where it says the salt waste streams have
13 heavy concentrations of Americium-241. I
14 think that's kind of the thing that generated
15 the question.

16 **MR. GRIFFON:** Yeah, regarding the americium
17 processing I guess.

18 **DR. ULSH:** Yeah, now we've talked about some
19 of that this morning. Let me recap.

20 **DR. MAKHIJANI:** What page are you on? I'm
21 sorry.

22 **DR. ULSH:** Arjun, this is the 5 April 2006
23 comment responses, page one. You might
24 recognize that figure. We showed it last time
25 at the last meeting and you asked the question

1 about the next-to-the-last bullet.

2 The thing that I didn't notice at the
3 time when we were talking about this the last
4 time is up at that top of that figure you see
5 that it says in the second line there, years,
6 1985 to 1987. So in fact, what we're talking
7 about here is the molten salt extraction
8 process and that began at Rocky Flats in 1967.
9 And by that time Rocky Flats was using a
10 solvent extraction process for americium-
11 specific bioassay, which began on an
12 appreciable scale in 1963. So the intakes,
13 any possible intakes that we're talking about
14 from the molten salt extraction process would
15 have occurred during the period when Rocky
16 Flats had americium-specific bioassay.

17 **MR. GRIFFON:** No, no, we did discuss this
18 last time because I asked Roger, well, there
19 must have been some americium processing prior
20 to that, a different process.

21 **DR. ULSH:** Yes, there was. Prior to the
22 molten salt process, Rocky Flats used a
23 peroxide precipitation process and that was
24 from '57 to '67. And during that era we would
25 have used gross alpha to capture americium

1 doses as we discussed this morning.

2 **MR. GRIFFON:** Arjun, any follow up?

3 **DR. MAKHIJANI:** No, I think I understand
4 what is being done. And then this morning's
5 discussion that there are actually gross alpha
6 and americium bioassay kind of addresses the
7 rest of that question.

8 **MR. GRIFFON:** And Brant, I guess that would
9 mean, I'm guessing that if you didn't know the
10 person was involved in americium processing,
11 then you would pick what, the worst
12 radionuclide for the organ of interest?

13 **DR. ULSH:** If we couldn't limit it down to a
14 specific radionuclide, Mark, we would pick
15 from the most claimant favorable among the
16 plausible solutions.

17 **MR. GRIFFON:** Any further questioning on
18 that, Arjun, John, Joe?

19 (no response)

20 **MR. GRIFFON:** Then I think that's --

21 **MS. MUNN:** It was the issues with the
22 americium issues then?

23 **MR. GRIFFON:** I'm sorry, Wanda, I didn't
24 capture that.

25 **MS. MUNN:** So are we now happy with the

1 basic questions about americium?

2 **MR. GRIFFON:** Yeah, I think they've answered
3 all the questions about how that would be
4 handled, right? So I don't think there's any
5 further action on this other than as
6 incorporated into the final evaluation report.

7 **MS. MUNN:** Right.

8 **MR. GRIFFON:** And that answers number two as
9 well I think, correct?

10 **DR. ULSH:** Yes, I think so, Mark.

11 **MR. GRIFFON:** Item one and two are -- Then
12 on to item six. This is the NTA film
13 question, and I know some of this overlaps
14 with the later comments I think, but maybe we
15 can address it at this point.

16 Brant, is there any follow up on this?

17 **DR. ULSH:** Mark, we had, I'm looking at our
18 notes, and let me see. What I have from our
19 notes is that the glass plate calibration
20 issue has been resolved per Mark Griffon. And
21 we talked about that last time. I don't know
22 if SC&A has any --

23 **MR. GRIFFON:** John, is Ron, Ron seemed to be
24 the one that was looking mainly into this for
25 your team.

1 **DR. MAURO:** Yeah, Ron's not here but I got
2 the impression that was closed as well based
3 that the reaction that Ron had on the phone.

4 **MR. GRIFFON:** I believe so.

5 **DR. ULSH:** Yeah, I believe, that's what my
6 notes say as well.

7 **MS. MUNN:** There's some discussion, I can't
8 remember where, in the comments that just says
9 --

10 **DR. ULSH:** About the glass plate issue,
11 Wanda?

12 **MS. MUNN:** No, not about the glass plate
13 issue, just data and corrective dose.

14 **DR. ULSH:** Yeah, it might be included in one
15 of these 17 issues --

16 **MR. GRIFFON:** Yeah, I think it does come up
17 again. We might hit this one again. I guess
18 my feeling was I think we're down to sort of
19 proof of principle here and a sample DR might
20 be useful in this area. I don't know if one
21 of the samples you have covers neutron
22 reconstruction.

23 **DR. ULSH:** Well, we do have neutron -- hold
24 on a minute. Yes, the first example that we
25 have is a hypothetical neutron dose assignment

1 for monitored worker pre-1970.

2 **MR. GRIFFON:** So there you go.

3 **DR. ULSH:** We'll talk about that one.

4 **MR. GRIFFON:** Item number seven then I think
5 we're on to.

6 **DR. ULSH:** According to your action item
7 there we provided the plutonium tetrafluoride
8 calibration information, so I didn't have any
9 action for us.

10 **MR. GRIFFON:** I think all actions are
11 complete on that as well unless, SC&A is there
12 any follow up on that?

13 **DR. MAURO:** I'm going to pass the buck to
14 Joe. I don't. This is John.

15 **MR. FITZGERALD:** This is on comment seven?

16 **MR. GRIFFON:** Yes.

17 **MR. FITZGERALD:** The only thing was the lead
18 aprons issue, and I think the report that you
19 identified and the analysis in that report,
20 and Kathy also looked into this for us. I
21 think we're at a point where we can resolve
22 that issue. I think that was the only
23 question was the lead aprons.

24 **DR. ULSH:** Yeah, lead apron is covered under
25 one of the other issues.

1 **MR. GRIFFON:** Under your comments anyway.

2 **DR. ULSH:** That was a question. You could
3 certainly do it, but the question was whether
4 the lead aprons might compromise that.

5 **MR. GRIFFON:** And I think that does come up
6 later, right, Brant?

7 **DR. ULSH:** Yes, that's covered under one of
8 the other comments.

9 **MS. MUNN:** Yes, it does.

10 **MR. GRIFFON:** So we'll close out seven I
11 think.

12 **DR. ULSH:** Right.

13 **MR. GRIFFON:** Number nine, if you note,
14 halfway down number nine, number five, I've
15 captured the individual items in number five.
16 I've separated them out into items listed
17 further in the matrix because there was some
18 overlap here I think. And I hope I did that
19 appropriately, but so we don't have to have
20 the discussion twice, well start with number
21 one anyway here.

22 **DR. ULSH:** All right, number one, I think
23 SC&A, what it says here is SC&A to review
24 OTIB-0050. I believe they've done that.

25 **MR. FITZGERALD:** Yeah, we had those three

1 specific issues that we discussed in
2 Cincinnati, and you had responses to that. We
3 had Ron Buchanan on the phone. And I think we
4 satisfied those remaining issues. Those were
5 the three issues that remained from that
6 review.

7 **DR. ULSH:** So closed for number one then,
8 Mark?

9 **MR. GRIFFON:** Yup.

10 **DR. ULSH:** Number two is the job exposure
11 matrix, the Rutenber data. I think we agreed
12 that that was not an SEC issue. Is that
13 correct, Mark?

14 **MR. GRIFFON:** That's what it says, believes
15 this is not an SEC issue, right. And I guess
16 I took, I said that NIOSH believes it's not an
17 SEC issue only because I wasn't exactly sure.
18 I think the main utility of that information
19 was going to be for job information.

20 **DR. ULSH:** I can provide you a little bit of
21 an update. I think it was last week Jim
22 Langsted and I visited with Dr. Rutenber at
23 his office in Denver. He showed us the
24 database that he has, and we noted that in
25 particular for his penetrating dose estimate

1 he has not included, he's not been able to
2 include the NDRP data. So I think that what
3 we have is superior for dose reconstruction
4 purposes.

5 You are correct that the primary value
6 of Dr. Rutenber's data would be identifying
7 specific work locations by time period for
8 specific individuals. And that could
9 certainly be useful in some situations, but
10 it's not, our ability to do dose
11 reconstructions will not depend on doing that.

12 **MR. GRIFFON:** It doesn't seem now, and the
13 reason I phrased it that way was because I
14 wasn't sure of your models, but it doesn't
15 seem as though the models you presented would
16 be reliant on job information. That's much
17 more reliant on bioassay information.

18 **DR. ULSH:** That was a very early issue
19 because it wasn't clear how the coworker model
20 was developed. And I think you're right,
21 Mark. I think now that we've seen how that's
22 going to be handled, it's certainly a lesser
23 concern.

24 **MR. GRIFFON:** Right, and I think that's --

25 **DR. ULSH:** Is it closed?

1 **MR. GRIFFON:** I think it's not an SEC issue
2 at this point.

3 **DR. ULSH:** Okay, so closed for terms of, for
4 purposes of SEC action, maybe not for --

5 **MR. GRIFFON:** No further actions I don't
6 think unless others think otherwise.

7 (no response)

8 **MR. GRIFFON:** Okay.

9 **DR. ULSH:** Let's see, number three, NIOSH
10 provided analysis regarding completeness of
11 external exposure data. We talked about that
12 this morning. Since we talked about it this
13 morning, I don't suppose that SC&A has had
14 time to review it.

15 **MR. GRIFFON:** Well, and I think at this
16 point will review and provide comments in the
17 review of the evaluation report. I think that
18 would be appropriate unless, the only question
19 I would have here is if there's anything, I
20 guess that would be issued as supplemental
21 data if you did do more on the internal dose,
22 you know, oh, this is regarding completeness
23 of external exposure.

24 **DR. ULSH:** Right.

25 **MR. GRIFFON:** But if you were going to

1 provide more, I guess it would include review
2 of supplemental, you know --

3 **MR. FITZGERALD:** If I'm right, the external
4 actually is treated in the evaluation. It's
5 the internal that's not fully addressed.

6 **DR. ULSH:** Right, the external, forget it.
7 That's accurate.

8 **MR. GRIFFON:** So I guess I would say that
9 that would be, you know, that SC&A doesn't
10 have to do a separate review. Rather, it
11 would just be included in their review of the
12 full evaluation report?

13 **MR. FITZGERALD:** Okay.

14 **DR. ULSH:** Okay. Number four, NIOSH will
15 provide description of coworker model to be
16 used, provide coworker database analysis
17 files. We do have some example DRs that
18 include coworker for unmonitored external
19 dose. That's example number three. And
20 example number four is internal coworker. And
21 with that I have provided the tables that show
22 the distributions that we would be using for
23 coworker data should we ever find a case that
24 requires it.

25 I don't know, Mark. Do you want to

1 wait and get through the matrix items and then
2 talk about the example DRs?

3 **MR. GRIFFON:** Yeah, I think so. That'll
4 just make it easier. On this I would also say
5 the review would be within the construct of
6 the full review for SC&A.

7 **MR. FITZGERALD:** Just to clarify the earlier
8 description of the model. We were talking
9 about data reliability, but in a sense we're
10 backing into some description of the basis
11 perhaps of using the data for this purpose.
12 Is that what constitutes a description or do
13 we have something additional to that?

14 **DR. ULSH:** Well, there is -- Joe, right?

15 **MR. FITZGERALD:** Yes, hi.

16 **DR. ULSH:** Joe, there is some material in
17 the comment responses, you know, the 17
18 issues?

19 **MR. FITZGERALD:** Right.

20 **DR. ULSH:** There's some material in one of
21 the, maybe a few of the responses there. So
22 between what we've provided this morning in
23 the frame within the framework of the ER and
24 the comment responses, I think that that will
25 be pretty much what we've got for now.

1 **MR. FITZGERALD:** Okay, I just wanted to
2 clarify because again, it wasn't addressed
3 head-on in the evaluation.

4 But I guess just to get back to what
5 you were driving at, Mark, how do we deal with
6 the ancillary information that interprets
7 what's not necessarily fully addressed in the
8 evaluation?

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

10 **DR. ULSH:** Well now, I do want to point out
11 that the evaluation report focused on issues
12 that were brought up in the petition. There
13 are additional issues and expansions of issue
14 that were brought up within the context of
15 SC&A's review of the TBD. And so the ER was
16 no meant to cover those expansions. I mean,
17 we just focused on what was in the petition,
18 so the question still remains, how do we
19 handle that other stuff that was brought up
20 outside the confines of the petition or as an
21 expansion on that?

22 **MR. FITZGERALD:** And I don't know, Mark,
23 maybe you want to take a stab at that.

24 **MR. GRIFFON:** I still think coworker models,
25 well, you know, whether they're, they are

1 addressed in the petition or in the ER report,
2 aren't they to some extent?

3 **DR. ULSH:** I think in the data sufficiency
4 section we talked about that.

5 **MR. GRIFFON:** And I, even though it wasn't a
6 specific issue maybe brought up by the
7 petitioners, I think that.

8 **DR. ULSH:** It's a fuzzy line.

9 **MR. GRIFFON:** Yeah, I guess from my
10 standpoint any issues that we've identified as
11 SEC issues through the work group process
12 should also be rolled into SC&A's evaluation
13 of the petition, you know, of the, I mean not
14 evaluation of the petition, review of the
15 evaluation report. So I would say that unless
16 you think that's inappropriate, I would think
17 that, since through our work group process
18 with you guys on the line, we've identified
19 these things as potential SEC issues with,
20 that they should be included in SC&A's SEC
21 review. Does that make sense?

22 **DR. MAURO:** Mark, this is John. Our plan,
23 I'll give you an example. When I reviewed the
24 Rocky evaluation report, I noticed that
25 reference was made to OTIB-0049 on the high-

1 fired; however, there was -- and correct me if
2 I'm wrong -- the development of the urine-base
3 starting point worked ^ NIOSH and ORAU was not
4 part of the evaluation report. And in fact, I
5 noticed that there is reference, lots of
6 reference in the evaluation report to some
7 ongoing work, reference to OTIBs, such as
8 coworker.

9 Our plan was to use all the
10 information in our review as if it were a
11 supplement to the evaluation report, but
12 nevertheless make a statement in our report
13 that where we note that this material is
14 really not contained in the evaluation report,
15 not is it actually an actual OTIB, for
16 example. So in effect, we will, our attempt
17 was to point out where the evaluation report
18 does not explicitly contain the information or
19 the OTIB itself has not actually been
20 published yet, the material or the substance
21 of it has been provided to SC&A as a result of
22 working group activities.

23 And on that basis we will be able to
24 make certain statements as findings and
25 observations. So we're going to be treating

1 all of this material, including the material
2 that has been provided to us electronically
3 yesterday and today, as part of the universe
4 of material that we're going to draw upon when
5 we write our reports.

6 **MR. GRIFFON:** That's what I was hoping,
7 John.

8 **DR. ULSH:** With the one proviso being though
9 that the SEC evaluation of record from NIOSH
10 cites, for example in this particular case, a
11 particular OTIB for the coworker model. So
12 what we're doing is compensating for not
13 having that available OTIB and drawing from
14 these various sources to glean what the NIOSH
15 approach appears to be. That's not as direct
16 as the reference in the evaluation itself.
17 So, well, we'll have to qualify it certainly.
18 Not certainly a review of that coworker model
19 as it would be contained in the OTIB, but
20 something that would be preliminary to that.

21 **MR. FITZGERALD:** Yeah, we have draft OTIBs,
22 OTIB-0038 and OTIB-0058, which describe the
23 coworker external and coworker internal. I'm
24 not sure I've got, I might have those numbers
25 reversed. And we would be happy to provide

1 those to you like tomorrow.

2 **DR. ULSH:** Resemble what we have pretty
3 closely. That might actually be a little
4 cleaner.

5 **MR. FITZGERALD:** Yeah, I think so.

6 **MR. GRIFFON:** Can you post those on the O
7 drive in their folder in --

8 **DR. ULSH:** Yes.

9 **MR. GRIFFON:** -- Board folder.

10 **DR. MAURO:** By the way -- this is John
11 again. All the more reason, the fact that
12 we're in real time working with material that
13 is being developed as we're working through
14 the problems that we maintain this ongoing
15 communication over the next two weeks because
16 we will be using the material that has been
17 transmitted to us electronically as part of
18 our work. And since a lot of material, for
19 example, is very much in draft form as, for
20 example, we noticed that the uranium-
21 /plutonium-typos, that sort of thing. So I
22 see this as we work through the problem, we're
23 going to have to work very closely with Jim to
24 make sure we have the right material that has
25 been sent to us that it is --

1 **MR. GRIFFON:** With Jim or Brant, yeah.

2 **DR. MAURO:** I guess my plan was to work
3 directly, what I understood is that we make
4 our call to Jim, and Jim becomes sort of like
5 a traffic cop.

6 **DR. NETON:** Yeah, I think for purposes of
7 the Rocky Flats petition though, John, I think
8 Brant's been leading it up.

9 **DR. MAURO:** Okay, so we'll go through you,
10 Jim, for Y-12 and Brant for Rocky.

11 **DR. NETON:** Yeah, I would make sure, keep me
12 cc'd, but I think in this case feel free since
13 time is of the essence and Brant's been taking
14 the lead to deal with him directly.

15 **DR. MAURO:** Okay, very good.

16 **DR. ULSH:** Darn, I thought for a minute
17 there I was off the hook.

18 **MR. GRIFFON:** The other thing I would ask
19 Brant, you said OTIB-0038 and 0058?

20 **DR. ULSH:** Yes.

21 **MR. GRIFFON:** And before you committed to
22 OHIS and a CEDR, OHIS-20 and a CEDR databases
23 or ACCESS versions of those databases being
24 posted --

25 **DR. ULSH:** I will.

1 **MR. GRIFFON:** -- and also I would say the
2 analytical files. I'm sure you have some
3 Excel files that support those OTIBs for your
4 extrapolation methods back calculations for
5 intakes for the internal coworker model, et
6 cetera.

7 **DR. ULSH:** I'll see what Joe can provide.

8 **MR. GRIFFON:** All right, does that, I think
9 that clarifies it then, John. And certainly,
10 John, you're right. We'll keep in close
11 contact on this since we're moving in very
12 real time here.

13 Number five then I think we're on to.

14 **DR. ULSH:** Number five --

15 **MR. GRIFFON:** I was actually going to say if
16 we, I think most of these items I've broken
17 out in further issues at the bottom of the
18 matrix so we can probably discuss them at that
19 point.

20 **DR. ULSH:** So do you want to pass over this,
21 Mark?

22 **MR. GRIFFON:** Yeah, pass over that one.
23 Just someone might want to, I'll try to
24 crosswalk those and make sure that I didn't
25 miss any of them, but I'm pretty sure I lifted

1 all those out of there and put them in the
2 bottom of the matrix. So try number six.

3 **DR. ULSH:** All right, number six, this deals
4 with this question of inappropriate low energy
5 photon detector correction factors.

6 **MR. LANGSTED:** I believe this is a K-16
7 issue.

8 **DR. ULSH:** Okay, I'm going to let Jim
9 Langsted give you an update on that.

10 **MR. LANGSTED:** Okay, I've done some research
11 on this issue, and back in the initial
12 implementation of DOELAP there was a 16 keV
13 photon. It was a fluorescent x-ray technique
14 that they defined as one of the test
15 exposures. There was also a 30 keV x-ray
16 spectrum, 30 keV average x-ray spectrum, that
17 was specified.

18 Since these two are very close
19 together, it became a difficult issue to
20 develop an algorithm that was robust enough to
21 recognize the difference between these two
22 exposure, respond appropriately to these
23 exposure categories and then also respond
24 appropriately to the photons in the more
25 realistic regions that we needed to deal with.

1 So at the time that the algorithm that was
2 developed at a bias associated with it that
3 was somewhere between one percent and ten
4 percent bias. In some cases that was a plus
5 ten percent. In some cases that was up to a
6 minus ten percent of bias in responding at
7 these very low energies. That turns out not
8 to be a significant problem because that's
9 within the recognized uncertainty of the
10 dosimeter badges as we're viewing them today.

11 DOELAP recognized that this was a
12 difficult issue to deal with and has since
13 dropped one of that lowest keV 16 x-ray
14 technique. And since then the algorithms have
15 been refined to give a better response across
16 the spectrum and not have to deal with that
17 careful distinction at those low energies.

18 So the conclusion here is that the
19 response was adequate back when those
20 algorithms were, the initial algorithms were
21 used, and then was refined as the algorithms
22 improved, and turns out not to be an issue.

23 **MR. GRIFFON:** Is this written up in one of
24 your -- I was just looking through the April
25 5th. It's not in those.

1 **DR. ULSH:** No, it's not, Mark.

2 **MR. LANGSTED:** That's correct.

3 **MR. GRIFFON:** I mean, that sounds, you know,
4 I just wonder if we should have some sort of
5 document just to answer that or just a memo
6 just with what you said.

7 **DR. ULSH:** Sure, we can do that.

8 **MR. LANGSTED:** We'll get that to you.

9 **MR. GRIFFON:** Something for the record,
10 that's all. Unless, SC&A, any follow up on
11 that one?

12 **DR. MAURO:** No, but we do appreciate that
13 these kinds of response, our plan right now is
14 to put together a report that effectively
15 starts with the issues as laid out either in
16 the matrix or the petition. And then work our
17 way through NIOSH's position by making
18 reference to the appropriate OTIBs, sections
19 of the TBD, sections of the assessment and
20 other material.

21 So we would like to have a paper trail
22 for every one of the issues. So please, yes,
23 any time we have a response. In fact, this
24 may not be possible, but the transcript of
25 this conversation and yesterday's conversation

1 is really going to be very important to us in
2 the next several days to help us navigate our
3 way through this. So that would be helpful
4 also. I don't know if that's possible.

5 **DR. WADE:** We'll do what we can.

6 **MR. GRIFFON:** Going on to number seven in
7 that same category, issue nine, number seven.

8 **DR. ULSH:** Okay, number seven, let me give
9 you, this is also one of those issue that is
10 included in the, as our responses to the 17,
11 but let me give you the short answer here from
12 my memory because I can't locate it in my 42
13 pages right at the moment.

14 **MR. GRIFFON:** Did you get a written response
15 from the petitioners?

16 **DR. ULSH:** Yes, if you recall, we talked at
17 the last working group meeting. We had sent a
18 letter to Tony DeMaiori, the petitioner, dated
19 March 16th. He had mentioned in his call that
20 he had several investigations, so we wrote and
21 asked him for those on March 16th. Jennifer
22 Thompson stated that we would be getting a
23 letter, and in fact, we did get it the next
24 day. And basically, Tony said that he did not
25 have access to those investigations. And he

1 directed us to a lady named Lisa Bressler^, a
2 Freedom of Information officer.

3 We talked, some of the ORAU team
4 talked to Ms. Bressler. She directed us to
5 some other personnel, DOE and Kaiser-Hill, and
6 our conversations with them are ongoing. I
7 tried a couple of times on Friday to reach her
8 and couldn't. I think it's possible, I'm
9 going secondhand here, but they might have
10 talked to Tony to try to nail down some
11 specifics about what he was talking about.

12 And I think there were some Privacy
13 Act concerns. I think we can iron those out
14 once I manage to get in touch with these
15 additional people. But that's where we are
16 with that right now. And I guess the bottom
17 line is we haven't seen anything that suggests
18 fraud or manipulation of the data, but I have
19 to say that our conversations are continuing.

20 **MS. MINKS:** This is Erin Minks from Senator
21 Salazar's office. Is this a conversation that
22 will be time sensitive to the same timeline as
23 the meeting in two weeks?

24 **DR. ULSH:** I'm sorry, could you repeat that?
25 I didn't hear it.

1 **MS. MINKS:** This is Erin Minks with Senator
2 Salazar's office. The conversation about that
3 documentation with Tony from the Steelworkers
4 --

5 **DR. ULSH:** Yes.

6 **MS. MINKS:** -- is that going to be also time
7 sensitive to the meeting in two weeks? Is
8 that something that is going to be ongoing
9 after this is --

10 **DR. ULSH:** Well, it's hard for me
11 characterize, but our goal is to provide all
12 the information that we can to support the
13 Board. I mean, at least it's on the agenda
14 right now for them to cast a vote so we're
15 going to provide all the information that we
16 have at the time.

17 **MS. MINKS:** Okay, thanks.

18 **MR. GRIFFON:** That's why I was saving the
19 discussion for the, discussion of process till
20 the end of the matrix here to see where we
21 stand sort of. Because I do believe there's
22 some, I'm just wondering if there's some
23 issues that are going to be, that all parties
24 are going to be able to complete in this two-
25 week timeframe. But let's save that for the

1 end and have that discussion once we get
2 through the matrix.

3 **DR. ULSH:** Is there anything else on seven?
4 (no response)

5 **DR. ULSH:** Okay, Mark, do you want me to go
6 on to eight?

7 **MR. GRIFFON:** I think so, yeah. I just
8 think for seven that you're, I added to the
9 action that you're in process of researching
10 this specific investigations mentioned in the
11 letter from Tony.

12 **DR. ULSH:** Well, sort of, I mean, Tony,
13 basically, Tony's letter didn't provide
14 specifics. He just told us to talk to Ms.
15 Bressler, and then she directed us to the
16 other personnel. And I think Tony --

17 **MR. GRIFFON:** I think the process of
18 researching past investigations.

19 **DR. ULSH:** Yes.

20 **MR. GRIFFON:** How about that?

21 **DR. ULSH:** Yes.

22 **MR. GRIFFON:** Maybe not specific.

23 **DR. ULSH:** Number eight, we've talked about
24 this this morning, I think, about where we are
25 with this issue. Demonstrate reliability of

1 bioassay and external database data for the
2 compensation program. And we talked about
3 this issue about Kaiser-Hill doing a QC on the
4 external dosimetry that they provide for
5 individual claimants to us. And we also
6 talked about that there is no roll up reported
7 in that QC effort. That still holds. This
8 morning we talked about, we compared the HIS-
9 20 to raw records for external, and we also
10 compared, for internal, we compared CEDR to
11 HIS-20 and we're in the midst of going from
12 HIS-20 to raw records. So that's where we are
13 with that. That's the update.

14 **MR. GRIFFON:** And we had some discussion of
15 that previously. Any other discussion on
16 that?

17 Ken, is it fair to say that you
18 incorporated further analysis within your
19 evaluation report that we spoke from this
20 morning, right?

21 **UNIDENTIFIED:** Yes.

22 **MR. GRIFFON:** The HIS-20 and CEDR comparison
23 were in separate documents?

24 **UNIDENTIFIED:** That's correct. That's
25 outside of the ER.

1 **MR. GRIFFON:** Is there any further action on
2 this? It sounds like there still is an
3 outstanding action as far as --

4 **DR. ULSH:** I think that there is, Mark.

5 **MR. GRIFFON:** -- the urine.

6 **DR. ULSH:** Yes, going from HIS-20 to raw
7 records for bioassay, I think, is an
8 outstanding action. And I don't know about
9 the external.

10 **MR. GRIFFON:** Well, the external was that, I
11 think I asked, rather that was written up, and
12 I forget the response to tell you the truth.
13 But is that written up or --

14 **DR. ULSH:** Yes, that is --

15 **MR. GRIFFON:** The 30 worker years or
16 whatever.

17 **DR. ULSH:** Yeah, that's included in one of
18 our comment responses to one of the 17
19 questions. When we walk through those, I'll -
20 -

21 **MR. GRIFFON:** So it's within that 17, within
22 that April 5th memo?

23 **DR. ULSH:** Yes, yes.

24 **MR. SMITH:** I have one thing to add. Hello?

25 **MR. GRIFFON:** Yes.

1 **MR. SMITH:** This is Matthew Smith. I did go
2 ahead and add Craig Little's analysis into
3 OTIB-0058. So when you look at that draft,
4 and when it does become a final document,
5 there'll be a couple paragraphs there on this
6 validation issue as well.

7 **MR. GRIFFON:** Okay, thank you.

8 **MR. FITZGERALD:** I guess before we leave the
9 issue is the urine to raw records review, the
10 one we just talked about, is that something
11 that we'd likely see in the timeframe we have
12 or is that perhaps further off?

13 **DR. ULSH:** I hope it's not further off, Joe.

14 **MR. FITZGERALD:** Well, I'm just wondering
15 because in the course of this review,
16 obviously, if it's going to be provided, we'll
17 certainly look for it.

18 **DR. ULSH:** Yeah, is Craig on, Craig Little?
19 (no response)

20 **DR. ULSH:** No, he's not. I'll double check
21 with him. We're going to try. We're going to
22 try as hard as we can.

23 **MR. GRIFFON:** I guess we're on to the next
24 item. Any comment, any further comments
25 there?

1 (no response)

2 **MR. GRIFFON:** Item number ten now, which
3 used to be labeled New Issue One, but I didn't
4 feel like having New Issue One through 30 so I
5 started renumbering.

6 **DR. ULSH:** This is the roll-up issue where -
7 - let's see, only penetrating doses were
8 available prior to '76. I think your action
9 item there spells it out, Mark, and that was
10 an SC&A issue to review the approach?

11 **MR. GRIFFON:** Right.

12 And John or Joe, did you provide any
13 written comments on this?

14 **DR. MAURO:** This was Ron's report. If I
15 recall, there wasn't really anything
16 outstanding. There were a couple of minor
17 comments.

18 Joe, last time we spoke, there were a
19 couple of things that were on the periphery
20 but nothing center stage.

21 **MR. FITZGERALD:** Right, that's kind of what
22 we said a little earlier. That we looked at
23 those particular issues. He had three
24 specific issues, and he had this comment as
25 well. And my notes show that we certainly

1 reached satisfaction with his review at the
2 last working group meeting. So I don't see an
3 outstanding issue on this.

4 **MR. GRIFFON:** I'm going to put no further
5 action on that.

6 **DR. MAKHIJANI:** This is Arjun. Joe, wasn't
7 there a 1970 -- this is maybe a little bit
8 off-base because I haven't been that involved
9 in this, but wasn't there an issue of the
10 specific year of 1970?

11 **MR. FITZGERALD:** Yeah, yeah, we discussed
12 that in Cincinnati, and it was a relatively
13 short period of time, and the explanation was
14 satisfactory. It's like four months in 1970.

15 **MR. GRIFFON:** All right.

16 **DR. MAKHIJANI:** Okay.

17 **MR. GRIFFON:** Okay, I think I'll label this
18 as no further action, if that's --

19 **DR. MAKHIJANI:** Yes.

20 **MR. GRIFFON:** Number 11.

21 **DR. ULSH:** Let's see, this was an algorithm
22 --

23 **MR. GRIFFON:** Oh, don't bother. I think we
24 already addressed this, right, no further
25 action?

1 **DR. ULSH:** Oh, no further action. Okay,
2 good. That gives me, because I was scratching
3 my head about this.

4 **MR. GRIFFON:** Yeah, I think we've addressed
5 that one.

6 **MS. MUNN:** Yeah.

7 **MR. GRIFFON:** Number 12 starts with those,
8 the comments from the petition actually.

9 **DR. ULSH:** So is that the 7/17, Mark?

10 **MR. GRIFFON:** Yes, so that should go to
11 your, it should be in the order that we
12 addressed them last time. So they should go
13 right down your document.

14 **DR. ULSH:** Okay, so how do you want to
15 handle this? Do you want to work from the new
16 document or --

17 **MR. GRIFFON:** Let's work from the matrix,
18 but they should be in the order that you have
19 them in your comments document, too, unless
20 you have a different response. That might be
21 the one difference, but we'll find that as we
22 go, I guess.

23 **DR. ULSH:** Yeah, okay. If you look at the 5
24 April comment responses, the first one we've
25 already covered. That was one from the old

1 matrix. So we'll start on page two with what
2 is labeled Data Integrity Comment Number One,
3 zero entries when badges were not returned.
4 And --

5 **MR. GRIFFON:** Wait now, does that coordinate
6 with number 12 on my matrix?

7 **DR. ULSH:** Yes, I'm sorry, number 12 on the
8 matrix.

9 **MR. GRIFFON:** It is, okay. I just wanted to
10 make sure. I've got to pull both these up at
11 the same time. All right, got it. I'm sorry.

12 **DR. ULSH:** So SC&A has provided, I think --
13 Joe, correct me if I'm wrong. This is from
14 Kathy's trip --

15 **MR. FITZGERALD:** Yeah, we again provided
16 some interim information that was collected
17 and reviewed from that trip. It again was a
18 relatively brief trip, but these are some of
19 the data points about that.

20 **DR. ULSH:** Okay, so you can read SC&A's
21 comment, complete comments, on pages two,
22 three, and then there's some graphics,
23 excerpts of logbooks that were provided on
24 page four and five. And then you get to our
25 response on page six.

1 The new, okay, it's not a new comment.
2 I'm trying to think of the right words here,
3 the new write up that SC&A provided, the
4 expanded write up that SC&A provided cited
5 part of our comment response, but I've
6 provided the complete text of the response
7 here. And specifically I would direct you to
8 a section of our original response that wasn't
9 reproduced, and that is on page seven. At the
10 end of the paragraph it says entries of no
11 data available indicated instances on and on.
12 And that is we concluded that since anomalous
13 readings were investigated, and I think that
14 the excerpts of the logbook that SC&A provided
15 certain show an example anyway that, at least
16 in this case, problems with dosimeters were
17 recorded. So in instances where there were
18 anomalous reading, we contended that the
19 presence of no data available entries in the
20 reports that were given back to the workers
21 don't prevent us from performing dose
22 reconstructions of sufficient accuracy. So we
23 don't see anything new here in the expanded
24 material that SC&A provided that contradicts
25 that, our previous response. And so in our

1 previous response we described how we would
2 handle these situations and that is the
3 assignment of missed dose. Now I don't want
4 to comment on documents that I haven't
5 reviewed yet. And we don't have the complete
6 logbooks. All we have is the excerpts that
7 were provided in SC&A's expansion of the
8 comment. And we would want to do, of course,
9 we would want to do a careful review. But
10 they do provide some evidence, at least these
11 excerpts do, that suspect badge readings were
12 at least recorded.

13 **MR. FITZGERALD:** And we had additional,
14 certainly additional documentation that was
15 coming in. This was just simply a cut to
16 provide what we could within the last week or
17 so.

18 Kathy, are you on the line?

19 **MS. DeMERS:** Yeah, I am.

20 **MR. FITZGERALD:** Is there anything else you
21 want to add to that?

22 **MS. DeMERS:** The records that I reviewed at
23 the Mountain View facility, which were the
24 records that DOE provided, first of all, they
25 didn't give me all the records I requested.

1 And second of all, the ones I did copy are
2 still at Rocky Flats. And there's going to be
3 a couple of additional records that come out
4 of the data that I have received.

5 **MR. FITZGERALD:** Kathy, was there any reason
6 for DOE not providing the records requested?

7 **MS. DeMERS:** I believe they couldn't
8 initially find what I was asking for and by
9 the time they found it, it was the first day
10 of my trip, and they didn't have enough
11 turnaround time.

12 **MR. FITZGERALD:** To respond to, I think,
13 Brant's question though in terms of perhaps
14 the relevancy of the kinds of documents that
15 are being requested to the issue at hand, to
16 give as to what these might show us?

17 **MS. DeMERS:** When I interviewed the
18 petitioners and several other people, there
19 was a continued concern over them working in
20 very hot areas but receiving zero dose on
21 their record or receiving no data available on
22 their record. NIOSH has responded that a
23 dosimetry investigation form would be put in
24 the file in these cases, and to date I have
25 not found one. The reason I'm pulling the

1 secondary data is because workers indicated
2 that the logbooks have some recorded doses in
3 them for periods of time. These were jobs
4 where individuals were assigned special
5 dosimetry.

6 **DR. ULSH:** Kathy, if I could maybe ask you
7 for a clarification? When you're saying the
8 logbooks, are you talking about the logbooks
9 that were used in the field to record the dose
10 rates recorded with field instruments or are
11 you talking about dosimetry logbooks?

12 **MS. DeMERS:** No, I am talking about the
13 contamination control and shift supervisor
14 logbooks. And what I was told is that there
15 is results from, exposure results basically
16 for a particular job.

17 **MR. GRIFFON:** So, Kathy, does this, these
18 excerpts that we have in this document that's
19 Brant's referring us to, these are excerpts of
20 those logs that you're talking about?

21 **MS. DeMERS:** No, the only reason that those
22 were put in there is to demonstrate that there
23 are logs out there that do have notations that
24 the crystal was lost or there was a problem
25 with the reader. Now what needs to be done is

1 they need to take individuals and verify that
2 they did an investigation of those
3 individuals.

4 **MR. GRIFFON:** Right, and you didn't uncover
5 any of that type of information. You
6 requested some maybe, but you weren't able to
7 get to that yet?

8 **MS. DeMERS:** What I didn't get were several
9 dosimetry records from individuals who made
10 claims of mda results or zeros in the petition
11 and the field logbooks that allegedly
12 contained dosimetry results that would
13 contradict with those being reported by
14 dosimetry.

15 **DR. ULSH:** Okay, again, I want to be
16 cautious here because I haven't seen any of
17 these, any of this documentation, but it
18 occurs to me that if you're talking about
19 shift supervisors and contamination control
20 logbooks, that would have been based on survey
21 data. You may not expect that to correspond
22 one-to-one with what would show up on the
23 worker's dosimetry badge once it was read in
24 Dosimetry. But I really can't say beyond that
25 because I haven't seen the document.

1 **MS. DeMERS:** These were some of the records
2 that were not pulled at the time that I was
3 there. And we can get you to pursue them and
4 look into the issue further.

5 **MR. GRIFFON:** I think some of the actions
6 that as we go down the matrix there's a couple
7 specific cases where we asked to try to pull
8 the string. And that's, I think those kind of
9 things will be very interesting in this
10 regard, but I don't know, is there anything
11 more to discuss on this particular item? I'm
12 not sure.

13 **MS. DeMERS:** Well, I guess I have a question
14 for NIOSH. And that question is did you talk
15 to the individuals that provided the
16 affidavits, in the process of doing the
17 evaluation?

18 **DR. ULSH:** I'll get to that a little bit
19 later in the comment responses. We did pull
20 some of the dosimetry records for those
21 individuals. And once we had those dosimetry
22 results, we felt that that was sufficient to
23 cover the issue, to address the issue.

24 **DR. MAURO:** This is John Mauro. I'd like
25 to, I think this is a good point to raise

1 this. In working the problem in terms of all
2 of the issues that are before us, I think an
3 enormous amount of work was done on the
4 technical issues. And NIOSH has put forth
5 some very powerful material that I think has
6 been very compelling going to chest cavity
7 issues, neutron dosimetry issues and also, of
8 course, the high-fired plutonium issues.

9 The area right now where SC&A has been
10 looking closely has to do with the data
11 reliability issue. I think that this is
12 center stage. It's clear that there are a
13 number of records out there that might be of
14 great value to break the ground to obtain
15 review interfacing perhaps with some of the
16 folks that are expressing this concern to run
17 these to ground as opposed to, let's say,
18 looking at records on file that you currently
19 have working with the individuals that are
20 making these claims.

21 I think the, this one issue, data
22 reliability, and the concerns regarding
23 falsification of records is emerging as by the
24 single most important issue related to this
25 SEC petition. I think that to a large extent

1 everything has been done that's humanly
2 possible to address the, which I call, the
3 more technical issues. So I guess I just
4 wanted to put that perspective in so that we
5 put the spotlight on what we believe to be the
6 area that is of greatest concern to us.

7 **MS. MUNN:** This is Wanda. I need to be, I
8 need to have a clarifying point here. I
9 believe I've been hearing from the beginning
10 of our discussion that the dose
11 reconstructions, one of which I tried to do
12 and gave up in total despair early on, will be
13 based on bioassay data not necessarily on
14 dosimetry. Is that, am I incorrect in this?

15 **MR. GRIFFON:** That would be for the internal
16 dose, Wanda, not for external exposures. So
17 you're correct on the internal dose that I
18 think the primary basis will be the bioassay.
19 In vivo may be used to bound, right?

20 Is this right, Brant? I mean, I'm
21 summarizing, grossly summarizing here. But
22 the dosimetry's going to be relied on for the
23 external, certainly.

24 **DR. ULSH:** Yes, that is true, Mark.

25 **MS. MUNN:** I'm having a hard time imagining

1 extreme external dosimetry issues that would
2 not be reflected in the bioassay.

3 **MS. DeMERS:** Well, in this case we're
4 talking about the dosimeter response.

5 **MR. GRIFFON:** Yeah, I can certainly think of
6 some scenarios where you'd have fairly
7 significant external and limited internal. I
8 mean, correct me if I'm wrong anybody, but I -
9 -

10 **MS. MUNN:** No, I understand what you're
11 saying.

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

13 **MS. MUNN:** But it's difficult -- well, never
14 mind. I'll think on that.

15 **DR. ULSH:** As kind of an addendum to John's
16 previous comment, I would point out that we
17 certainly have had conversations with the
18 dosimetry personnel at Rocky Flats and also
19 with, we followed up, at least partially, I
20 mean, to the extent that we have been able to
21 give them a timeframe, we have followed up on
22 the leads that were given to us by Tony
23 DeMaiori.

24 Now we're not at the end of the road
25 on those. I'll be up front with that, but we

1 do, we have had a number of conversations with
2 dosimetry personnel who were actually
3 processing the badges and who actually had the
4 details of how these badges were processed,
5 were recorded, what problems occurred with
6 them. So we have done that. I mean, it's not
7 like we haven't talked to anybody out here.
8 But if you're asking if we have interviewed
9 everyone who submitted an affidavit in the
10 petition, the answer is no. No, we have not.

11 **MR. GRIFFON:** Well, and let's try to go down
12 the matrix a little because there are some
13 specific ones where we asked that we thought
14 would be useful to crosswalk and, I mean, I
15 can recall the radiation technician with a
16 very specific allegation, you know, that I
17 thought would be useful to either demonstrate
18 that the procedures were working or, you know,
19 question whether they were.

20 But I would say the only thing that I
21 would note on number 12 here is I think there
22 were two parts of this. One was to look at
23 specific cases and the other was to look at
24 the systemic problem or potential systemic
25 problem by doing, I think you proposed some

1 statistical approaches of looking at the data.
2 And I don't know if you've looked at that at
3 all, Brant, either. Have you done either one
4 of those?

5 **DR. ULSH:** We tried to do that, Mark. We --
6 let me tell you what we did. We had a number
7 of years' worth of quarterly data that we
8 looked at. And what we were looking for was
9 an indication that as workers approached limit
10 over the year, there would might be a
11 difference in the distribution of their doses
12 by quarter.

13 And that might signify either one,
14 their badges were left in their locker as some
15 workers have alleged or two, the workers were
16 pulled out of the radiation areas as they
17 approached their limits. Both of those would
18 fit such a pattern. We performed that
19 analysis and we didn't see differences between
20 quarters; however, after we talked about this,
21 we decided that, you know, that's not going to
22 be, it's not going to put the issue to bed.

23 And the reason is that in some time
24 periods the most exposed workers, which is
25 where you would most logically expect to see

1 this kind of an issue, they would not be on
2 quarterly badge reads. They might be on more
3 frequent badge reads. And so we didn't feel
4 that that issue really got at what we were
5 trying to do. In addition, we can compare to
6 regulatory limits in place at the time, but
7 that may not get at the issue either because
8 in some situations there were administrative
9 limits.

10 And we really didn't have a way to, on
11 a large-scale basis, tie workers to particular
12 situations where there were administrative
13 limits in place. Those would have been the
14 ones that would have been binding. You know,
15 if a worker approached an administrative
16 limit, he might have been pulled out of an
17 area or, you know, and we just have no way to
18 evaluate that. That's where we are with that.
19 We just didn't feel it was terribly
20 informative.

21 **MR. GRIFFON:** All right.

22 **DR. MAURO:** Where that puts us is when we
23 last spoke quite frankly I was optimistic
24 about that investigation in terms of putting
25 to bed the, I guess the issue had to do with

1 how prevalent was that and making a judgment
2 whether or not it was a deliberate act or just
3 an inadvertent act, but how prevalent was it
4 whereby an individual would go from relatively
5 high readings and then the next cycle go to a
6 zero reading? That, when we discussed it, it
7 sounds like it was a tractable analogy.

8 That is, looking at an individual's
9 records and seeing when the numbers sort of
10 fall off the table indicating that some action
11 was taken, that action could very well have
12 been taking the person off that particular job
13 because he was approaching the regulatory or
14 administrative limit. But having an
15 understanding of the extent to which that
16 happens would give us some insight as to if
17 that was very widespread.

18 Now, what that does, if that's do
19 able, now certainly it doesn't answer that
20 question whether or not there's, and I'll use
21 the word falsification of records or
22 deliberate leaving your film badge somewhere
23 else. But it does go to the frequency with
24 which we have indication that there was some,
25 I guess, abrupt change in activity that

1 resulted in a person going from having cycles
2 where he was accumulating exposures, perhaps
3 approaching some administrative limit, and
4 then that exposure ceased in the next cycle or
5 two or three and then perhaps picking up
6 again.

7 In other words that type of pattern
8 and the degree to which that occurred is
9 indicative of the prevalence. Now if that
10 turned out to be not that prevalent, that in
11 itself is very informative, and perhaps to a
12 large degree could put to bed some of the
13 concerns that we've been hearing. Is it
14 possible just to get some information on those
15 patterns or are you saying that the records
16 are not amenable to that type of an analysis?

17 **DR. ULSH:** Well, John, I mean to do this on
18 an individual basis, I mean, certainly we can
19 look at selected individuals. And in fact, I
20 think one of the later comments deals with a
21 couple of situations like that, but that's
22 only a couple of individuals. Now on a
23 system-wide basis I can tell you what we
24 found, and that was we didn't detect great
25 difference between quarters.

1 In other words, we didn't see a big
2 drop off from the limits in the fourth
3 quarter. But again, that's just quarterly
4 data. Now I can also tell you that the, we
5 basically had accumulative frequency so how
6 many people's badges recorded 50 millirem or
7 less, 100 millirem or less and I can tell you
8 that those histograms were far below
9 regulatory limits in most, there were only a
10 very few that would have been at the higher
11 spectrum, but again, I've got to caution you
12 on what conclusions you can draw from that
13 because the regulatory limits may not be the
14 appropriate limits to consider.

15 **MS. DeMERS:** Can I make a statement here?
16 This is Kathy. You should probably be aware
17 that when someone received excessive exposure,
18 then they were assigned to another area, what
19 they liked to call a cold area. It was not
20 necessarily an area without radioactive
21 material and exposure potential. For example
22 if someone was assigned to the americium line
23 and was receiving too much exposure, they
24 might send him to another area of the 771
25 building which was still involved with

1 plutonium processing.

2 **DR. ULSH:** Okay, wouldn't the idea though,
3 Kathy, be, I mean, it's probably true that the
4 dose potential would not be zero, but the
5 whole idea of the move would be to move him to
6 a lower potential area.

7 **MS. DeMERS:** What I'm bringing that up for
8 is because you're looking for patterns where
9 you have a dose and then all of a sudden you
10 get a drastic drop.

11 **DR. ULSH:** Right.

12 **MS. DeMERS:** And the drop may not be as
13 drastic as you might think it would be because
14 they're still in a radiological area.

15 **MR. GRIFFON:** Yeah, and I think more to the
16 point is your assessment, Brant, that you've
17 got quarterly data and you had weekly
18 exchanges or monthly exchanges. You know, I
19 think it's very hard --

20 **DR. MAURO:** Can't do it.

21 **MR. GRIFFON:** -- if your tool's not
22 sensitive enough to see those differences.

23 **DR. ULSH:** That's kind of my point. I would
24 hate to -- yes.

25 **MR. GRIFFON:** I think that's the primary

1 point which brings me back to step back from
2 that a second. All you have is the CEDR in
3 this case? I'm wondering if the monthly or
4 weekly was ever recorded in any sort of
5 database. I guess if it was, you would have
6 been using it so I'm assuming it's not.

7 **DR. ULSH:** Mark, Jim tells me that HIS-20
8 does contain -- what data?

9 **DR. NETON:** Cycle-by-cycle.

10 **DR. ULSH:** Cycle-by-cycle data after '76.

11 **MR. GRIFFON:** Oh, after '76?

12 **DR. ULSH:** Yeah.

13 **MR. GRIFFON:** And did you look at that for
14 any pattern?

15 **DR. ULSH:** You know, Craig is the one who
16 did this.

17 Craig, are you online?

18 **MR. LITTLE:** I am online.

19 **DR. ULSH:** Where did we get the data that
20 you used, quarterly data? That was claimant
21 data, wasn't it?

22 **MR. LITTLE:** Well, in the one instance it
23 was claimant data, yes. In the other instance
24 it was data that come off of the beta-gamma
25 worksheets that we rolled up into a comparison

1 with the 20.

2 **MR. GRIFFON:** But those are two cases that
3 you tracked, right? I mean, that was looking
4 for patterns or systemic, was it?

5 **MR. LITTLE:** The data that Frank was talking
6 about where we did the histograms came from
7 the, essentially, I think the dose
8 reconstruction database. I don't know if you
9 call that CEDR or not, but it's a summary of
10 all the data that's in all the claimant files,
11 but it is quarterly data. Now there is also
12 in there some cyclic data as fine as weekly,
13 and there's a bunch of annual data.

14 But this we tried to do a summary of
15 some of that and put it into histogram form so
16 that we could cut these histograms on a finer
17 scale. And what we found was that the data
18 got all coded the same way so there's a huge
19 amount of manipulation that has to go on to
20 get the data to the point where I'm looking at
21 all the same thing.

22 In other words there may be a
23 different, for example, in one case it might
24 be week one, week two, week three would be the
25 identifier for the data. That's a weekly

1 badge. In another one it might be one-one, 69
2 though 1769. It's a text identifier that just
3 makes it very hard to sort out without a lot
4 of manual effort.

5 **DR. ULSH:** And I think at the end of the day
6 the biggest problem is, let's say we see this
7 pattern. We see a tail off. We can't really
8 say whether that was because the individual
9 was pulled out or because they left their
10 badge in their locker.

11 **DR. MAURO:** Oh, I agree with that, but if we
12 find out that it's not a very common
13 occurrence where that circumstance arises,
14 that in itself is an important piece of
15 information.

16 **MR. GRIFFON:** Right, I agree with that. But
17 if, and I'm just not sure, Craig, what
18 database were you, well, you're referring to
19 this dose reconstruction database, but is that
20 the CEDR? I'm getting a little confused on
21 what database this is.

22 **MR. LITTLE:** ^ the main port so I can't
23 really give you, I don't really know the
24 answer.

25 **MR. GRIFFON:** Right, okay, but this probably

1 -- the ACCESS databases that you're going to
2 post on the O drive for us, right? These ones
3 we've discussed before.

4 **MR. LITTLE:** And I don't know the answer to
5 that either.

6 **MR. GRIFFON:** Okay. Brant, do you know?

7 **DR. ULSH:** I'm sorry, Mark, can you repeat
8 that? What was the question?

9 **MR. GRIFFON:** I'm just trying to figure
10 which database, I'm not clear which database
11 you were working from for this analysis.

12 **DR. ULSH:** I think it was just claimant data
13 that we had. I don't know, Mark, because we
14 kind of concluded that it wasn't going to be
15 that useful so I didn't really focus too much
16 on it. Why don't I -- how about this? I will
17 get together with Craig and Jim and maybe Ken
18 and see how feasible it might be for us to
19 look at some selected workers in the post-'76,
20 post-'76 timeframe. And these are
21 contemporary workers making these allegations
22 so that might be the right timeframe.

23 **MR. GRIFFON:** That would be from the HIS-20
24 stuff, right?

25 **DR. ULSH:** That would be from HIS-20. We'll

1 see what we can do about conducting, I don't
2 know. I just have to, we'll have to talk
3 about it and see what it would take to do it.

4 **MR. GRIFFON:** Okay, I guess that's as far as
5 we can go with that one. I'm going to leave
6 that as sort of an outstanding action.

7 **MR. FITZGERALD:** Can we summarize the
8 action? It sounds like we have perhaps three
9 different tracks of review. Certainly NIOSH
10 has two, one being the systemic one we just
11 covered. Another one being the contacts with
12 DOE, Kaiser-Hill and basically trying to run
13 down the issues that was. And then, of
14 course, we're looking at data, logbooks, and
15 trying to corroborate through documentation
16 which may have the data to speak to us in a
17 way on separate cases. Is that a fair
18 characterization? There's basically three
19 paths of follow up?

20 **MR. GRIFFON:** And, what, I understood every
21 one except the second one, Joe. What follow-
22 up with Kaiser-Hill?

23 **MR. FITZGERALD:** Well, this is the one that
24 I think Brant was referring to where he went
25 to Tony, and Tony referenced these

1 investigations that were going on, and I guess
2 eventually ended up with Kaiser-Hill and DOE
3 trying to get additional information which has
4 not been forthcoming yet.

5 **MR. GRIFFON:** Those investigations, were
6 they tied to the no data available-type of
7 claim or were they different claims?

8 **DR. ULSH:** I don't know, Mark, because we
9 haven't really got, I haven't heard the
10 specifics from Tony, and I haven't been able
11 to get in touch with the DOE people yet or the
12 Kaiser-Hill people.

13 **MR. GRIFFON:** I don't really know that under
14 the past action items, but I agree with the,
15 at least those other two that, the
16 investigation of the systemic review, SC&A has
17 continued to look for the field data. And I
18 think that there's also an action for NIOSH to
19 check specific cases where available. And
20 some of those come out in actions below this
21 in the matrix.

22 **MR. FITZGERALD:** But all of it comes out
23 here. I guess that's why. It sounds like
24 your pursuit through Tony to Kaiser and DOE is
25 looking at particular cases, Brant?

1 **DR. ULSH:** I believe so. I hope so. That's
2 what we asked Tony for so I hope that's what
3 he's got in mind.

4 **MR. GRIFFON:** Okay, so maybe that is in
5 there, okay.

6 **DR. MAURO:** Mark, this is John. I think
7 from SC&A's perspective, we've run this I
8 think as far as we could. I know that some
9 additional material might be coming in to
10 Kathy DeMers, but Kathy, I guess I'd pose a
11 question to you. Are we at a point where we
12 really are passing off the baton? This is as
13 far as we were able to take it in order to get
14 documents to discuss these matters with some
15 of the petitioners, and you've documented very
16 nicely in your April 5th trip report. Are we
17 at a point now where we're really, have done
18 what we can do or do you, Joe and Kathy, do
19 you envision there are more things that is
20 appropriate for us to do at this point?

21 **MS. DeMERS:** I think that we need to pull
22 the logbooks that I requested and the files,
23 and I've spent a lot of time talking to
24 individuals who have provided affidavits in
25 the SEC petition and for NIOSH to go back and

1 do that. They would also have to potentially
2 start over in that process.

3 **MR. GRIFFON:** Kathy, did you, I'm sure you
4 did, but I don't know if you provided that in
5 your trip report that sort of interview notes
6 with those individuals that you talked to?

7 **MS. DeMERS:** I integrated them into the
8 answers, but the interview notes are not
9 complete --

10 **MR. GRIFFON:** Because I wonder if you
11 received these items you requested, I think I
12 agree with John, is that you've sort of
13 uncovered some questions. You've pulled the
14 string on this a bit, but essentially I think
15 it's NIOSH's role to investigate further. You
16 know, SC&A's in the position of providing the
17 review of NIOSH's products.

18 So is that sort of where you're going,
19 John, with this?

20 **DR. MAURO:** Exactly, in other words, if Joe
21 and Kathy are at a point where, well, there
22 are a few more things that are sort in the
23 pipeline right now, might as well let that
24 come to closure. But at that point I think we
25 stop and just communicate, this is where we

1 are, this is what we have --

2 **MR. GRIFFON:** And provide the materials to
3 NIOSH, right.

4 **DR. MAURO:** -- this is what we envision
5 might be good follow up, and then we just
6 leave it with the working group.

7 **MR. GRIFFON:** I agree, or and provide those
8 materials to NIOSH.

9 **DR. MAURO:** Exactly.

10 **MR. FITZGERALD:** Now the only dilemma, just
11 since we're on the subject, I think both NIOSH
12 and SC&A are both waiting for things that we
13 don't necessarily control in terms of access
14 and timing. I suspect we will get what we
15 want from DOE, but I can't say when and that's
16 the only issue. Certainly, how far does one
17 go and how long does one wait. And we
18 certainly don't know how long that's going to
19 take. So I think we both, NIOSH and SC&A,
20 have similar issues, at least in that regard.

21 **DR. MAKHIJANI:** This is Arjun. Kathy, are
22 there documents you've gotten in the last week
23 that might kind of exemplify some of the
24 issues a little bit farther?

25 **MS. DeMERS:** From the standpoint of --

1 **DR. MAKHIJANI:** From the standpoint of, you
2 know, whether there were pressures at the
3 plant of the type that the petitioners are
4 talking about to alter the data, you know, to
5 promote production or for other reasons, or
6 whether any of the documents show some of that
7 or don't?

8 **MS. DeMERS:** I actually have a statement
9 that I wanted to read that I was saving for
10 later, but it kind of shows or it creates
11 questions about how important ^ was over
12 production and what it is is the Atomic Energy
13 Commission has issued a letter.

14 **COURT REPORTER:** Kathy, I'm sorry, this is
15 Ray. I'm getting a real bad noise out of your
16 reception. I don't know if it's just me or
17 what.

18 **MS. MUNN:** It's not just you.

19 **MR. GRIFFON:** And I can hardly hear you.

20 **COURT REPORTER:** Yeah, it's hard to hear
21 you.

22 **MS. DeMERS:** Can you hear me now?

23 **COURT REPORTER:** Well, you're louder, but
24 that noise is still in the background.

25 **MR. GRIFFON:** Are you on speaker or not?

1 **MS. DeMERS:** No, I'm on.

2 **MR. GRIFFON:** Is it bearable, Ray? Or can
3 you...

4 **COURT REPORTER:** Yeah, if, Kathy, I hate to
5 ask you, but you'll just speak as loudly as
6 possible, that'll help.

7 **MS. DeMERS:** Or I could try and call back
8 in.

9 **COURT REPORTER:** I don't know what's going
10 on. It sounds like there's a big machine
11 behind you.

12 **MS. MUNN:** It may not be her line. I heard
13 it when she was not speaking.

14 **COURT REPORTER:** Oh, did you? Okay.

15 **DR. WADE:** Well, why don't we just try,
16 Kathy, if you could speak loudly and let's see
17 how we do.

18 **MS. DeMERS:** Okay, there was a letter issued
19 from the Atomic Energy Commission to the union
20 March 3rd, 1970. And there were several items
21 that were listed in this memo, but what I
22 wanted to bring your attention to was an item
23 about the TLD dosimeter. And this reads, "The
24 new thermoluminescent dosimeter, TLD,
25 personnel badge for neutrons is an excellent

1 one, but it will not be put into use because
2 (a) it is too expensive, and (b) the more
3 accurate reading from this new dosimeter will
4 pose a radiation exposure control problem
5 which could close down certain operations and
6 Production will object."

7 Now obviously, they went on and they
8 implement TLDs in several buildings and then
9 eventually spread out from there. But I guess
10 the question is what does this statement mean
11 with respect to questions on work practices
12 and dosimeter assignments? Are you still
13 there?

14 **DR. WADE:** Yes, go ahead.

15 **MR. GRIFFON:** We're still here but we just
16 have a -- They're very challenging calls,
17 aren't they?

18 **DR. WADE:** It'll stop in a minute.

19 **MS. DeMERS:** And this --

20 **MR. GRIFFON:** What timeframe did that say,
21 Kathy, if I can ask you again?

22 **MS. DeMERS:** March 30th, 1970.

23 **DR. ULSH:** This is Brant Ulsh. First of all
24 I'd like to see a copy of that. If you could
25 send that over to us, Kathy, that'd be great.

1 We'd like to review it. Second point is that
2 in 1969 and '70, they did, in fact, institute
3 the TLDs in '71 for neutron. I really can't
4 comment any further because I don't have the
5 letter in front of me, but I'd sure like to
6 see it.

7 **MS. DeMERS:** Okay.

8 **DR. ULSH:** And I guess that's all I can say
9 at the moment.

10 **MR. SMITH:** This is Matt Smith in Richland.
11 I helped set the job for the future. I know
12 Jack Fix is not available right now because
13 he's talking with other OCAS members, but you
14 know, he wouldn't ^ from a Hanford perspective
15 and likewise the ^, the historical things that
16 went on across the complex at this time. And
17 Brant, I recommend at some point we interface
18 with Jack on that a little bit.

19 **DR. ULSH:** Okay.

20 **DR. MAKHIJANI:** This is Arjun. The thing
21 that this call kind of brings up is the
22 question, you know, in a way it's a question
23 of whether you believe what's on the paper or
24 whether there's more to what the workers are
25 saying in their statements and affidavits.

1 additional pay.

2 **MS. MUNN:** That was common.

3 **MR. GRIFFON:** Yeah, we heard that, yeah.

4 I guess, Brant, I mean, I think I'm
5 with you, Brant, on the fact that we need to
6 see this memo. And I think I'll go back to
7 John's original proposal which was if Kathy,
8 if you and Joe can sort of roll up what you
9 found into a mini-report I guess I'd call it,
10 and any, and also forward any additional
11 materials to NIOSH and the Board on this
12 related to this topic, then we can go from
13 there.

14 I mean, it's hard to sort of comment
15 on a memo that we're, I think we need to look
16 into that more, and maybe if you can provide,
17 and then I think, as John was suggesting, I
18 think it's appropriate that you've identified
19 some things. It's up to NIOSH to follow up on
20 or respond to. Does that make sense?

21 **DR. ULSH:** I'd like a clarification. If
22 there are action items here for NIOSH other
23 than -- let's see, I think we were going to
24 check out the plausibility of doing a
25 statistical analysis on the post-'76 data from

1 HIS-20.

2 MR. GRIFFON: Right.

3 DR. ULSH: Is there another action item
4 here?

5 MR. GRIFFON: The only other action item I
6 have outstanding which is that you'll track
7 specific no-data-available cases, but that was
8 sort of, it's not stated in the matrix, but
9 it's stated later in the matrix. That was
10 sort of, you know, where possible was the
11 underlying construct of that. And then to
12 review the database for systemic. And that's
13 what you're saying. You're going to do post-
14 '76 now. But the other action I'm adding to
15 this matrix item is that SC&A has conducted
16 interviews with some individuals at the site
17 and has recovered some additional materials,
18 logbooks, et cetera, pertinent to the topic
19 and will provide a report and materials to the
20 Board and NIOSH.

21 DR. ULSH: Okay, so is this the thousand or
22 so pages, Kathy, that we're talking about?

23 MR. GRIFFON: I don't know how extensive
24 this is. Did she say?

25 MS. DeMERS: With respect of tracking down

1 back to the secondary records?

2 **DR. ULSH:** Let me look here. I thought that
3 at some point you said you identified a lot of
4 records. They were being shipped. Yeah, here
5 it is. On page 41 in your response back
6 there, I'm sorry, your comment, it says that
7 as previously mentioned approximately 1,000
8 records are being shipped to SC&A and required
9 review. Are we talking about the same
10 material here?

11 **MS. DeMERS:** I think we're talking about the
12 secondary field records. The records that
13 have not been pulled yet.

14 **MR. GRIFFON:** Right, but what are these
15 secondary field records related to? These are
16 the logbooks? What are these records?

17 **MS. DeMERS:** These are logbooks which
18 correspond with time periods when an
19 individual is on a particular project that
20 allegedly contains information on personnel
21 dose.

22 **DR. ULSH:** Is this material that SC&A has
23 asked DOE for, and they have not received it
24 yet and they will be receiving it in the
25 future?

1 **MS. DeMERS:** This is material that I
2 requested that they pull. And when I was
3 there, they had not pulled it. There is also
4 material that I copied while I was at Rocky
5 Flats, and that is still sitting at Rocky
6 Flats. There's probably a records box full.

7 **MR. GRIFFON:** I guess what I'm trying to get
8 a handle around is is there some sort of, you
9 know, summary conclusion that SC&A can come
10 to? And I'm not saying right here this minute
11 on the call. But if there's some point short
12 of just waiting for all the records to come
13 from DOE because I have the same concern that
14 Joe mentioned with that. That that's sort of
15 an indefinite timeline, but based on your
16 field interviews and some data that you were
17 able to look at, we've got the following
18 concerns on this issue. I mean, is there some
19 way that SC&A can put together a report like
20 that in short order, and then say, in addition
21 to that say we've also requested further
22 documentation including the following items
23 which are still outstanding?

24 **MS. DeMERS:** I can certainly pull together
25 my concerns and the roadmap that I was going

1 to follow. Have all those records been
2 pulled?

3 **MR. GRIFFON:** Because I think that's
4 important because it may be that if you boil
5 this down to an issue, Brant and the NIOSH
6 team may look at it and say, we think we've
7 addressed this already, and here's why, you
8 know, as opposed to just everybody just
9 sitting and waiting for further records to be
10 pulled. I just want to make sure that we know
11 what all this is leading to maybe. You can't
12 tell until you have all the data, too.

13 **DR. MAURO:** Mark, the only concern I have is
14 to clarify this thing a little bit more is I
15 think Brant and his folks have done a good job
16 of following this thing along with the issue-
17 by-issue analysis, and I understand frankly
18 the position that I'm reading which is we have
19 not provided anything singular or new or
20 sufficiently compelling to change the
21 position, I think, that NIOSH has taken. And
22 at this point I would agree that that stuff, a
23 lot of the material should be ^.

24 So the question I would have is in
25 order to establish whether there's anything

1 compelling on this particular issue, we almost
2 would be relying on some of the information
3 which is forthcoming. And my only concern, I
4 expressed it before, it's not clear since we
5 don't control DOE processes and stuff, how
6 soon we could expect to have it and whether it
7 would be in time to provide the Board the
8 analysis you're talking about.

9 I'm just trying to put this on the
10 table because I think that's kind of where
11 we're at. That Kathy's done a great job of
12 identifying what's there and what should be
13 looked at, but the logistics of getting it and
14 looking at it, if, in fact, we're in real time
15 now, is a big concern.

16 **MR. GRIFFON:** Is any of this classified? Is
17 it going to classification review? Is that
18 part of the delay?

19 **MS. DeMERS:** No, there has been no
20 indication that it's classified.

21 **MR. GRIFFON:** It's just a matter of shipping
22 the box, or is it a matter of the contents of
23 the box?

24 **MS. DeMERS:** There's really two separate
25 issues. Rocky Flats needs to ship the boxes,

1 the box of information that I copied while I
2 was there, but that's one situation. And then
3 there's an issue where we need to pull the ^
4 they request and the dosimetry logs, and you'd
5 have to get them copied.

6 **MR. GRIFFON:** Who's we? I mean, is that,
7 did you leave specific logbooks that you
8 wanted copied and they just have to do it for
9 you?

10 **MS. DeMERS:** No, they have not pulled them
11 yet.

12 **MR. GRIFFON:** But have you identified the
13 specific ones that you --

14 **MS. DeMERS:** Yes.

15 **MR. GRIFFON:** -- would like, or you have to
16 -- you have?

17 **MS. DeMERS:** Yes.

18 **DR. MAURO:** Kathy, this is John --

19 **MR. GRIFFON:** It may be something that NIOSH
20 can help facilitate as well.

21 **DR. MAURO:** As a point of clarification, I'm
22 looking at your Rocky Flats interview and
23 records review report that was sent out under
24 Joe's signature on April 5th. There's a Table
25 1 in there that appears to list a number of

1 documents, goes on for a couple of pages. And
2 it appears that, am I correct that that list
3 of documents, as far as you can tell on the
4 list of documents that you think need to be
5 obtained and reviewed, or is there more than
6 that?

7 **MS. DeMERS:** There are, I think I would
8 narrow that list down a little bit, and we
9 also need to pull the logbooks from Building
10 779 for a period.

11 **DR. MAURO:** I think the thing that would be
12 helpful is if we could have a very crisp
13 recommendation in effect based on your site
14 visit. What I'm hearing is you have
15 identified a number of documents that you
16 think might be important. I think that list,
17 and basically our recommendations regarding,
18 to the working group should be provided to the
19 working group as a recommendation for follow
20 up. That this material may contain
21 information that will help to bring closure to
22 the data reliability issue.

23 **MR. GRIFFON:** I guess that's what I'm asking
24 for, John, a report and recommendation and why
25 you believe it's important to this issue.

1 **DR. MAURO:** And I think we're close to it
2 because in looking at the minutes of the site
3 visit, it looks like a lot of that material is
4 there. It maybe just a matter of repackaging
5 it in a way as almost like a recommendation to
6 the working group and of course to NIOSH that
7 perhaps they may want to look into this,
8 perhaps meet with certain individuals.

9 In other words, the way I see this is
10 in the end it's going to be data reliability
11 and the trust that the petitioners have that
12 we have tried, you know, turned over every
13 rock possible. We're where the credibility of
14 this process is going to lie. And it seems to
15 me that Kathy is saying to us there's an awful
16 lot of stuff we still have to do.

17 And when I say we, I guess I really
18 mean NIOSH, that she has uncovered as a result
19 of that visit. If NIOSH has already done that
20 or if that's well underway, all well and good.
21 However, I think we owe it to the working
22 group and NIOSH to communicate this clearly,
23 some of the things that we found out and the
24 actions that we think would really benefit the
25 process.

1 **DR. ULSH:** And, John, I would add to that if
2 this report relies on documentation that
3 you've uncovered that we don't have, if you
4 could provide that with the report so that we
5 can evaluate it that would be --

6 **DR. MAURO:** Absolutely.

7 **MR. GRIFFON:** I think that's --

8 **MR. ELLIOTT:** This is Larry Elliott. I
9 agree with your comments there, John. And if
10 in that crisp conclusionary summary if we can
11 have a better sense of what the concerns are
12 related to regarding data reliability, maybe
13 that will help us determine if we've already
14 seen the information or if we need to go out
15 there and perhaps look at this box before it's
16 transferred to Kathy, wherever she's asked for
17 it to be sent.

18 **DR. NETON:** Yeah, this is Jim Neton. I'd
19 like to make a follow up.

20 **MR. ELLIOTT:** No, I just think if we can get
21 a better understanding of what aspect of data
22 reliability, this information might reflect
23 upon, that would enable us to do a better job
24 as well.

25 **DR. NETON:** Larry, that's exactly what I was

1 going to say. This is Jim Neton. We need to
2 have a good sense as to what these shift logs
3 and whatnot are believed to contain that will
4 shed light on these issues because I frankly
5 have looked at a number of such logs, and I
6 think I can't make the connection. And I'm at
7 a loss, so it would be interesting if they
8 summarize that very precisely in the analysis
9 as to what light is going to be shed on these
10 issues with these data.

11 **MS. DeMERS:** May I make a suggestion? If we
12 pass the torch to NIOSH that they actively
13 allow the petitioners to be involved in the
14 process.

15 **MR. GRIFFON:** I think first you need a crisp
16 recommendation.

17 **MS. DeMERS:** Yeah, I realize that.

18 **MR. GRIFFON:** And NIOSH has to decide
19 whether they're going to pick up the torch
20 sort of. I mean, I think that's what you're
21 saying, Jim and Larry, right?

22 **DR. NETON:** Yeah.

23 **MR. ELLIOTT:** Yes.

24 **MR. GRIFFON:** Let's weigh this first and
25 make an argument to the work group and NIOSH,

1 and I would say within the next several days
2 we'd like to see that sort of argument, John,
3 if you can pull up a brief, crisp report on
4 this within the next several days. Then we
5 have to make a decision on path forward here
6 certainly in the near future.

7 **DR. MAURO:** In my mind this is, on the Rocky
8 Flats petition, this is the highest priority,
9 that we get this material to you in the right
10 form so that you folks can make the judgments
11 you need to make going forward.

12 **MR. GRIFFON:** And as Jim said, if it's
13 related to data reliability, what specifics
14 of, what specific aspects of data reliability
15 I guess. Is it the no data available issue?
16 Is it the, you know, is it only focused on
17 that or is it broader than that. You know,
18 you can describe that in your report. Is that
19 fair? Can we move past that one at this
20 point?

21 **MS. DeMERS:** Yes.

22 **MS. MUNN:** It's hard to imagine what data is
23 likely to be gleaned from these documents that
24 would substantiate the concerns many of the
25 claimants have with respect to falsification

1 of data.

2 **MR. GRIFFON:** Well, that what, yeah, and
3 maybe it's other areas of data reliability
4 that they want to get at.

5 **MS. MUNN:** That's really the bottom line,
6 isn't it? Is there anything that
7 substantiates those claims?

8 **DR. MAURO:** Wanda, this is John. I'd like
9 to take that a step further. I think the very
10 process of doing this and interfacing with the
11 individuals that have expressed this concern,
12 have given us the information that there might
13 be something important there in these
14 documents. That in itself is an important
15 part of the process.

16 It may turn out that after we go
17 through this process, and it looks like a list
18 of perhaps 20 documents and perhaps a thousand
19 more pages altogether. I think when we go
20 through that process itself, the process
21 itself is going to lend credibility, and we
22 may very well uncover important information.
23 But I think there's no choice but to go
24 through the process.

25 **MS. MUNN:** Yeah, I think you're probably

1 correct as long as we are focused specifically
2 on charges that have been made or plans that
3 have been made and not try to prove a
4 negative. That's almost impossible to do.

5 **MR. GRIFFON:** Okay, I think we, let's move
6 on to 13. I think there's a couple other
7 actions that are similar to this number 12,
8 too, but let's go on to 13 and try and work
9 our way through the matrix before we run out
10 of time in the day here.

11 **MR. PRESLEY:** Hey, Mark, Bob Presley. I've
12 been back on for about an hour.

13 **MR. GRIFFON:** Hi, Bob.

14 **MS. MUNN:** Welcome back. Yes, it seems to
15 me that all those items on the next page, 13,
16 14, 15 are all sort of a, they're all sort of
17 in the same box as 12, aren't they?

18 **MR. GRIFFON:** Several of them relate, yes,
19 although a couple are very specific. Let's
20 just walk through them and hopefully they'll
21 go faster than 12 in most cases.

22 Brant, number 13.

23 **DR. ULSH:** Yes, number 13 corresponds to I
24 guess the SC&A comment that starts on page
25 seven of the 5 April responses. And SC&A's

1 expanded on their previous comment on page
2 eight there. And our response is at the
3 bottom of page eight. Basically, in our
4 previous response we said that since instances
5 where badges were missing, crystals were
6 investigated, we contend that this does not
7 prevent NIOSH from performing dose
8 reconstructions with sufficient accuracy.

9 We don't see anything in the new
10 expansion that would make us reconsider that.
11 In fact, the logbooks actually show places
12 where badges were processed that had missing
13 crystals. I'm sorry, the excerpts of the
14 logbooks, so that offers material support for
15 what we said, and it was that at the time of
16 the reading, the badges were sometimes missing
17 crystals or contained damaged or contaminated
18 crystals. SC&A has questioned the meaning of
19 no crystal in the logbook, but --

20 **MS. DeMERS:** Well, that was a quote.

21 **DR. ULSH:** A quote?

22 **MS. DeMERS:** Yeah, from the logbook.

23 **DR. ULSH:** Yes, in the logbooks there are,
24 at least in the excerpts that were provided
25 back on page four and five, I believe -- well,

1 I don't know. I'm looking now and I don't see
2 anything that says no crystal, but let's say
3 that -- I don't know.

4 Okay, I think it's fair to say that no
5 crystals probably did appear in a logbook
6 somewhere and that would seem to us to
7 indicate that a crystal was missing. I don't
8 know.

9 **MR. GRIFFON:** But you're still saying that
10 wouldn't preclude you from --

11 **DR. ULSH:** Exactly.

12 **MS. DeMERS:** I guess my concern is, yes,
13 there are other logbooks that say, quote, no
14 crystals, unquote. My concern is in reviewing
15 several files I'm not seeing a dosimetry
16 investigation form in those files. And what
17 would be useful is if you took those problem
18 dosimeters and followed through to make sure
19 that that dosimetry investigation is in the
20 files and is being provided to NIOSH.

21 **DR. ULSH:** I'm not certain that in instances
22 where a crystal was missing, that you would
23 find an investigation report in the claimant's
24 file because what would occur is that they
25 would calculate a dose from the other crystals

1 that were in the badge as shown the excerpt of
2 your logbook here.

3 **MR. GRIFFON:** Brant, I don't disagree with
4 what you just said, but your response says
5 that these situations were investigated if you
6 look in the matrix. Your previous response
7 says it. I would tend to think that that
8 might not require an investigation, whereas
9 number 14 where you might have an elevated
10 one, that would be more of an investigation
11 situation.

12 **DR. ULSH:** Yeah.

13 **MR. GRIFFON:** I don't know if you want to,
14 you know.

15 **MS. DeMERS:** There are several issues that
16 are listed in the logbooks. It's not just
17 missing crystals. What do you do in the case
18 of bad crystals? What do you do when the
19 crystals are switched? And all I'm wondering
20 is have you gone and verified that these
21 dosimetry investigation forms are in files of
22 individuals that have dosimeter issues?

23 **MR. LANGSTED:** This is Jim Langsted. And
24 you have to look at the periods of time here
25 that we're talking about. The procedures that

1 are quoted here are procedures from the mid-
2 '90s, and from 1990 on, the whole DOE-nuclear
3 industry became much more proceduralized than
4 it was in the previous years. The logbooks
5 that were looking at here are from the mid-
6 '80s, and there was not that level of
7 proceduralization and documentation. It's
8 unlikely that you will find any sort of report
9 in the worker's file resolving that crystal.

10 **MR. GRIFFON:** Well then, Jim, I think you're
11 answering the follow-up question because I had
12 asked in the previous work group whether, at
13 the bottom of the matrix, NIOSH will determine
14 if a similar procedure existed for earlier
15 time periods.

16 **MR. LANGSTED:** And what we did find, Mark,
17 was in the mid-'80s there was a procedure. It
18 was one of the first procedures I recall that
19 were written formally on running the dosimetry
20 operation. And it did talk about if you had
21 dosimetry problems, take that issue to the
22 supervisor. But that was about it, and how it
23 was resolved was not formalized.

24 **MR. GRIFFON:** Do you have a procedure number
25 for that or any reference for that?

1 **MR. LANGSTED:** The procedure is Lincoln
2 Pennock^ 1983, and if you want the complete
3 citation, Mark, it's on page ten of the
4 comment responses, a caption to the figure.

5 **MR. GRIFFON:** And so that's mid-'80s and
6 prior to that you haven't found anything prior
7 to that probably.

8 **MR. LANGSTED:** No, there were not procedures
9 that we have located previous to that.

10 **MR. GRIFFON:** Is there any follow up on this
11 beyond what we've discussed to this point?
12 Kathy or John?

13 **DR. MAURO:** It sounds like we have the
14 answer. The answer is that prior to a certain
15 data that kind of follow up is not possible.

16 **DR. ULSH:** I think that what we're saying is
17 prior to that date we don't have procedures
18 that document that. These were more
19 procedures that were followed but not
20 necessarily written down anywhere.

21 **DR. MAURO:** So am I hearing that if we were
22 to pull the string on some of these, we might
23 very well find documentation prior to the date
24 of those procedures?

25 **DR. ULSH:** I doubt that you would find

1 documentation. You might find it in the later
2 years. After 1990 you could maybe find it.

3 **MR. GRIFFON:** And guess to be specific here,
4 I think the allegations were related to later
5 years. Am I correct in that or am I, I'm
6 going by memory here. But I think the
7 allegations of chips fell out was made by an
8 individual that was talking, were they talking
9 about the '80s, the '70s, the '90s?

10 **MS. DeMERS:** 'Eighties.

11 **MR. GRIFFON:** It was the '80s.

12 **DR. BEHLING:** Yes, this is Hans. I would
13 imagine that the chip issue falling out
14 probably predates the use of Panasonic 802
15 badge where you don't really remove the, the
16 TLD itself. It's a sealed package and so the
17 issue of chips falling out and being misplaced
18 or handled with the issue of hands and hair
19 and oils is probably something that dates back
20 to the TLD systems.

21 **MR. GRIFFON:** And is there a timeframe on
22 that, Hans? Or actually Rocky specific? Do
23 we know that?

24 **DR. BEHLING:** I think I have to look at the

25 --

1 **DR. ULSH:** We've got it.

2 **DR. BEHLING:** -- to determine when the
3 switch over was to the more current Panasonic
4 system.

5 **MR. GRIFFON:** Jim probably can answer that,
6 right?

7 **MR. LANGSTED:** Nineteen sixty-nine through
8 1983 were the loose chip TLD years. And
9 that's the period we're talking about here in
10 terms of contaminated chips and/or loose or
11 lost individual chips.

12 **DR. BEHLING:** And on the issue of the oil
13 and hair, again I'm not so sure. Obviously,
14 I'm familiar with the old TLD system where you
15 handled it with forceps that are clean, but
16 even there I'm not sure to what extent, for
17 instance, body oils would introduce a false
18 positive in the glow curve that would be
19 misread as a false exposure. I'd have to go
20 back and look at that as an issue.

21 **MR. LANGSTED:** Yeah, our experience was that
22 that would happen. And remember in those days
23 we were not collecting glow curves. We were
24 just integrating the charge on the instrument
25 and reading it so you wouldn't see the

1 difference in the shape of the curve. The
2 chips were typically handled with forceps, and
3 they were typically washed in alcohol prior
4 to, each one was dipped in alcohol prior to
5 being read to reduce this problem, but --

6 **DR. ULSH:** And that's documented in Lincoln
7 Pennock 1983, the procedure for cleaning
8 chips.

9 **MR. GRIFFON:** And that's in 1983, and after
10 that they really wouldn't have used those
11 types of badges you're saying as of 1984.

12 **MR. LANGSTED:** Yeah, '83 was the start of
13 the change over to Panasonic and that was a
14 much more automated, less handled system with
15 glow curves.

16 **DR. BEHLING:** Yes, and then I'm very
17 familiar with Panasonic system. Those issues
18 are addressed in items 14 and 15 would
19 probably not even be an issue.

20 **MR. GRIFFON:** So I don't know that, this
21 question's really been answered especially,
22 you know, the preliminary matrix I have
23 references the procedure that was in the late
24 '80s I think or early '90s. And then you're
25 saying this other procedure's in '83 and the

1 time period of concern is '69 to '83.

2 **DR. ULSH:** Mark, the practices were
3 implemented at the onset, but they weren't
4 formally, we haven't located any formalized
5 procedures prior to that, and we're pretty
6 skeptical about whether anything like that
7 exists. I can't -- So I don't know. I think
8 we've pulled the string as far as we can on
9 this.

10 **MR. GRIFFON:** Right. And we don't, other
11 than, yeah, I don't know that we would be able
12 to without logbooks, crosswalk any specific
13 situation such as this. And even with
14 logbooks if there was a recorded dose, you
15 would expect that from the other chips, right,
16 if you only lost one chip out of the --

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

18 **MR. GRIFFON:** Can we take this anywhere,
19 SC&A, any follow up on this?

20 **MS. DeMERS:** I think it would be worth it to
21 follow up on a couple of people who had issues
22 with their TLD chip and find out what kind of
23 dose they were assigned and how it was
24 assigned.

25 **MR. GRIFFON:** But I'm wondering how, I mean,

1 how would they know if they had issues with
2 their chips, Kathy? I mean, it seems like the
3 people who reported, alleged this were in the
4 dosimetry and chip-reading area, weren't they?

5 **MS. DeMERS:** The documentation I put into my
6 report, there are badge numbers.

7 **MR. GRIFFON:** So there are some specifics
8 that you believe can be crosswalked?

9 **MS. DeMERS:** Yes.

10 **MR. GRIFFON:** I don't know where to take
11 this. I guess if that possible because I'm
12 still thinking that it was a multiple badge
13 system and if they allege, and it was true,
14 that that one chip was damaged or fell out and
15 there was a dose recorded, that wouldn't
16 surprise me necessarily because they've got
17 other chips to use.

18 **MS. DeMERS:** I think the concern is not so
19 much missing one chip but other issues and --

20 **MR. GRIFFON:** Such as?

21 **MS. DeMERS:** Well, like the TLD reader.

22 **COURT REPORTER:** Kathy, this is Ray again.
23 I'm sorry. It's just very difficult to hear
24 you. I don't meant to complain, but it is
25 just kind of difficult.

1 **MR. GRIFFON:** To hear you.

2 **MS. DeMERS:** There were several issues with
3 the gases in the TLD reader. There were
4 issues with crystals being swapped. This is
5 just two pages of what I collected. I have
6 several more.

7 **MR. GRIFFON:** Well, I guess that to the
8 extent, I mean, this says chips fell out of
9 TLDs and reading were not included. I think
10 we're addressing that specific item here. If
11 we could crosswalk those badges, and they have
12 a recorded dose, I think that sort of puts
13 that to rest. That specific issue. I'm not
14 saying there's not other issues, Kathy, but
15 that specific one.

16 **MS. DeMERS:** They're concerned not about
17 whether there's actual measured dose there,
18 but they're concerned about the zeros.

19 **DR. ULSH:** And it may very well be possible
20 that the recorded dose would be zero if that's
21 what was determined from the other crystals in
22 the badge.

23 **MR. GRIFFON:** It could be so we may not have
24 a conclusion on this, but if there's several
25 badges, I don't know, that might be easy

1 enough to crosswalk. It may not be that easy.
2 I don't know, how difficult would that be to
3 crosswalk in HIS-20.

4 **MR. PRESLEY:** Mark, this is Bob. We have
5 some coworker data on any of this stuff?

6 **MR. GRIFFON:** Yeah, we do, but this is
7 getting at the data reliability question, I
8 guess, and the allegations of intentionally
9 sort of not including data within the database
10 and that sort of thing, Bob. But you're
11 right, they do have coworker approaches if
12 they have gaps in data. But this is going
13 back to the whole reliability of the data
14 itself.

15 **MR. PRESLEY:** Well, it still looks to me
16 like that we ought to be able to come up with
17 some, if somebody's claiming they've got a
18 data reliability, they'd go back and check the
19 coworker data.

20 **MR. GRIFFON:** Yeah, but I guess we're kind
21 of looking for if there are any systemic
22 problems like this. You know, if it's an
23 isolated one, correct, and maybe use coworker
24 data or whatever. But this is checking to see
25 whether there was any sort of systemic issue

1 here.

2 Is that possible to do the hit
3 comparison on HIS-20 by badge number? Anybody
4 know that?

5 **MR. LANGSTED:** HIS-20 in this period would
6 only have quarterly data, and if this badge
7 was a monthly or a semi-monthly badge, it
8 would be buried in there with others.

9 **MR. GRIFFON:** Okay, I wasn't sure if they'd
10 have monthly or not.

11 **MR. LANGSTED:** No, not in this period. No,
12 wait. Wait, wait, wait. I'm sorry, this is
13 '86. This would have been cycle-by-cycle
14 data. My apologies.

15 **MR. GRIFFON:** So to the extent possible I
16 guess my sense is that we try to, again, this
17 is a previous request, try to track some cases
18 back to the extent possible. And if Kathy's
19 got specific badges where this is alleged,
20 then can we get those badge numbers to NIOSH
21 and have you try to crosswalk those. It seems
22 like that would be a limited effort.

23 **MR. LANGSTED:** Yes, if you've got the
24 specifics that we can trace to badge, we can -

25 -

1 **MR. GRIFFON:** SC&A, you can provide those to
2 NIOSH maybe via phone. I don't know if you
3 want to e-mail that sort of thing. Is that
4 correct, John, John or Kathy?

5 **DR. MAURO:** That's a question for Kathy.

6 Kathy, do you have that information
7 for them? Can you release that information?

8 (no response)

9 **DR. MAURO:** Sounds like Kathy's not on the
10 line.

11 **MS. DeMERS:** I just got back.

12 **DR. MAURO:** I'm sorry. We were asking,
13 Kathy, if you'd be able to send out, provide
14 the badge numbers to NIOSH in a way that
15 maintains the privacy information? Are you
16 free to disclose that information?

17 **MS. DeMERS:** It's general logbook
18 information so it's not a particular person.

19 **DR. MAURO:** Oh.

20 **MR. GRIFFON:** I thought you said you had
21 badge numbers that were --

22 **MS. DeMERS:** Yeah, but it's multiple badges
23 on one page. And I would assume that we can
24 ship it in the same way as any other Privacy
25 Act information.

1 **MR. GRIFFON:** Okay, so we can get this to
2 NIOSH and try, you know, NIOSH will make an
3 attempt to crosswalk this with HIS-20 and look
4 at this issue. We're not talking hundreds,
5 we're talking what? How many badge,
6 approximately how many cases, Kathy? How many
7 badges, badge numbers?

8 **MS. DeMERS:** Well, I gave you examples of
9 two sheets. I actually have about 15. What I
10 would do is take a sampling.

11 **MR. GRIFFON:** Just take a sampling of that,
12 so we're talking maybe ten badges total at
13 most, right? In the tens I would try to limit
14 it to.

15 **MS. DeMERS:** Yeah, I would do the same
16 thing.

17 **MS. MUNN:** Do you know whether our claimants
18 have had their claims, the ones that are of
19 most concern to you?

20 **MS. DeMERS:** What do you mean?

21 **MS. MUNN:** I mean have the claimants that
22 you are most concerned with already had their
23 claims processed?

24 **MS. DeMERS:** Not all these people are
25 claimants.

1 **MS. MUNN:** Okay.

2 **DR. MAURO:** Kathy, this is John. Are we
3 talking about -- let me ask the question very
4 straightforward -- it sounds to me that you
5 spoke to some folks face-to-face who don't
6 really trust the process, that the records for
7 them as individuals, in their minds anyway,
8 are questionable. And the very fact that you
9 spoke to them and they provided you with some
10 information, and you're following up and
11 looking into it, are we dealing with something
12 that would be called as much technical as
13 bedside manner?

14 **MS. DeMERS:** Yeah.

15 **DR. MAURO:** So in a way going through this
16 process with them, and let's say a similar
17 process being pursued by NIOSH, this is going
18 to add credibility.

19 Let me ask NIOSH a question. To what
20 extent have you, these individuals that are --

21 These are petitioners that are part of
22 the SEC petition? Who are these folks you
23 were talking to?

24 **MR. GRIFFON:** Without saying names.

25 **DR. MAURO:** Don't give, but are these

1 workers?

2 **MS. DeMERS:** I talked to individuals who
3 gave statements in the petition. I talked to
4 individuals who had knowledge in areas that we
5 felt we had incomplete knowledge, for example,
6 production people. I talked to the
7 petitioners themselves.

8 **DR. MAURO:** And that very same process is
9 going on right now with NIOSH. It sounds like
10 you folks have started a process like that.

11 **DR. ULSH:** I'm not sure what you mean, John.
12 I mean, we have been working with the
13 petitioner throughout the SEC process. They
14 participated in the working group meetings as
15 you know. We've had contacts with Tony
16 DeMaiori, and we're following up on, well, we
17 plan to follow up on specific instances that
18 we might get from those conversations. That's
19 what we've done.

20 **DR. MAURO:** You could see where I'm going
21 with this. You know, there are individuals
22 obviously are, don't really believe or trust
23 the process, but it sounds like these one-on-
24 one type of discussions and perhaps one-on-one
25 types of follow-up investigations are going to

1 be important to these individuals. And I've a
2 feeling that, I don't know where it's going to
3 bring us and what we'll find out, but the
4 very, again, the process of going through this
5 is going to help out in terms of later on
6 whatever decisions are made, the fact that
7 these kinds of one-on-one conversations
8 happened is going to be very important.

9 **MR. GRIFFON:** I think you're right, John.
10 It just adds credibility that we're checking
11 these specific allegations. We're making an
12 attempt the best we can to check these
13 specific allegations. I think I agree with
14 you on the credibility standpoint, for NIOSH's
15 credibility in this process and for all of our
16 credibility in this process.

17 **MR. ELLIOTT:** This is Larry Elliott.
18 There's no argument that this adds value from
19 the perspective of the claimants and the
20 workers at a given site. However, we operate
21 here under a strict timeframe and trying to do
22 the best that we can in that timeframe with
23 limited resources.

24 And we will chase down whatever leads
25 that we are given, but we have to do so with

1 some judgment as to what the benefit and the
2 potential outcome might be of doing so. So it
3 would help us to know, specifically again, in
4 very crisp terms, what this, what a particular
5 lead might relate to a concern that we need to
6 pursue. I can't promise that we're going to
7 touch everybody who worked at that site who
8 may feel that they were wronged.

9 **MR. GRIFFON:** And I agree, Larry, that's why
10 I'm trying the best I can to distill down
11 these actions that we have. I agree with you,
12 Larry, and in this case where the chips fell
13 out, issue number 13, I think if we have
14 specific IDs that NIOSH can crosswalk against
15 the database, that's a very, and it does go to
16 the question of reliability of the external
17 dose data in a broader sense. So I think
18 that's --

19 **MR. ELLIOTT:** I certainly want to be able to
20 give an explanation to claimants or to the
21 petitioners who raise issues recognizing full
22 well they might not agree with or like or
23 explanation, but I do believe and agree with
24 you. They are owed an explanation if we can
25 possibly give it to them. But we have to do

1 that and strike a balance with all of the work
2 that we have underway.

3 **MR. GRIFFON:** I agree.

4 Can we move on in the matrix?

5 **DR. ULSH:** I think we're up to number 15 in
6 your matrix, Mark. Is that correct? Oh wait,
7 14.

8 **MR. GRIFFON:** Fourteen is very similar
9 though I think, but --

10 **DR. ULSH:** That's the hair and body oils.

11 **MR. ELLIOTT:** Wait a minute. This is Larry
12 Elliott again. I want to make sure on what is
13 going to happen next on this last issue that
14 was just discussed. Kathy is going to send us
15 information relevant to certain badge numbers?

16 **MR. GRIFFON:** Yes, and you're going to
17 compare it against HIS-20 for those specific
18 time period badge number questions.

19 **MR. ELLIOTT:** And these are 20 different
20 individuals or just 20 different badge numbers
21 that may represent a smaller number of
22 individuals.

23 **MR. GRIFFON:** Yeah, I don't know exactly.
24 Kathy, I asked Kathy to keep it in the tens of
25 numbers of badges.

1 **MS. DeMERS:** What I'll do is I will provide
2 you with the sheets and then you can choose
3 the individuals you want to pursue.

4 **MR. ELLIOTT:** Let me just offer this. We'll
5 look at the sheet of information, but the
6 outcome of that viewing of the sheet may be
7 that we don't see an issue there, and we'll
8 talk to the petitioner about that, what we
9 see. But I don't know that I'm ready to
10 commit that we're going to go pursue a number
11 of individuals out in Denver and --

12 **MR. GRIFFON:** I don't thing this requires
13 interviewing people, Larry. That wasn't my
14 intent anyway. I mean this is to look at
15 these --

16 **MR. ELLIOTT:** I do think we owe the
17 petitioner an explanation here, but once we
18 start going down individual badge results it
19 concerns me that, you know, a number of
20 interviews that would result from efforts is
21 just too time consuming and perhaps too
22 difficult to accomplish in the short timeframe
23 we have.

24 **MR. GRIFFON:** Yeah, right, I agree. No,
25 this is to look at the potential, you know,

1 this is specific allegations and we have
2 specifics that we can crosswalk. That's what
3 I figured. And it may be that it's
4 inconclusive what we find, but it may be that
5 you have these alleged chips fell out for 14
6 different badges or 14 different people, you
7 look back at those records, those time periods
8 of concern, and you find out there's a value
9 in their records. Then we may conclude that
10 you read the other badge in the multiple badge
11 chip badge.

12 **MR. ELLIOTT:** Yeah, I agree. It's hard --

13 **MR. GRIFFON:** -- crosswalk these but I don't
14 think any of us are asking for you to go back
15 to each individual that Kathy interviewed or
16 whatever.

17 **MR. ELLIOTT:** Okay, I just wanted to be
18 clear on that.

19 **MR. GRIFFON:** Okay, number 14, Brant.

20 **DR. ULSH:** Okay, number 14, that's the hair
21 and body oils on the TLD chips cause
22 inaccurate readings. That is addressed in
23 page nine of my comment responses. It's
24 labeled Data Integrity Comment Number 3. And
25 what you see here is SC&A's comment is that,

1 let's see, they requested external dosimetry
2 procedures from DOE but were not successful in
3 getting those. And therefore, they could not
4 determine how the dosimetry staff is told to
5 handle the chips.

6 And I would direct SC&A to ^ because I
7 mentioned earlier that, at least for 1983,
8 that is an example of the procedure that tells
9 exactly how to handle chips and how to clean
10 them prior to processing. And I think we're
11 going to stand by our previous response. I
12 mean, there's nothing that would make us
13 change that at the moment. Again, I would
14 offer that the excerpts of the logbooks do
15 present examples that such instances were
16 recorded, at least in these examples. I'd
17 like to see the rest of the logbooks before I
18 comment too strongly, but --

19 **MR. GRIFFON:** Now in this particular one,
20 Brant, I would assume that these type of
21 instances would have been investigated and
22 you're, you think that's the case?

23 **DR. ULSH:** It's documented. But in the
24 later years and the years that were covered by
25 the later references, in '83 though you

1 probably have the same kind of a situation as
2 you would for a missing crystal. It would be
3 maybe listed in a logbook as you can see from
4 Kathy's excerpts. I don't know that you can
5 say that an investigation report would have
6 been placed into a worker's file. Not in that
7 period.

8 **MR. GRIFFON:** That was, I lifted this from
9 your previous response so that's why I'm
10 asking.

11 **DR. ULSH:** Well, we weren't --

12 **MR. LANGSTED:** It got a little mixed up
13 there.

14 **DR. ULSH:** I mean the timeframes weren't
15 specified so, and that's probably imprecision
16 on our part. We should have specified the
17 timeframe we were talking about there.

18 **MR. GRIFFON:** Okay, so we don't necessarily,
19 there wouldn't necessarily have been any sort
20 of investigation or any document in a person's
21 file for these in the earlier years anyway?

22 **DR. ULSH:** Not for instances like that I
23 don't think.

24 **MR. GRIFFON:** Any follow up on that? I
25 don't know that we have any specific items

1 that we can follow through on here on this
2 particular, the hair and body oils claim. Any
3 follow up from SC&A on that item? And I think
4 we've taken that action item as far as we can
5 go.

6 **DR. ULSH:** I think there's really only two
7 possible outcomes here. One is that the badge
8 would have read artificially high which would
9 not, I think that would be claimant favorable.
10 Or they recognized that there was a problem
11 and they read the dose from the other
12 crystals. In either case I don't think we've
13 got a problem here.

14 **MR. GRIFFON:** John, Kathy, any follow up on
15 that particular item?

16 **MS. DeMERS:** I think that we're all falling
17 into the --

18 **DR. BEHLING:** Just a comment from me. This
19 is Hans. I was very much involved in the
20 dosimetry program and I was at Three-Mile
21 Island, and we did our own processing and I
22 can tell you there were very, very strict
23 procedures in place that would clearly
24 identify how to deal with aberrant reads and
25 how to resolve those issues. So it's a

1 question of are there any procedures available
2 that you could look at or point to that would
3 provide some reasonable explanation as to how
4 these aberrant reads, whether they're false
5 positives or missing crystals or loose TLD
6 powder within and including the dependence on
7 the 802 system, how they were dealt with. If
8 there are such procedures, that would be the
9 answer to resolve this as an issue.

10 **DR. ULSH:** Lincoln-Pennock 1983 and the two
11 later documents that were referenced from the
12 '90s. That's what we have available.

13 **MR. GRIFFON:** And no earlier procedures that
14 you could find, right, at this point?

15 **DR. ULSH:** That's correct, Mark.

16 **MR. GRIFFON:** And again, this issue most
17 likely would have been from the time period
18 '69 to '83 due to the multiple badge or the
19 system where you had to have badges?

20 **MR. LANGSTED:** What was the question, Mark?

21 **MR. GRIFFON:** This would have primarily been
22 an issue, if it was an issue at all, would
23 have been, the time for it would have been '69
24 to '83?

25 **DR. ULSH:** Hair and body oils issue?

1 **MR. GRIFFON:** Yeah.

2 **DR. ULSH:** Yes, I think that is true because
3 after that you had an automated process that
4 would involve less handling of the chip.

5 **MR. GRIFFON:** I think we're on to the next
6 item.

7 **DR. ULSH:** This is, in the matrix it's
8 number 15, deliberately false entries were
9 made into dose records. There's a charge of
10 deliberate falsification. For instance, a
11 worker alleges that a supervisor would advise
12 to this other worker that the correct dose --
13 no, I'm sorry. Would advise the dosimeter
14 worker that the dose shown was too high to be
15 possibly correct. And the worker was advised
16 to change or delete the reading. And there's
17 another instance cited where a worker alleges
18 that zeros were entered into dose records when
19 the TLD reader failed.

20 Our original response was that both of
21 these scenarios are, could have plausibly
22 occurred and neither one constitute
23 deliberately false entries made into dose
24 records in and of themselves because as we've
25 talked about, unexpected dosimeter reading

1 could result from a number of causes.

2 Shall I wait for the busy signal to go
3 away or just continue?

4 **DR. WADE:** Just continue.

5 **MR. GRIFFON:** Go ahead.

6 **DR. ULSH:** Those include, first of all it
7 could be a high personnel exposure. It could
8 also be exposure to the dosimeter when it was
9 worn by the assigned individual, a
10 malfunctioning of malfunctioning reader
11 equipment. That this is a later time from
12 claims year where we reference the '90s.

13 They provided, those procedures
14 provided procedures for conducting this
15 reconstruction in those cases. They were
16 investigated. Absent evidence to the
17 contrary, we're going to stand by that. The
18 petitioners expressed concerns about the
19 reliability of the data, but to date we don't
20 have any evidence that would support
21 deliberate falsification on the part of the
22 dosimetry staff.

23 **MR. GRIFFON:** In the matrix, Brant, we talk
24 about you were going to follow up with a
25 petitioner, was that the same follow up from

1 before?

2 **DR. ULSH:** Right, that's what we talked
3 about earlier where Tony directed us to talk
4 to Lisa Bressler. We did talk to her. She
5 directed us to a few other people who we are
6 continuing to talk with.

7 **MR. GRIFFON:** I was going to ask, in the
8 matrix, and I don't recall from the petition,
9 but it seems like these are quotes. I don't
10 know if they're quotes from the petition or
11 quotes from individuals. I wonder if you did
12 any follow up interviews with the individuals
13 that made these claims. I don't know if it
14 was I think Tony necessarily.

15 **DR. ULSH:** I think the quotes came from the
16 -- let me make sure that what I'm about to say
17 is true. I guess I have to look back at the
18 SC&A comment.

19 **MS. DeMERS:** Some of those quotes are from
20 NIOSH's initial response.

21 **DR. ULSH:** Okay, I think, Kathy, weren't
22 some of also from the affidavits? Isn't that
23 where we got these affidavits in the petition?

24 **MR. GRIFFON:** Yeah, I forget --

25 **DR. MAKHIJANI:** You got it right, Brant. I

1 made that initial --

2 **MR. GRIFFON:** One says SEC petition Part A
3 on page 57.

4 **DR. ULSH:** Yeah, so those were, these issues
5 were raised in the affidavits that were part
6 of the petition.

7 **DR. MAKHIJANI:** And the petition itself,
8 also.

9 **MR. GRIFFON:** Did NIOSH attempt to follow up
10 by phone or anything with the individual that
11 made the claim?

12 **DR. ULSH:** No, we didn't follow up by phone.
13 We didn't feel that it was necessary.

14 **MR. GRIFFON:** Okay, as you say there's
15 strong charges. I just wondered if it --

16 **DR. ULSH:** I mean, we've been pursuing this
17 with Tony DeMaiori I think is --

18 **MR. GRIFFON:** Okay.

19 **MS. DeMERS:** Can I say something with
20 respect to records access? It became very
21 clear to me when I started talking to the
22 petitioners that they didn't have access to a
23 lot of the records that they thought could
24 substantiate their position. So they were at
25 a decided disadvantage. Unlike us they can't

1 go to DOE and say pull this record, this
2 record, this record and have that done for
3 them.

4 **DR. ULSH:** That's why we're pursuing this
5 track with Tony DeMaiori. Hopefully, he'll be
6 able to provide us some specific examples that
7 we can track down. I mean, in the letter that
8 I sent to Tony, I asked him to please provide
9 any records that he had available, or
10 alternatively, just provide us specifics that
11 then we could chase down exactly for this
12 reason.

13 **MR. GRIFFON:** So this is similar to the
14 other item and that's where you stand is
15 you're still trying to follow up on that to
16 the best you can with the officer and other
17 site document people, right?

18 **DR. ULSH:** Yes, that is correct, Mark.

19 **MR. GRIFFON:** I think that's as far as we
20 can take that now.

21 I might use the prerogative of a Chair
22 now to, would it be a good time to take a
23 little break? Just a short break. I know
24 it's getting close to the end of the day, but
25 I don't think we're going to get through these

1 and the sample DRs without at least a short
2 comfort break.

3 **DR. ULSH:** Okay with us.

4 **MR. GRIFFON:** Okay, can we limit it to five
5 minutes?

6 **DR. WADE:** Sure.

7 **MR. GRIFFON:** Because I would like to try to
8 wrap up before 5:00, so let's limit it to five
9 minutes, okay?

10 (Whereupon, a break was taken and the
11 meeting resumed.)

12 **MR. GRIFFON:** Ready to go?

13 **DR. ULSH:** Did we leave off starting with
14 number 16 on the matrix, Mark?

15 **MR. GRIFFON:** Yes.

16 **DR. ULSH:** All right, this is unauthorized
17 work practices. We had, in the matrix it says
18 no further action required. However; SC&A has
19 expanded on its comments. On page 17 of the 5
20 April responses you see one, two, three, four,
21 five bullets that we would like to talk about,
22 I guess. The first is eating in the area
23 although eating in the uranium area was
24 allowed. This seems to keep coming up. We
25 concede that eating in a radiation area might

1 conceivably result in an ingestion intake of
2 radioactive materials; however, when you start
3 from bioassay results as we do at Rocky Flats,
4 universally claimant favorable, to assume that
5 the material that you might detect in that
6 urine was a result of inhalation intakes.

7 Now I say almost universally. If
8 there's a situation where that would not be
9 claimant favorable, where it would be claimant
10 favorable to assume ingestion, we certainly
11 have the ability to do that. It's easy to do
12 with IMBA, and that we'd work in the
13 urinalysis results just like we would any
14 other case. And then instead of putting the
15 button on inhalation, we put it on ingestion.
16 So I don't see why this an SEC issue.

17 **MS. DeMERS:** I guess what I was doing here
18 is trying to clarify where the petitioners
19 were coming from because it was not, I felt
20 like the NIOSH response wasn't getting to the
21 real concern that the petitioners had. That
22 was a clarification.

23 **DR. ULSH:** So are we in agreement that this
24 eating in radiation areas does not constitute
25 an SEC issue, Mark?

1 **MR. GRIFFON:** I think so. We had closed it
2 out before so I --

3 **DR. ULSH:** Well, there were a couple of
4 other bullets. I mean that's only one --

5 **MS. DeMERS:** There are some other issues.

6 **DR. ULSH:** So let me walk through those.
7 The second bullet was not using respiratory
8 protection when required. And we've, our dose
9 reconstructions don't rely on any assumptions
10 about respiratory protection. We're starting
11 with urinalysis data usually, so I mean, that
12 doesn't rely on any assumptions about
13 respiratory protection. If they fail to wear
14 it, they might have had a higher intake and
15 that would be reflected in the urinalysis
16 results. So again, we contend that this is
17 not an SEC issue.

18 Mark, do you have any thoughts on
19 that?

20 **MR. GRIFFON:** I agree.

21 **DR. ULSH:** The next bullet is de-posting
22 airborne areas for tours. And we would, hard
23 to comment on that without specifics; however,
24 a scenario could be envisioned where -- you've
25 got to keep in mind the airborne areas require

1 posting only for as long as there's airborne
2 contamination and there was processes and
3 machinery that generates airborne activity, if
4 those are ceased, possibly when a tour is
5 scheduled, then the need for posting might be
6 mitigated. In any event, I don't see how de-
7 posting radiation airborne areas for tours
8 would compromise our ability to conduct dose
9 reconstructions.

10 **MS. DeMERS:** These issues were mainly
11 brought up to clarify what the petitioners
12 were trying to say.

13 **DR. ULSH:** Well, since they were brought up,
14 it's our obligation to address them with
15 regard to whether or not they constitute an
16 SEC issue so that's what I'm trying to do.

17 And then the last one -- oh, no, no,
18 not the last one. The next one is
19 manipulation of dosimetry, and I don't know.
20 It's not clear to me who we're talking about
21 doing the manipulating. If we're talking
22 about where workers deliberately sabotaged
23 their own badge or tried to make it read
24 different, read inaccurately.

25 **MS. DeMERS:** Yes, that's what we're talking

1 about.

2 **DR. ULSH:** Okay, again, I think the best
3 answer I'm going to be able to give at this
4 point is that we do have methods for detecting
5 and dealing with some situations where this
6 might have occurred. We do not contend that
7 we can detect it in all such cases. We're not
8 making that contention. As the petitioner,
9 Jennifer Thompson, I think it was, said in a
10 previous working group meeting, these people
11 were not stupid. I have no doubt that if a
12 worker was sufficiently determined to make his
13 badge read inaccurately, you could come up
14 with a scenario where NIOSH would not have the
15 ability to detect it. But in situations where
16 this is pointed out or where we have evidence
17 to suspect it, we do have methods to deal with
18 it. And we talked about some other action
19 items on other comments that we're going to
20 take. I don't think I have anything to add to
21 that at this point.

22 I don't know, Mark, how you want to
23 categorize this one, but --

24 **MR. GRIFFON:** I think it's complete. I
25 mean, I --

1 **DR. ULSH:** Well, we do have one more bullet
2 and another thing. This next bullet is --

3 **MR. GRIFFON:** You're right, you should go
4 through them. I agree, for completeness.

5 **DR. ULSH:** The next bullet, performing jobs
6 without radiation monitor coverage. It may
7 not have been a good idea but it's not clear
8 how a lack of radiation monitor coverage would
9 compromise our ability to do dose
10 reconstruction.

11 **MR. GRIFFON:** Right, agree.

12 **MS. DeMERS:** Some of these are just showing
13 you that there were unauthorized practices
14 going on and there are safety reports that
15 were issued.

16 **DR. ULSH:** We don't take issue with that.

17 Mark, I think that --

18 **MR. GRIFFON:** Yeah, I guess, you know, in
19 that context I guess Kathy's point is that
20 often, I mean, there are some statements that
21 imply that certain procedures existed then
22 there's no issue here.

23 So I guess that's what you're saying,
24 Kathy, is that there are, at least these are
25 cases where they say that even though they

1 have procedures, they weren't being followed,
2 right?

3 **MS. DeMERS:** Right.

4 **DR. MAURO:** This is John. I think that your
5 answers are excellent, and I think that if the
6 petitioners were aware that though they may
7 have observed and experienced this, and they
8 understood that it really didn't prevent you
9 folks from doing the dose reconstructions,
10 that's an important message to send out.

11 Now, a lot of the material you're
12 covering here would be very comforting, I
13 believe, to the petitioners. Right now, of
14 course, you have your evaluation report, but
15 not very much of this material is in it. Is
16 there any vehicle by which this type of
17 material is going to be made available to the
18 petitioners?

19 **DR. ULSH:** I think we're participating in
20 that right now. The petitioner is invited to
21 participate in this call. I don't know if
22 they're on.

23 **MS. MINKS:** This is Erin Minks calling from
24 Senator Salazar's office. We share that same
25 concern is the way to best communicate the

1 deliberations you are all going through to
2 constituents we continue to work with.

3 **MR. ELLIOTT:** This is Larry Elliott. Well
4 certainly these transcripts will be presented
5 on our website, and we serve to respond to
6 inquiries to our website or by phone or by
7 mail on any point that is raised.

8 **MS. DeMERS:** While you brought that up,
9 Larry, can I ask that any names be taken out
10 of my draft memo?

11 **MR. ELLIOTT:** Kathy, I'm not aware that
12 there are -- oh, no, wait. Are you talking
13 about the memo that was sent out last week
14 under Joe's signature?

15 **MR. ELLIOTT:** I'm not aware of any names in
16 there, but I could be mistaken.

17 **MS. DeMERS:** Well, there are a bunch of
18 names in the first --

19 **MR. ELLIOTT:** Out on the website now?

20 **MS. DeMERS:** -- paragraph.

21 **MR. ELLIOTT:** Is that on the website now?

22 **UNIDENTIFIED:** No.

23 **MR. ELLIOTT:** I'm glad to hear it's not on
24 the website, but yes, if we put it on the
25 website, Kathy, we would redact personal

1 identifiers.

2 **MS. DeMERS:** I'd appreciate that.

3 **MR. ELLIOTT:** Certainly.

4 **DR. ULSH:** Mark, we had --

5 **MR. GRIFFON:** And the other thing, just to
6 follow up on that, is that this memo or this
7 April 5th, 2006, comment response, that would
8 be part of what's available to the petitioners
9 as well, right Brant, so in terms of following
10 up on these items? Is that true?

11 **DR. NETON:** It'll be on our website.

12 **DR. WADE:** Yeah, this is Lew Wade. If any
13 of the petitioners or the representatives have
14 suggestions as to how we can better do this,
15 we would certainly be appreciative of that
16 information. I mean, we want to get the
17 information out --

18 **MR. GRIFFON:** Trying to go through,
19 obviously difficult to go through and find --

20 **DR. NETON:** And also I thought John Mauro
21 had indicated earlier that the totality of all
22 this information was going to be considered as
23 part of the evaluation, of our evaluation
24 report. And to that extent then these things
25 would be mentioned at least and referenced

1 somehow.

2 **MR. GRIFFON:** Right.

3 **DR. WADE:** But the reality is that all that
4 we've done and the wonderful work that you
5 people have done today is very difficult for
6 people to understand who haven't spent the
7 time or really don't have the background. And
8 we need to explore ways to do this better, and
9 we're open to suggestions. Certainly, it's
10 what we want to do, so if you have any
11 specific suggestions for us now or after
12 you've been through the entire process please
13 let us know.

14 **MR. ELLIOTT:** This is Larry Elliott again.
15 I think, and I feel that one way we can
16 certainly accomplish a little bit better job
17 in communicating with folks is to provide
18 them, and particularly the petitioners, we can
19 provide the matrix that has been a working
20 document up to this point. But at some point
21 in the near future it should be a finalized
22 document and all of the other associated
23 documentation that has been developed and
24 generated through this deliberation for a
25 given petition. We should provide that, I

1 believe, back to the petitioner as a way to
2 help bring their level of understanding and
3 bring closure to some of the questions and
4 concerns that they have raised.

5 **MS. MINKS:** This is Erin Minks again. I
6 think that would be very, anything would be
7 helpful, that openness that we've talked about
8 building credibility in the process to those
9 who are not able to engage in the level of
10 deliberation you're all engaging in. And I
11 think that as this meeting comes up in two
12 weeks out here in Denver, we're getting asked
13 by a number of petitioner constituents who we
14 work with just trying to get a sense of their,
15 you know, we're trying to manage their
16 expectations about how this meeting is going
17 to be.

18 And we can talk about this at the end
19 of the meeting, whatever's easiest today. But
20 if we could have a sense of how the, you know,
21 we talk about agenda or this is going to be
22 presented and how. Summed up really in a
23 very, I think the danger is to go so technical
24 that folks don't also feel as alienated in
25 that angle as well. But that's just what

1 we're hearing from the Congressman Udall's
2 office and Senator Salazar.

3 **MR. GRIFFON:** That's a good point.

4 **DR. WADE:** Thank you.

5 **DR. MAKHIJANI:** Mark, this is Arjun. You
6 know, we have, thanks to Dr. Wade and the
7 other conversations that we've starting with
8 Mallinckrodt when petitioners started actively
9 participating, you know, when they send
10 questions or we have at least a tentative
11 procedure sometimes of interviewing
12 petitioners and talking to them. So there's
13 already some interchange, a considerable level
14 of interchange happening.

15 And I think what Larry has suggested
16 seems like an extremely good way to regularize
17 it because we do answer questions. At least
18 we will commit ourselves to anything in terms
19 of what if there's a question about something
20 or there's a normal kind of interchange about
21 a technical matter. This sounds like a very
22 good way to, that would be helpful to our work
23 also.

24 **DR. WADE:** This is Lew Wade again, one last
25 item. As the DFO I'd be willing next week

1 possibly to have a discussion, a telephone
2 discussion, with those of you who might like
3 if you give me your name and number to talk
4 about the agenda and the inputs and things
5 you're hearing. I'd like to spend some time
6 exploring how we can do this well.

7 **MS. MINKS:** That would be very helpful. I
8 think there's at least three members out here
9 who would probably want to, of the
10 congressional members out here who would want
11 to be part of that.

12 **DR. WADE:** Okay, if you would give me your
13 name and number, and I'll call you and we can
14 set it up.

15 **MS. MINKS:** Erin Minks, it's E-R-I-N M-I-N-
16 K-S and it's with Senator Salazar.

17 **DR. WADE:** And the number?

18 **MS. MINKS:** 3-0-3-4-5-5-7-6-0-0.

19 **DR. WADE:** Erin, I'll call you Monday and we
20 can talk about setting up such a discussion.

21 **MS. MINKS:** Wonderful, thank you.

22 **DR. WADE:** Thank you.

23 I'm sorry, Mark, to take time.

24 **MR. GRIFFON:** That's okay. That's okay.
25 It's important discussions.

1 **MS. MUNN:** And Lew and Mark, in that regard
2 early on Paul Ziemer made an effort at the
3 outset of our meetings to try to sort of set
4 the stage for people who had not been involved
5 in the Board's activity but only had
6 interaction with NIOSH and their claim and
7 labor. And we have not done that in recent
8 times mostly I think because of the level of
9 heavy lifting that was going to have to go on
10 in our agenda of time constraints. It might
11 not be a bad idea for us to consider a very
12 brief overview, just five minutes or so, for
13 new audiences to understand what has
14 transpired with this activity prior to our
15 actually appearing in their community.

16 **DR. WADE:** I will talk to Paul, I mean, as
17 soon as I can about that and based upon my
18 discussions with our friends from Colorado,
19 possibly will include that as an item.

20 Thank you, Wanda.

21 **MR. GRIFFON:** Let's go back to the heavy
22 lifting.

23 **DR. ULSH:** I think we're on number 17. Am I
24 correct?

25 **MR. GRIFFON:** Seventeen?

1 **DR. ULSH:** Seventeen from the matrix?

2 **MR. GRIFFON:** Yes.

3 **DR. ULSH:** Inappropriate subtraction of
4 backgrounds. This comment begins on page 18
5 of the 5 April document.

6 **MR. GRIFFON:** Was there any added comments
7 because we had no further actions.

8 **DR. ULSH:** Yes, that's correct. We did have
9 no further action. SC&A says in their
10 expanded comments that there was a report
11 written. We are speculating that this was the
12 one that was written some time in the mid-
13 '90s. I don't know if that's right, but I
14 think that we're going to stand by our
15 previous comment the full text of which is
16 given on page 20, and I would direct you to
17 the last italicized paragraph where it says
18 that falsified ambient dose is assessed
19 separately from dosimetry included in
20 assessment. And in the worst case this might
21 require ^ to that, but that's easily
22 accomplished, I mean, if evidence is uncovered
23 that we should do that. But we don't see it
24 as an SEC in our response at the moment.

25 **MS. DeMERS:** Well, let me make a comment.

1 That report has not been sent to me. That's
2 one of the reports that is in the box at Rocky
3 Flats. And I guess I have a question and in
4 order to answer this, you may have to look at
5 page 60 of the external TBD.

6 **DR. ULSH:** Hold on, give me a minute. Six-
7 zero, Kathy?

8 **MS. DeMERS:** Yes. It's Figure A-9.

9 **DR. ULSH:** All right, we've got it.

10 **MS. DeMERS:** There's a column, second over
11 from the right, D-K-1. What does that mean?

12 **MR. LANGSTED:** That was the background that
13 was -- now let's see, this is from '87, that
14 was the background that was, environmental
15 background that was subtracted from the badge
16 or the crystals on the badge when loose chip
17 TLD badge was processed.

18 **MS. DeMERS:** Okay, and is there a reason,
19 natural background or otherwise, why these are
20 so elevated?

21 **MR. LANGSTED:** Well, Rocky Flats is at about
22 7,000 feet in a fairly uranium-bearing area,
23 and typical environmental background was about
24 a third of a millirem per day.

25 **MS. DeMERS:** Okay, that was my question.

1 **MR. LANGSTED:** Does that make sense?

2 **MS. DeMERS:** Uh-huh.

3 **MR. GRIFFON:** All right, so are we at no
4 further action required on that one?

5 **MS. DeMERS:** Yeah.

6 **DR. ULSH:** I'm in agreement with that.

7 **MS. DeMERS:** Well, we haven't had an
8 opportunity to review the report that --

9 **MR. GRIFFON:** That's still in the box,
10 right?

11 **MS. DeMERS:** Yeah.

12 **DR. ULSH:** We haven't had an opportunity to
13 review it either obviously. However, again,
14 if we need to adjust our background numbers we
15 can do that. That's not an SEC issue.

16 **MR. GRIFFON:** I guess that's the question,
17 Kathy. Is this, would this be an SEC issue
18 notwithstanding the documents that you're
19 going to look at. Is this something that
20 couldn't be adjusted if they found different
21 information?

22 **MS. MUNN:** It does not seem to exhibit any
23 kind of dosimetry readings.

24 **MS. DeMERS:** Well, I guess my answer is I
25 don't know.

1 **DR. MAURO:** This is John. I always, I'm not
2 afraid to stick my neck out a bit. I can't
3 see that being an SEC issue.

4 **MR. GRIFFON:** I think we'll leave it there.
5 I think we'll leave it there for now, but I
6 still think it should be followed up on, but I
7 don't see it as an SEC issue. So I think
8 we'll leave it there, Brant.

9 **DR. ULSH:** Okay, I think then moving on to
10 item 18 from Mark's matrix -- let's see, this
11 is our oldest bugaboo about workers frequently
12 did not wear badges in production areas.

13 **MR. LANGSTED:** I don't know if we have a lot
14 to add here. We've talked about that a couple
15 of times today.

16 **DR. ULSH:** Do you want me to respond again
17 or are you --

18 **MR. GRIFFON:** No, no, I'm just re-reading
19 here.

20 Is this, this is one of the specific
21 cases, this wouldn't happen to be one of the
22 cases in the badges you're going to provide
23 would it be, Kathy? I mean, the idea here
24 again I think was to try to track back this
25 specific individual and see if there was any

1 reason to believe that the allegation or
2 whether it was appropriately adjusted in the
3 future quarters or, you know, it may not be
4 conclusive what you find. I don't know, but
5 did you have any luck tracking or attempting
6 to track back that individual?

7 **MS. DeMERS:** You are on page?

8 **MR. GRIFFON:** I'm on number 18 in the
9 matrix.

10 I don't know what page, Brant, in your
11 responses.

12 **DR. ULSH:** Twenty-one.

13 **MR. GRIFFON:** Twenty-one, thank you.

14 **MS. DeMERS:** The worker in -- okay, this is
15 not the one I'm thinking about.

16 **MR. GRIFFON:** Yeah, I don't think this is
17 the radiation technician example. Again, I
18 was asking Brant more than you, Kathy.

19 Were you able to track this specific
20 situation back? It doesn't sound like it.

21 **DR. ULSH:** I don't think so, Mark.

22 **MR. GRIFFON:** I mean was an attempt made I
23 guess is the next question. I think this was
24 a specific affidavit.

25 **DR. ULSH:** I don't know. I'm scratching my

1 head on this, Mark. We're going to have to
2 look, track down this, trying to find this
3 affidavit right now.

4 **MR. GRIFFON:** I may be wrong on that, too.

5 **DR. ULSH:** I guess my answer, Mark, is I
6 have no update on that.

7 **MR. GRIFFON:** We'll leave that outstanding,
8 and I think this goes, holds true for all the,
9 you know, the badge information that Kathy's
10 going to forward to you, but also some of
11 these other specific cases. If you're able to
12 track back I think that was the idea to the
13 extent that it helps answer questions about
14 reliability of the overall, you know, overall
15 set of data that we're using for workers.

16 **DR. ULSH:** So what we're looking for is the
17 petition part A, page 53, that's referenced
18 here. The first to a specific individual, the
19 allegation here is that sometimes this
20 individual didn't wear their badge in the
21 production area. What kind of analysis would
22 you like us to do on this individual?

23 **MR. GRIFFON:** I guess without looking at the
24 actual page, you may come back and say
25 inconclusive because we found some data but we

1 don't know whether he off partially and had it
2 on partially. So it may be inconclusive. If
3 he reports to be in production areas for, if
4 he's very specific about when he was in
5 production areas and has all zeros in those
6 areas, you know, that may be telling depending
7 on the area I guess.

8 **MS. DeMERS:** I know who this person is so I
9 can --

10 **MR. GRIFFON:** Is someone talking? I can't
11 hear.

12 **MS. DeMERS:** There is an affidavit in the
13 SEC petition by this person.

14 **MR. GRIFFON:** So I guess Brant I'm not sure,
15 but I would say take the affidavit, crosswalk
16 it, and see what you can report back. And if
17 it's inconclusive; it's inconclusive, you
18 know?

19 **DR. ULSH:** Okay, will do, Mark. We'll see
20 what we can do.

21 **MR. GRIFFON:** Number 19 I'm on.

22 **DR. ULSH:** This issue is number 19 that is
23 the geometry issue. And this picks up in the
24 5 April comment responses on page 22. There
25 are a number of additional points that SC&A

1 has expanded upon, and so let me try to walk
2 you through our response here which picks up
3 on page 24.

4 And the first issue raised is lead
5 aprons. And what you see here on page 24 and
6 25, we are relying a field study that was
7 performed in two storage vaults in Rocky Flats
8 that's 1992 to come up with the bias correct
9 factors that we present on page 25. And that
10 gives us factors to use for situations where
11 we're talking about a cancer in a protected
12 area. That is, an area that is under the lead
13 apron and also an unprotected area, an area
14 that is not under the lead apron, and then we
15 also consider where the dosimeter was worn.
16 And what's presented here are bias correction
17 factors that will account for this.

18 There are some other specific issues,
19 but I think maybe I'll pause here to see if we
20 want to have more of a discussion about the
21 lead aprons.

22 (no response)

23 **DR. ULSH:** Is that a no then?

24 **MS. DeMERS:** Well, I haven't had time to
25 digest your responses to all of these since I

1 got them this morning.

2 **DR. ULSH:** In that case the next issue,
3 describe the situation where there were some
4 storage carts apparently in a hallway, and on
5 the carts were some parts of radioactive
6 material presumably that were placed in
7 storage boxes with a hole cut in the front.
8 And the comment asserts this would create a
9 directed beam.

10 I would take some issue with that
11 characterization. It's kind of difficult.
12 I'm visualizing this in my head. I don't know
13 the dimensions this, you know, the physical
14 dimensions of the situation that we're talking
15 about, but if you have a part in a cubic box,
16 let's say, with a hole in one side --

17 **MS. DeMERS:** This is a shielded box.

18 **DR. ULSH:** Okay, a cubic shielding box, what
19 you're going to have I would presume, I can't
20 see how it would be different, is sort of a
21 cone-shaped field, not a directed beam. The
22 only way you can get a directed beam that I'm
23 aware of is if you have sort of a gun barrel-
24 type arrangement, and I don't think that's
25 what we're talking about here. Again, I don't

1 have the specifics of the dimensions of these
2 parts and boxes, but what you would have is a
3 cone. And an issue that is being raised here
4 deal with exposure geometry.

5 And I would also remind you that you
6 have to consider the fact that there would be
7 scattering involved. I don't contend, okay,
8 I'll grant you that there were heterogeneous
9 radiation fields at Rocky Flats. But really
10 the time that you have to worry about an
11 exposure adjustment when you've got people
12 working with discrete radiation sources for a
13 significant portion of the badge exchange
14 cycle. And the reason is that when you have a
15 situation like that, a discrete source and a
16 significant exposure time, it is possible that
17 the dose recorded on the dosimeter badge might
18 be different than the dose that would be
19 received by some of the, for instance, if the
20 badge is worn on the lapel area, the dose that
21 was received by the abdominal organs could be
22 different.

23 And the reason for that is because of
24 the one over r^2 of radiation intensity, the
25 distance between the badge and the source is

1 greater than the distance between the
2 abdominal organs and the source. We fully
3 recognize this, and in fact, we have written a
4 TIB to deal with exactly that situation. It's
5 OCAS TIB-0010, External Dose Reconstruction
6 for Glove Box Workers. That TIB would also
7 deal with the situation, the issue that SC&A
8 raised where there were multiple glove box
9 lines within the same room.

10 That is certainly true. We know that.
11 However, due to that same consideration, the
12 dependence of radiation intensity on inverse
13 of the square of the distance, a worker's dose
14 is going to be dominated by the glove box that
15 he's working in front of. That's not to say
16 that there's no contribution from other
17 sources, but it's going to be dominated by the
18 glove box that he's working in.

19 Furthermore, you have to consider that
20 discrete sources in those other glove boxes
21 have to get through not only the shielding in
22 their own glove box but glove boxes or
23 intervening structures that might provide some
24 shielding. So that would even add to the
25 dominance of the dose from the glove box that

1 the worker's working in.

2 **DR. MAURO:** Brant, this is John Mauro. My
3 question is we just finished our review of
4 that OTIB, and we matched your correction
5 factors.

6 **DR. ULSH:** That's comforting, thank you.

7 **DR. MAURO:** We have some comments. You'll
8 see it shortly. We're working on publishing
9 that, the Task 3 report, but it turns out I
10 was involved in that one in particular, and we
11 just about matched every one of your
12 adjustment factors.

13 **DR. ULSH:** I'm glad to hear that, thank you,
14 John.

15 **MS. DeMERS:** I would add one comment to
16 this. Storage in the hallways was no uncommon
17 at Rocky Flats in the tunnel. So I don't know
18 if it's correct saying that these were,
19 resulted in less exposure than glove box work.

20 **MR. LANGSTED:** In the tunnels in 991
21 Building?

22 **MS. DeMERS:** Well, from what I'm reading
23 there were various storage locations. There
24 was a tunnel that was converted to a vault.

25 **MR. LANGSTED:** Those tunnels that were used

1 for storage areas had very low occupancy
2 factors. People would only be in there for a
3 short period of time.

4 **DR. ULSH:** And again, Kathy, you have to
5 consider that if you're talking about a cone-
6 shaped field, even if you don't consider
7 scattering, what you're going to have to have
8 is a worker standing in such a position that
9 his badge is outside the cone and his body is
10 inside the cone. And it just don't find it
11 credible that a worker would spend a large
12 portion of his badge exchange cycle in those
13 low occupancy areas standing in exactly that
14 position. I just don't find that credible.

15 **MS. DeMERS:** Well, the statement about the
16 directed beam was given by an RCT who measured
17 it with field instruments.

18 **DR. ULSH:** Well, I wonder if there's some
19 possible difference of interpretation here
20 because like I said, the only way you're going
21 to get a directed beam is with a gun barrel-
22 type configuration.

23 **DR. MAKHIJANI:** Brant, this is Arjun. I
24 think the nature of the beam will depend not
25 on the distance and geometry of the source.

1 And until, you know, it's a point source, and
2 I think you're completely right. It would be
3 like a cone. If it's a more spatially
4 extended source and a smaller hole in a
5 shielded box then you might get more like a
6 beam. But I think this is a, I don't know, I
7 guess sort of stepping back from it, it seems
8 like a theoretical discussion of when we don't
9 know the specifics enough to sort out the
10 situation.

11 And if there are measurements, Kathy,
12 is there a document behind these measurements?

13 **MS. DeMERS:** I've asked to be pulled.

14 **DR. MAKHIJANI:** Well, I think both things
15 are possible. Brant is right that it could
16 very well be a cone, but it just depends on
17 what was being worked on.

18 **DR. ULSH:** Yes, you're right, Arjun. This
19 is very much a theoretical discussion because
20 I don't have the layout of this situation in
21 front of me. But I still contend that unless
22 you have very thick shielding, you're not
23 going to get a directed beam. I will grant
24 that you might have an unhomogeneous or let's
25 say a heterogeneous radiation field.

1 **DR. MAKHIJANI:** Right.

2 **DR. ULSH:** But a worker would have to spend
3 an appreciable amount of the badge exchange
4 cycle standing where his badge in one position
5 more or less, where his badge is getting a
6 different reading. And I just don't see that
7 happening other than working with discrete
8 radiation sources for a large period of time
9 exemplified by glove box workers. If you guys
10 come up with evidence otherwise, I certainly
11 will

12 **DR. MAKHIJANI:** Isn't that the context in
13 which this thing is being --

14 **DR. ULSH:** No, this is, no, this is --

15 **MS. DeMERS:** Well, there's a --

16 **DR. MAKHIJANI:** there was a --

17 **MS. DeMERS:** -- couple of different issues.

18 **DR. MAKHIJANI:** -- context of this.

19 **DR. ULSH:** There were a couple of different
20 issues raised in this comment. One was these
21 putative directed beams that would be created
22 by these storage boxes in the hallways. That
23 was one issue. The second issue was multiple
24 glove box lines within the same room. And
25 what I'm saying is that the geometry issue to

1 the extent that there is one is typified by a
2 glove box worker. And as John mentioned, you
3 guys have just reviewed that TIB.

4 **DR. MAKHIJANI:** Yeah, I think that's
5 probably right.

6 **MS. DeMERS:** It's difficult to give you a
7 description because it's treading on sensitive
8 information.

9 **DR. ULSH:** What you're saying -- I don't
10 know.

11 **MR. GRIFFON:** Are you saying that this might
12 be a classified concern here?

13 **MS. DeMERS:** Yes.

14 **DR. ULSH:** So the configuration of these
15 storage boxes and the parts that they
16 contained and the storage areas might be
17 classified information is what you're saying?

18 **MS. DeMERS:** Possibly.

19 **DR. ULSH:** Okay, well --

20 **MR. GRIFFON:** Well, we can't take that any
21 further here obviously.

22 **DR. ULSH:** Right, so I think that's our
23 response with this issue open to discussion if
24 necessary.

25 **MR. GRIFFON:** Yeah, I mean I think that just

1 about all we can say at this point is that
2 NIOSH has provided a response in the 5 April
3 comment memo, and SC&A will consider this
4 within their review of the evaluation report.
5 I mean, I think that's where I'm going to
6 leave it if that's agreeable?

7 **MR. ELLIOTT:** Kathy, this is Larry. Do you
8 have any sense of the magnitude of this
9 perceived problem? In other words how many
10 workers might have been engaged in an activity
11 where their badge would not have captured the
12 dose --

13 **MR. GRIFFON:** Good question.

14 **MR. ELLIOTT:** -- in this scenario?

15 **MS. DeMERS:** It's kind of hard to tell
16 because you have to go back and this is for a
17 particular time period.

18 **MR. GRIFFON:** Was it for a very unique
19 process of it was only for a limited
20 timeframe?

21 **MS. DeMERS:** It's hard to get into this.
22 This was --

23 **MR. ELLIOTT:** Let me suggest this.

24 **MS. DeMERS:** -- plutonium fabrication
25 facility.

1 **MR. ELLIOTT:** Fabrication facility, okay,
2 but any way to narrow, give us a year or
3 anything like that? Perhaps maybe I, let me
4 suggest this. That maybe you with a Q
5 clearance and one of the NIOSH folks who has a
6 Q clearance and maybe one of the ORAU team
7 need to have a discussion about this.

8 **MS. DeMERS:** And I don't have a lot more
9 information to give you, but I don't want to
10 go into too much detail.

11 **MR. ELLIOTT:** And I appreciate that, but it
12 would help if you guys had a discussion to at
13 least engage you about the magnitude or the
14 number of people, the timeframe, where it
15 occurred, et cetera.

16 **MR. GRIFFON:** Thanks, Larry, good point.

17 Okay, let's leave that there and then
18 go on to 20, I think. And I would suggest for
19 efficiency purposes, 20, 21 and 22, the follow
20 up on all these is that NIOSH will attempt to
21 track the specific cases?

22 **DR. ULSH:** We actually have tracked one
23 here, Mark.

24 **MR. GRIFFON:** So I'll do that then. Number
25 20.

1 **DR. ULSH:** Number 20. I think this
2 corresponds, yeah, the comment starts on page
3 25 and SC&A relates a number of situations
4 here. I see three of them on page 27 in
5 bullets. The first bullet is about a worker
6 working around annular tanks and there was a
7 ten-minute stay time, and he had no dose
8 reported. Another employee accidentally ran a
9 dosimeter through an x-ray machine and it came
10 back zero. And certain high-dose projects
11 would result in film badges that were reported
12 as black.

13 So I'd first like to address the
14 affidavit that was provided in part B of the
15 petition, page 32. This is shown in Figure 7
16 on page 28. I have redacted it, and I would
17 direct you to the second paragraph. This is,
18 I think, the allegation for the part of the
19 affidavit that SC&A's comment concerns. And
20 that is in the 1982-'83 timeframe, loading
21 nuclear material into the stacker/retriever,
22 he said that six quarters out of eight there
23 is no data available for my dose.

24 **MS. DeMERS:** Okay, this is broader than this
25 particular individual.

1 **MR. GRIFFON:** Well, but we asked about this
2 individual so --

3 **MS. DeMERS:** And it goes back to the zero,
4 the unbelievable zeros by the workers.

5 **DR. ULSH:** Okay, so let's run this one down
6 because we can. What you see on page 29 is a
7 copy of the 1982-'83 dosimetry for this
8 individual. And what you see are in '82 we
9 have dosimetry for quarter one, quarter two
10 and quarter four. And for quarter three where
11 we don't have a quarterly read, we have a
12 monthly read. The next year we have another
13 monthly read in '83, and then we have
14 dosimetry results for all four quarters.

15 So what you see here is that dosimetry
16 does not support the assertion that there were
17 six quarters out of eight where there is no
18 data available. Now I will grant you that --

19 **MR. GRIFFON:** I'd like to see that, but I'm
20 not sure I see that.

21 **DR. ULSH:** Well, Mark, look at --

22 **MR. GRIFFON:** Well, I mean, I'm looking and
23 I see zeros.

24 **DR. ULSH:** Yes.

25 **MR. GRIFFON:** Correct me if I'm wrong. Now

1 could zeros in a database form such as you've
2 printed out here, could no data available have
3 been transferred into zeros? I don't know
4 that.

5 **DR. ULSH:** No. No data available indicates
6 that there was no data available at the time
7 the dosimetry report was reported back to the
8 supervisors, I believe. And a zero indicates
9 zero.

10 **MR. GRIFFON:** So within the database there
11 are columns that say nda or no data available?

12 **DR. ULSH:** I don't believe so, Mark. Those
13 nda's occurred -- I'm going to rely on Jim to
14 help me out here.

15 **MR. LANGSTED:** That no data available was a
16 term that was used on the report that was sent
17 out to the supervisors on an exchange basis.

18 **MR. GRIFFON:** So these zeros would be just
19 less than detectable all the time.

20 **DR. ULSH:** Well, for the ones, yes, the
21 zeros. Yes, you'll notice that one quarter
22 that is missing, quarter three of 1982.
23 There's a monthly read in --

24 **MR. LANGSTED:** That would have likely been
25 reported as a no data available on the report

1 that went out to the supervisor for that
2 quarter.

3 **DR. ULSH:** But you do see numerical results,
4 albeit some of them are zero in the dosimetry
5 file. They are not missing for six out of
6 eight quarters.

7 **MS. DeMERS:** I think the point here was,
8 again, that the worker was in an area with the
9 very high dose rate, and they don't believe
10 the zero.

11 **DR. ULSH:** Well, let's talk about that.
12 Areas that were posted for high dose rates are
13 based on the highest dose rate in the area.
14 That is not necessarily, you cannot assume
15 that that is an average dose rate or
16 representative of what the worker might have
17 been exposed to.

18 Furthermore, this person identifies
19 themselves as a radiological control technician.
20 And it is consistent with our experience with
21 radiological control technicians in accordance
22 with the LARA procedures, they would stand
23 back out of the radiation field, and they were
24 the ones that were holding the instruments
25 until their services were required to go up

1 and briefly take a reading near the source.
2 And then they would retreat back to the low
3 radiation area. So it is entirely plausible
4 that a radiological control technician working
5 in such an area might have had a badge read
6 below the limit of detection.

7 **MS. DeMERS:** Have you verified his readings
8 with the general field conditions? Have you
9 asked yourself does that make sense? Because
10 if he's standing in, say, 100 MR per hour
11 field --

12 **DR. ULSH:** We are basing what I've said on
13 the information provided in the affidavit.
14 And it is entirely consistent, I mean, it's
15 plausible that a special situation could have
16 existed without falsification of data.

17 **MS. DeMERS:** This really goes back to a
18 previous item we've already discussed.

19 **MR. GRIFFON:** Okay, well, you did track this
20 one back to the specific case, and I do
21 appreciate that. That was, that's useful.
22 That's what the action was, right? So we have
23 a response --

24 **DR. ULSH:** Yes.

25 **MR. GRIFFON:** -- for that specific part of

1 it. Now I guess SC&A added some bullets to
2 this item?

3 **DR. ULSH:** Well, these deal with other
4 situations so, yes, --

5 Okay, the situation where, let's see,
6 there was a non-destructive testing technician
7 asserting that his dosimetry readings did not
8 match his job duties. And SC&A mentioned that
9 this person was a claimant, and they have
10 looked at the dosimetry. And I'm looking at
11 it right now.

12 I didn't include it in the comment
13 responses because I was a little worried about
14 Privacy Act information at the time. But I
15 don't disagree with any, I think the
16 description that SC&A provided of his
17 dosimetry is accurate because I'm looking at
18 it right now. And I would, we looked at his
19 dosimetry files just like SC&A did, and we
20 were not able to establish his work locations
21 and his job duties.

22 What you see is that in the early
23 years, '63 to '68, he does have higher deep
24 dose and skin readings. And then in '69 there
25 is a gap. There's nothing recorded. In 1970

1 it's pretty low, and the years after that are
2 lower than they were in the earlier years. I
3 would mention that since this person is a
4 claimant, I was able to determine the status
5 of his claim. It has been completed. I don't
6 want to give any personal identifiers, but the
7 POC that was calculated was greater than 50
8 percent.

9 Therefore, you might ask what about
10 this gap in 1969? That did not prevent us
11 from doing dose reconstructions. This is a
12 classic case where we could use either
13 coworker data or more likely in the case we
14 would use the nearby technique. But that was
15 not necessary in this case, and we found that
16 frequently.

17 Now we don't contend that the, we
18 can't warrant that 100 percent of all the
19 claimant files, we can't warrant that they are
20 100 percent complete. We grant that there
21 are, in certain instances there are gaps and
22 that is why we have techniques like the nearby
23 technique and coworker data to cover those
24 periods. And it certainly didn't pose a
25 problem in this case. We successfully

1 completed the case with a POC greater than 50
2 percent.

3 **MR. GRIFFON:** And this was --

4 **DR. ULSH:** The non-destructive testing
5 technician. And, yes, there is a gap there.
6 Without specific information on his locations,
7 which I did not find in his file, I really
8 can't comment on why there's a gap there.

9 **MR. GRIFFON:** What page are you in you
10 comment --

11 **DR. ULSH:** Page 30.

12 **MR. GRIFFON:** Page 30.

13 **DR. ULSH:** I'm on page 30.

14 I'm going to move on to the next one
15 unless there's some discussion necessary.

16 (no response)

17 **DR. ULSH:** The situation, the next situation
18 that was raised in this comment --

19 **MR. GRIFFON:** Sorry, just to step back.
20 This person had a POC greater than 50 percent.
21 Was it with maximizing, I mean, was it with,
22 because of assumptions or was it a best
23 estimate case or probably you may not know
24 that.

25 **DR. ULSH:** I can't really tell you that,

1 Mark. I know what kind of cancer it was. Is
2 Liz on the phone?

3 **MS. HOMOKI-TITUS:** Yes, and you're getting
4 very close --

5 **DR. ULSH:** That's why I asked. I think I'll
6 stop there, Mark.

7 **MS. HOMOKI-TITUS:** We can have this
8 discussion offline if you want to, Mark.

9 **MR. GRIFFON:** No, no, no. Okay.

10 **DR. ULSH:** The next situation described was
11 the employee who, I think it was accidentally,
12 ran his dosimeter through an x-ray machine,
13 and the badge came back without a positive
14 dose. That is entirely consistent with what
15 you might expect.

16 On the next page, page 31, I provide
17 an example. Now it's not this individual
18 because I don't know who this individual is
19 that appeared in SC&A's comment, but it's
20 exactly this kind of a situation. If you look
21 at the bottom of page 31, what you see, the
22 text that's written in there, on experimental
23 data it has been determined that multiple
24 exposures to the portal x-ray devices would be
25 required in order for a positive, detectable

1 reading to occur.

2 What we're saying here is that the
3 dose delivered by a run through an x-ray
4 machine would be below the limit of detection.
5 And, in fact, the experimental data that's
6 referenced there, we have tracked, I think
7 we've tracked it down. We contacted a Jason
8 Flora^ who we believe did this study, and let
9 me see what he says here. I just got this
10 morning that's why I didn't include it.

11 He says, "I did do a study with TLDs
12 going through the x-ray machines during the
13 early '90s. Thus, based on memory, we
14 discovered that sending the TLD dosimeters
15 through the x-ray security scanners that no
16 measurable change occurred on the TLD." They
17 could not tell the control badges from the
18 exposed group.

19 In addition he says that he's pretty
20 sure that they sent them through the x-ray
21 machine multiple times, and he does not
22 believe that this was written up anywhere
23 except possibly in some memo that he wasn't
24 able to provide. But the bottom line is it's
25 entirely consistent that if a badge was run

1 through an x-ray machine, it could come back
2 with a less than LOD.

3 **MS. DeMERS:** So you're saying Security x-ray
4 systems?

5 **DR. ULSH:** Yes, the type of x-ray machine
6 that was referenced in the SC&A comment wasn't
7 clear, that those details weren't in there.

8 **MS. DeMERS:** I need to provide you with
9 further details.

10 **DR. ULSH:** Okay.

11 **MS. MUNN:** It just said the portal x-ray.

12 **DR. ULSH:** No, Wanda, that wasn't from
13 SC&A's comment, that was from the example that
14 I provided which is not the individual, at
15 least I don't think it's individual in SC&A's
16 comment.

17 Okay, the next situation, I think
18 we've kind of discussed this. This is the
19 employee who was working around the annular
20 tanks and there was a ten-minute stay time for
21 this job, no dose was recorded.

22 **MR. GRIFFON:** Are we still within comment
23 nine?

24 **DR. ULSH:** Oh, yes.

25 **MR. GRIFFON:** These all fall under comment

1 nine, okay.

2 DR. ULSH: It was a big one, Mark.

3 MR. GRIFFON: It started out as one specific
4 one. I kind of, I'm trying to keep this
5 matrix...

6 DR. MAKHIJANI: Mark, this is also the areas
7 of high dose with low recorded dose.

8 MR. GRIFFON: Okay.

9 DR. ULSH: Yeah, I think that's the thread
10 that ties them all together.

11 MR. GRIFFON: I just have this challenge of
12 keeping this matrix up to date so I'm trying
13 to -- anyway.

14 DR. ULSH: Do you want to go ahead?

15 MR. GRIFFON: Yep.

16 DR. ULSH: All right, next we come to the
17 situation where the worker was working in an
18 area with a ten-minute stay time. Again, this
19 is the same argument as before. Stay time was
20 typically calculated based on the maximum dose
21 rate in the area. We cannot assume that that
22 is representative of an average dose rate that
23 a worker would have been exposed to.

24 I don't know the details of the
25 annular tank area so I can't comment

1 specifically on that. But it's certainly
2 plausible that a worker working in such an
3 area could have had a less than LOD reading,
4 but I don't have the details.

5 **MS. MUNN:** As a matter of fact, Mark, that's
6 not the reason for posting things like a ten-
7 minute stay to try to avoid any unnecessary
8 radiation at all.

9 **MS. DeMERS:** Well, I guess what I would like
10 to see is if people are concerned that in
11 their dosimetry record they're getting zero,
12 and they're saying, hey, the field data did
13 not support that. Then that's what has to be
14 answered.

15 **MR. GRIFFON:** I think all of our experience
16 is that if you got down to calculating short
17 stay times like that, there was hefty
18 exposures going on.

19 **MS. MUNN:** Yeah, somewhere, somewhere in the
20 room.

21 **MR. GRIFFON:** Somewhere where you're doing
22 the work. I mean, I would argue why would you
23 base it on somewhere where you're not doing
24 the work?

25 **MS. MUNN:** That's true.

1 **MR. GRIFFON:** Like running in and out of a
2 reactor core during a shutdown. I think
3 that's when you have very short stay time, and
4 you cycle people in and out to do, you know --

5 **MS. MUNN:** That's true. I wouldn't argue
6 that.

7 **MR. GRIFFON:** So I would be surprised to, I
8 mean, that surprises me a little assuming the
9 allegation is accurate.

10 **DR. ULSH:** Mark, all the allegation says is
11 that he was working the area, the general
12 area, where there was a ten-minute stay time.
13 It's possible that the area --

14 **MR. GRIFFON:** That he wasn't part of the,
15 yeah.

16 **DR. ULSH:** Yeah, I just don't know. I don't
17 have the --

18 **MR. GRIFFON:** We don't know, okay.

19 **DR. MAKHIJANI:** Mark, there may be like a
20 sludge tank with americium or something like
21 that where, a small area. I'm speculating
22 obviously.

23 **MR. GRIFFON:** But what Brant's saying is he
24 may not have been one of the individuals that
25 was going down in the tank and doing something

1 or whatever.

2 **DR. ULSH:** Well, pure speculation, I'll
3 admit that, and I don't have the details but
4 I'm just saying that it's not a foregone
5 conclusion that this necessarily have to
6 represent a falsification of dosimetry.

7 **MS. DeMERS:** Well, all I'm saying is they're
8 concern is that their dosimeter readings do
9 not match the fields that they were in. And
10 that's what has to be addressed.

11 **MS. MUNN:** Now we need a lot of detail in
12 each case in order to address that.

13 **MS. DeMERS:** And the purpose for putting
14 these examples in was to let you know that
15 it's, you know, a fairly widespread concern.
16 And I can go back to these people and get you
17 all the details you want.

18 **DR. ULSH:** If the Board decides that we
19 should run down these individual cases, and
20 you can provide the details, then we will do
21 it.

22 **MS. MUNN:** Might not be a bad idea to do at
23 least one or two of them.

24 **MR. GRIFFON:** Right, and I understand your,
25 I mean, you could absolutely be correct on

1 both, the one I'm thinking back to is the
2 radiation technician with the zeros. That
3 could certainly be true, you know, if the
4 thing that he mentions, or her or she.

5 I don't know if it's a, but the thing
6 that's mentioned that's also interesting to me
7 is that he says in that area other workers
8 were cycled out constantly. Now it could be
9 that the rad tech was working, like you said,
10 at the perimeter but then occasionally making
11 readings, but that is an interesting fact in
12 that situation, too.

13 **DR. ULSH:** I'm not, again, I mean, we are
14 willing to run this down if the Board
15 determines that we should, and we can get
16 adequate detail. If Kathy can provide that,
17 that'd be great.

18 **MR. GRIFFON:** But we also have to think how
19 it's going to help us if, you know, if you
20 find X then what's that going to prove or
21 disprove or whatever?

22 **DR. ULSH:** Now I would point out that there
23 are a couple of specific instances where we
24 have run these down. I've just shown you one,
25 but certainly, if you feel that you would like

1 to see additional ones and details, sufficient
2 details are provided, we will do what we can
3 to run it down.

4 **MS. DeMERS:** The individual that you ran
5 down?

6 **DR. ULSH:** I'm talking about the rad control
7 tech with the dosimetry, and there were a
8 couple of other ones in the previous meetings,
9 the individual that said he was receiving dose
10 while he was in Korea. That one didn't pan
11 out.

12 **MS. DeMERS:** Okay, the question is, that the
13 petitioners have is does the field data
14 support that reading on the dosimeter?

15 **DR. NETON:** But Kathy, this is Jim Neton.
16 That's almost impossible to determine. I
17 mean, you would have to go and get the exact
18 RWP that the person worked on during that
19 period if they were even on that RWP. And
20 then figure out their time and motion study
21 within the fields. I mean, I don't know, I'm
22 not against doing this, but I just feel that
23 it's a wild goose chase.

24 **MR. GRIFFON:** I don't know where it's going
25 to get us, that's the problem.

1 **DR. NETON:** I mean, it's an assertion --

2 **MS. DeMERS:** You have to answer the question
3 for them.

4 **MR. GRIFFON:** But even if we go back, for
5 this radiation technician, I mean, certainly -
6 -

7 **MS. DeMERS:** What if you go back and he has
8 the, and he spent ten minutes in the AR per
9 hour field?

10 **DR. NETON:** We wouldn't know that because if
11 the AR per hour field is in the right-hand
12 corner of the room, and he walked into the
13 entryway that was substantially west, he just
14 -- you're not going to get that time/motion
15 information from the RWP for sure. It's just
16 recommendations as to where to avoid and where
17 the hotspots are. I don't know how you would,
18 you can reconstruct a dose from an RWP.

19 **MS. DeMERS:** Well, I guess what the bottom
20 line is that that's the concern. They don't
21 think their dosimeters are reflecting what
22 they've received in the field, and that's the
23 question that you're going to have to answer
24 for them.

25 **MR. GRIFFON:** Well, I guess, let me try to

1 ask this question on the radiation technician
2 again. I'm trying to understand that when
3 this no data available, how did that, that
4 form went to the supervisor or where did that
5 terminology come from and then how did we get
6 to a zero, or where did that terminology come
7 from I guess is what I'm trying to understand.

8 **MR. LANGSTED:** This is Jim Langsted. That
9 was the phrase that was used on the report
10 that was printed out from the dosimetry system
11 and sent to the supervisors. And so they
12 would, if their group was exchanged on a semi-
13 monthly basis, every two weeks they would get
14 a report after the badges were read with
15 everybody in their group on it.

16 **DR. ULSH:** And didn't you say, Jim, that
17 sometimes that was posted where employees
18 could look at those results.

19 **MR. LANGSTED:** Yeah, back in those days
20 sometimes it was, you know, some supervisors
21 didn't show them to their group, some showed
22 them to their group, some posted them on the
23 bulletin board.

24 **DR. ULSH:** So it is possible that workers
25 would have seen the results of their dosimeter

1 in these reports and saw no data available.

2 **MR. GRIFFON:** And so when they saw no data,
3 when he or she again saw no data available for
4 several cycles, it could have just been that
5 he was falling within the, it was processed
6 yet? Is that --

7 **MR. LANGSTED:** You know, as we discussed
8 before, the report would have to be run
9 sometime and sent in. If a badge was held up
10 because of a, either not getting exchanged or
11 because of some issue with trying to resolve a
12 problem, sometimes the report was printed and
13 sent out in a timely manner and all the data
14 wasn't on it.

15 That doesn't mean that the data didn't
16 ultimately get in a worker's record, but they
17 may not have seen that. If they didn't
18 exchange it, it would show up as a no data
19 available, but they'd still be wearing the
20 badge. But that no data available phrase does
21 not show up in the records that are in the
22 claimants' files, the employees' files today
23 or in the electronic database. That was a
24 phrase that was on that printed report.

25 **MR. GRIFFON:** But within this employee's

1 file it may be that their, if they had
2 particular badges that were being held back
3 or, you know, if there was an investigation or
4 something like that, a note or something might
5 show up in the employee's record on that? Or
6 not necessarily until later years probably,
7 right?

8 **MR. LANGSTED:** Well, Mark, that depends on
9 the timeframe and back in this '82, '83
10 timeframe it's unlikely that there was a
11 formal report or anything.

12 **MR. GRIFFON:** I'm just trying to think
13 through where we could possibly go with this,
14 and I'm not sure that you could take it much
15 farther, you know? But just my opinion
16 anyway.

17 Brant, I'll turn it back over to you.
18 I'm not sure where we left off.

19 **DR. ULSH:** We're still on this same comment.
20 We just talked about the annular tank one. I
21 think, let me make sure, I think the last one
22 in this comment, yes, it is the last one, is,
23 here's what the comment states, "Certain high-
24 dose projects would result in film badges that
25 were reported as black. The employees

1 involved indicated that their dose was
2 reported as zero."

3 That is possible. It's a
4 characteristic of film badges that if they
5 were exposed to light, it could blacken their
6 badge. So this could be light contamination.
7 That's entirely possible. We would have to
8 review the specifics of the situation.

9 I mean, again, we're in the same
10 situation as with the annular tank guy. We
11 don't have the details to run that one down,
12 but it is certainly possible that exactly what
13 is being asserted in the comment could have
14 happened. Certain film badges could have been
15 blackened and that could have been the result
16 of light contamination.

17 **MS. DeMERS:** In one of the records I've been
18 trying to pursue is the procedure for how
19 those, in those situations, how the dose is
20 assigned.

21 **DR. ULSH:** Keep in mind you're talking about
22 the film badge era, so I think you're talking
23 pre-'69? Do I have the right year? Yes, pre-
24 '69, and it's unlikely that, and we're running
25 up the same problem that we had with the

1 previous procedures that we referenced.
2 There's just not a lot of, not a lot available
3 in terms of written documentation back in the
4 timeframe. If you find something like that,
5 that'd be great. We'd look at it, but we're
6 not aware of anything.

7 **MS. DeMERS:** It's one of those records that
8 has not been provided.

9 **DR. ULSH:** So that's our answer, Mark.
10 That's all we have to provide unless there's
11 more that needs to be discussed.

12 **MR. GRIFFON:** Let's just go on to 21 if you,
13 the matrix or I guess it's ten in your --

14 **DR. ULSH:** Twenty-one in the matrix and ten
15 in the comment responses. This issue is
16 bioassays redone when they indicated high
17 exposures. And in the matrix it says there
18 are two examples cited. The claimant
19 bioassays were redone or individuals were
20 recounted when the readings were high and
21 subsequent results were declared as having no
22 exposures or false positives.

23 Now really if you look at our response
24 on page 32, the nuts and bolts of the whole
25 thing is at the bottom of the page, and I

1 don't know why this didn't occur to me
2 earlier, but it didn't. We typically receive
3 the raw bioassay data from a site for a
4 claimant. And that would include results that
5 the site had determined to be false positives.
6 We don't rely on that determination.

7 I've had conversations with dose
8 reconstruction personnel, people who do the
9 dose reconstructions, and they indicated that
10 it would be extremely unusual for us to
11 exclude a bioassay result even if the site had
12 determined it was false positive. Now, I
13 won't say that it has never happened, but we
14 sure couldn't come up with a situation and the
15 bottom line is we would not rely on the site
16 to make that determination. We would make
17 that determination ourselves. And in almost
18 all cases if not all cases, we would just
19 include it as another bioassay plan.

20 **MR. GRIFFON:** Assuming that the false
21 positive was included in the records I guess,
22 which may be reason not to believe.

23 **DR. ULSH:** That's correct, we have no
24 indication of that. So I really think that's
25 all I've got to say about that one right now.

1 **MR. GRIFFON:** Okay, and SC&A, any comment
2 back on that?

3 **MS. DeMERS:** No, I've got some information
4 that I will roll into the report.

5 **DR. ULSH:** Next one, Mark, 22?

6 **MR. GRIFFON:** Yep.

7 **DR. ULSH:** Twenty-two on the matrix. It
8 corresponds to page 33 in write up, data
9 integrity comment number 11, instances of
10 noted available in situations of high
11 exposure. I'm looking at this one. Oh, okay,
12 okay. Here's what went on. SC&A says in
13 their comments that they have addressed this
14 issue under data integrity comment number
15 nine. And I think our notes agree with that
16 that this issue was not closed but merged
17 under nine. So I don't know if we need to
18 talk about that again. It's the same issue,
19 no data available.

20 **MR. GRIFFON:** Now this is affidavit number
21 22 are we on?

22 **DR. ULSH:** We are on number --

23 **MR. GRIFFON:** And there was, this again is
24 no data available, but this is a specific
25 affidavit, I think, and I asked that you track

1 back a specific case again?

2 **DR. ULSH:** Oh, oh, oh, okay, I just read the
3 next part of it, Mark, on the next page. This
4 was the individual who worked in Korea, I
5 mean, I'm sorry, who was in Korea. There
6 might have been two concerns on his affidavit.
7 I think the Korea one we discussed when we
8 dealt with it last time.

9 **MR. GRIFFON:** Yeah, we did. We touched on
10 that.

11 **DR. ULSH:** I don't know that we've done any
12 more on that at the moment.

13 **MR. GRIFFON:** I didn't think, is this the --

14 **DR. ULSH:** Yes, if you look at the next --

15 **MR. GRIFFON:** Korea.

16 **DR. ULSH:** If you look at the next page,
17 Mark, of your matrix, ten of 13 continues
18 comment 22.

19 **MS. MUNN:** It's unclear to me whether that
20 was one individual or two.

21 **DR. ULSH:** I think it's one individual,
22 Wanda.

23 **MR. GRIFFON:** Okay, I wasn't sure about that
24 either.

25 **MS. MUNN:** Blackened film was one, I was

1 thinking blackened film was one, was the
2 second individual.

3 **DR. ULSH:** I think it's one individual
4 raising two issues, the blackened film and the
5 Korea.

6 **MR. GRIFFON:** So it's the same individual
7 but you didn't, you tracked back the Korea
8 aspect but not the other.

9 **DR. ULSH:** Yeah, again, back in the film era
10 I don't know that there, I mean, we wouldn't
11 expect there to be an incident report -- I'm
12 sorry, an investigation report in his file
13 during that period. I don't know what more we
14 can provide other than the explanation of how
15 that would be possible for a person to have a
16 blackened film and get a zero read.

17 **MR. GRIFFON:** I don't know if you gave a
18 specific timeframe for that.

19 **DR. ULSH:** I don't know. I don't have the
20 affidavit in front of me.

21 **MR. GRIFFON:** I don't know either. Can we
22 leave that open to the extent you can make
23 what comment on that you can?

24 **DR. ULSH:** Okay.

25 **MR. GRIFFON:** I mean, it may be inconclusive

1 or whatever but --

2 Twenty-three.

3 **DR. ULSH:** Twenty-three, most worker, most
4 exposed workers were not monitored for
5 neutrons. This corresponds to comment number
6 12 on page 33 of the comment responses. Let's
7 see, now our notes indicate that this issue
8 was closed, but I didn't have the matrix in
9 front of me when I wrote that. I don't know
10 if we agree with that, Mark. Let me see.

11 **MS. DeMERS:** There's a question to be
12 answered here.

13 **DR. ULSH:** Okay, there are -- SC&A has
14 raised some new, well, expanded on this issue.
15 Okay, on page 35 of the comment responses, I
16 think we're getting into the stuff that Kathy
17 might be referring to. And that was in the
18 comment they talked about when fluoride was
19 added to the molten salt extraction process,
20 neutron dose rates increased significantly.

21 **MS. DeMERS:** Those comments were just to
22 alert you where they were saying there were
23 neutron levels.

24 **DR. ULSH:** Well, I'm wondering if there
25 might be some confusion here because we're not

1 aware that fluorination was ever added to the
2 molten salt process. And I'm wondering if
3 they might be thinking of the fluorinator. I
4 mean, I'm just guessing, but that's the only
5 area that we know where that would be an
6 issue. And that would have been in the
7 plutonium-fluoride process. Now if that
8 speculation is true, first of all that was
9 originally a remote operation. Operators were
10 in a control booth and protected by a water
11 shield. But in any case, the fluorinator, if
12 that's what we're talking about here, was
13 covered by the NDRP. Like I said, we're not
14 aware of any evidence that fluoride was ever
15 added to the process. I'll most certainly
16 look at it.

17 **DR. MAKHIJANI:** What was the molten salt?

18 **DR. ULSH:** That is the issue, that's a
19 process --

20 **DR. MAKHIJANI:** No, no, I'm not talking
21 about what the process was. What was the
22 chemical? What was the molten salt?

23 **DR. ULSH:** Molten salt was a mixture of
24 potassium chloride, magnesium chloride and
25 calcium chloride salt.

1 **DR. MAKHIJANI:** So it was chloride?

2 **DR. ULSH:** Correct.

3 **DR. ULSH:** Oh, I see what you're saying. I
4 wonder if maybe that's --

5 **DR. MAKHIJANI:** Yeah, I'm wondering whether
6 there might be a, is there an alpha chlorine
7 reaction in the same way? I don't know off
8 the top of my head.

9 **MR. FALK:** I don't think it is a very
10 efficient process. I do not recall any of the
11 molten salt operations being identified as a
12 high neutron exposure area.

13 **DR. MAKHIJANI:** But if whatever neutrons
14 were there from the description would be
15 because of the shield, right? Or am I mixing
16 up two things?

17 **DR. ULSH:** I think you're mixing up two
18 things, Arjun.

19 **DR. MAKHIJANI:** I thought maybe I was.

20 **DR. ULSH:** The fluorinator, what we're
21 talking about with the water shield, that was
22 remote operation in the early years, in the
23 '50s.

24 **DR. MAKHIJANI:** Okay.

25 **DR. ULSH:** That was the fluorinator. That's

1 not the molten salt.

2 **DR. MAKHIJANI:** Okay, sorry, I mixed up
3 those two things.

4 **DR. ULSH:** So I don't know. That's all I
5 can say about that particular issue. With
6 regard to other areas, other neutron areas,
7 our contention that there were very few
8 sources of neutrons at Rocky Flats that were
9 not associated with plutonium operations. The
10 chemistry of the uranium process that was
11 performed in Building 881 until 1964 produced
12 significantly less neutrons in the plutonium
13 processing.

14 And if you compare the neutron yield
15 of the enriched uranium fluoride versus the
16 plutonium fluoride, it's about a factor of one
17 times into the negative five. So it's not
18 clear to us how this would be a significant
19 neutron exposure hazard. I would contend that
20 it's insignificant.

21 **MR. GRIFFON:** I think that at this point
22 we've got, this is one of those ones where we
23 have your response and the evaluation report
24 and SC&A is going to provide a review report
25 and can include comments there unless there's

1 any other clarification from SC&A's side.

2 **DR. MAKHIJANI:** No, I think we need -- Joe's
3 area.

4 **DR. ULSH:** All right, Mark, I think, does
5 that take us to number 24 on the matrix?

6 **MR. GRIFFON:** I think so, yeah. Almost
7 there.

8 **DR. ULSH:** I'm getting a little tired. I
9 don't know about anyone else.

10 **MR. GRIFFON:** I think all of us are, yeah.

11 **DR. ULSH:** The issue here, neutron badge
12 reading was defective and just cites, if I
13 have this correct, my brain's getting a little
14 mushy now.

15 **MR. GRIFFON:** I think we have no further
16 action required on this.

17 **DR. ULSH:** I think that's the case. Let me
18 see --

19 **MR. GRIFFON:** If that's agreeable with SC&A.

20 **DR. ULSH:** Yeah, we're going to stand by our
21 previous response. I think no action.

22 **MR. GRIFFON:** And the next one as well
23 unless there's something new from SC&A's side.

24 **DR. ULSH:** Well, let me go into that one a
25 little, the security guard issue. Data

1 integrity comment number 14, page 36. And
2 SC&A says that they have not yet located
3 security guards to verify the lack of
4 monitoring among this worker category.
5 Neither have we, so we're in agreement with
6 that. In fact, during the post-1991 period
7 dosimetry was required to gain access to
8 radiation areas.

9 And in their expanded comment SC&A
10 contends that assignment of coworker dose of
11 unmonitored security guards may or may not be
12 bounding. Let's think about this for just a
13 minute. Unmonitored workers with the
14 potential for significant exposure, what we
15 typically do is assign the 95th percentile
16 value of monitored workers. So in order for
17 this approach to not be bounding, we have to
18 have a couple of things happen.

19 First of all, keep in mind that only
20 people who were judged to have an exposure
21 potential of greater than 100 millirem were
22 badged. Now, we do not contend that that was
23 entirely, 100 percent reliable. In other
24 words, we're not saying that if a person was
25 unbadged, necessarily they wouldn't have

1 gotten a dose higher than 100 millirem. We'll
2 grant you that that might have happened in an
3 individual case or two or more. I don't know.

4 But what we're saying is that people
5 who were judged to have this exposure
6 potential, number one, that would have to be a
7 mistaken judgment, that's possible. They
8 would also have to have entered a radiation
9 area with dosimetry which was contrary to the
10 radiation control policies in place at the
11 time.

12 And then finally, they would have had
13 to have received doses that were higher than
14 95 percent of the monitored workers in order
15 for this not to be a bounding approach.
16 Personally, I don't see how that's a credible
17 scenario.

18 **MR. GRIFFON:** Well, I guess the other, that
19 may clarify one thing is that are you assuming
20 that security guards would get the 95th
21 percentile in a coworker?

22 **DR. ULSH:** If it was possible for a security
23 guard to get a significant exposure potential
24 then we would treat them just like any other
25 unmonitored radiation worker.

1 **MR. GRIFFON:** Okay, because in some models
2 you, I mean I could see an argument for not
3 treating them like ^ necessarily.

4 **DR. NETON:** Yes, that would have to be
5 addressed on almost a case-by-case basis.

6 **MR. GRIFFON:** Right, right. So if it's
7 case-by-case, then, Brant, your position
8 doesn't hold there, that they wouldn't have to
9 be higher than the 95th. Because sometimes you
10 might assign them the 50th. That's different.

11 **DR. ULSH:** That's true, but that would be an
12 issue with that specific dose reconstruction.
13 In other words, let's say SC&A reviewed one of
14 our dose reconstruction, and we had assigned
15 the 50th percentile. And SC&A would say, no,
16 this person actually had a significant
17 exposure potential, and you know, we discussed
18 it, and at the end of the day maybe we agree
19 with SC&A. We go back and assign 95th
20 percentile, not an SEC issue.

21 **MR. GRIFFON:** I guess you're right. It's
22 more of a site profile, yeah, it's a site
23 profile issue.

24 **DR. ULSH:** Moving on. Shall I move on?

25 **MR. GRIFFON:** Certainly.

1 **DR. ULSH:** We're up to matrix comment number
2 26, I believe which the essence of it is that
3 many incidents were not recorded, and that
4 picks up on page 37 of the comment responses.

5 SC&A's expanded on their previous
6 comment talking about the atmosphere at Rocky
7 Flats that was such that incidents may not
8 have always been reported. And they say the
9 Operations personnel simply cleaned up spills
10 and continued with their work.

11 **MR. GRIFFON:** I think did we not address
12 this by saying that you'll provide a coworker
13 approach? I mean that you believe the
14 coworker approach is going to be bounding of
15 this?

16 **DR. ULSH:** Let me look, Mark. Let me look
17 at our response. We do grant that some of the
18 smaller incidents and minor spills may not
19 have been reported. And we also grant that it
20 may not always be possible to tie an intake to
21 a particular incident. However, what we said
22 at the last Board meeting was that if we would
23 detect an intake in a bioassay, what we
24 typically do is assign a chronic intake
25 scenario that fits bioassay data.

1 And there seems to be some concern
2 that if an incident was unrecognized, then it
3 may not, special bioassay may not have always
4 been performed. We grant that. That might
5 make it difficult for us to tie an intake to a
6 particular incident. We grant that, too.
7 That does not prevent us from doing a
8 sufficiently accurate and claimant favorable
9 dose reconstruction. That's the point.

10 **MR. GRIFFON:** Right, and I think we've been
11 through this before. I'm not sure, but --

12 **DR. MAURO:** Yeah, this is John. When we
13 were talking about the high-fired plutonium,
14 this subject came up, and you provided many
15 examples of how you would go about placing a
16 plausible upper bound for, not only chronic,
17 but also acute exposures to an incident.

18 So I think to a large extent as you
19 move into the more technical issues, a lot of
20 them have been addressed thoroughly, and we're
21 going to keep returning to the data
22 reliability issue as being the underpinning.
23 I think from a technical point of view, going
24 back into this issue again, you know, you've
25 covered it thoroughly, and I guess I'll

1 reiterate. It's data reliability that's going
2 to be center stage.

3 **DR. ULSH:** Okay, well, that's good. Can I
4 dare to hope then that we don't have to talk
5 about this particular issue again because it
6 seems to keep popping up.

7 **DR. MAURO:** Yeah, this is John. I think
8 that Jim and his examples in our last meeting
9 in the handouts covered this subject.

10 **DR. ULSH:** Okay, I do feel compelled that,
11 you know, even on an issue, several issues
12 have been designated as closed at the last
13 meeting and then SC&A's expanded on these
14 comments. And I do feel compelled to respond
15 to those. I'd sure like not to have to do
16 that.

17 **MR. FITZGERALD:** Well, let me make a point,
18 okay? Kathy was doing this onsite visit
19 during the time that we were having the
20 meeting. So our discussion was completely
21 devoid from her review. We provided the trip
22 report pretty much as was. I mean, it's not
23 an attempt to re-open issues as much to convey
24 that information she was able to collect. But
25 recall again the timing of this, that her

1 review was happening at the very same time
2 that we were meeting in Cincinnati, so there
3 is a reason why these issues aren't linked
4 together as tightly as they might be.

5 **DR. ULSH:** I understand what you're saying,
6 but when this came over, like I said, I did
7 feel compelled to spend quite a lot of time
8 and resources to address them.

9 **MR. FITZGERALD:** We were trying to give you
10 the benefit of what was identified as was
11 requested but I do understand why there's a
12 little bit of overlap.

13 **DR. ULSH:** Okay, Mark, would you like me to
14 move on to the next one?

15 **MR. GRIFFON:** I think so, yeah.

16 **DR. ULSH:** This is estimating ingestion
17 doses. I think we've already talked about
18 this one. It seems to be similar to -- hold
19 on, now -- seems to be similar to the issue
20 that was raised earlier when we talked about
21 ingestion.

22 **MR. GRIFFON:** Yeah.

23 **DR. ULSH:** My comment, you've probably seen
24 that text before because I think I cut and
25 pasted it. I would just reiterate that we

1 have the ability to model ingestion intakes if
2 it's a feasible scenario and it's claimant
3 favorable to do so.

4 **MR. GRIFFON:** The comment I had before in
5 the matrix, and I remember Jim Neton offering
6 this, that you would re-evaluate the ingestion
7 model to be used.

8 Jim, do you remember saying that?

9 **DR. NETON:** Re-evaluate the ingestion model
10 to be used?

11 **MR. GRIFFON:** Yeah.

12 **DR. ULSH:** Here's what I have on the matrix,
13 Jim. This is comment number 27, page 11 of
14 13. Workers ate in workplaces. One
15 investigation concluded that there was
16 ingestion via inhalation. However, bioassay
17 data to be interpreted in light of this
18 problem --

19 **MR. GRIFFON:** And I think hearing Brant's
20 explanation from earlier, it seems to suffice,
21 but I don't know why --

22 **DR. NETON:** I think what, it was a question
23 that was ambiguous in the sense that was it an
24 ingestion from eating in the workplace or was
25 it ingestion from potentially from

1 resuspension?

2 **MR. GRIFFON:** Right, that's the way, it was
3 in two parts.

4 **DR. MAKHIJANI:** I think it might have been
5 eating in the workplace, right, Kathy?

6 **MS. DeMERS:** Yes.

7 **DR. NETON:** Eating in the workplace, Brant,
8 I think addressed the issue fairly well. I
9 think the resuspension issue is what wasn't
10 clear in my mind. But that, I think, would
11 have been a site profile comment.

12 **MR. GRIFFON:** Right.

13 **DR. NETON:** And we certainly have come to
14 some consensus with SC&A on how we're going to
15 deal with resuspension in the workplace. At
16 least if we ^ sampling data.

17 **MS. MUNN:** And when we wrote this, we still
18 hadn't completely put the Super-S question to
19 bed, had we?

20 **DR. NETON:** And of course, it's late in the
21 day, and having said what I just said, I just
22 remembered that we are reconstructing doses
23 based on bioassay data not air sampling data,
24 so the resuspension issue really kind of come
25 out.

1 **MR. GRIFFON:** Yeah, it really, yeah, it
2 does. It does now that I, yeah, I think we
3 did this late in the day last time, too.

4 **DR. NETON:** Using air sample data to
5 reconstruct doses in suspension is not --

6 **MR. GRIFFON:** We still weren't sure, I
7 guess, last time.

8 **DR. NETON:** Now that we have a coworker
9 approach outlined, what we're proposing here
10 in data I don't see this as a player.

11 **MR. GRIFFON:** The last sentence to me is
12 interesting, and I think it might overlap in
13 some of the samples or examples that you're
14 going to do. The relevance of this is in the
15 deposition of high-fired, in large parts of
16 the plant due to the fires.

17 And this gets into the question, I
18 guess, one question anyway, of the exposure to
19 a mixture of solubilities or different kinds
20 of plutonium in different areas and how that
21 would be addressed. But that's really, I
22 think we all agree that that was really
23 something that we want to see in an example.
24 But 27's closed I think, from my standpoint.

25 **DR. ULSH:** Okay, that brings us to 28 then.

1 And I think, unless SC&A tells me differently,
2 I think we're in agreement that this is not an
3 SEC issue? This is the work week. The length
4 of the work week was 45 hours instead of 40
5 hours.

6 **DR. MAURO:** Not an SEC issue.

7 **MR. GRIFFON:** Right.

8 **DR. ULSH:** Oh, oh, shoot. I thought we were
9 done, okay there were two issues raised in, I
10 guess it was Kathy's write up. They were
11 characterized as additional issues, and in our
12 response to the first issue which dealt with
13 other radionuclides at Rocky Flats, I kind of
14 left in there, I took the liberty of leaving
15 in there a question that I think Arjun had
16 raised if my recollection is correct, about
17 some 40 Plutonium-238 sources and one
18 strontium source at Rocky Flats. And my notes
19 aren't real clear on this, what the reference
20 was, but I think it was 1990 D&D document.

21 Arjun, does this ring a bell?

22 **DR. MAKHIJANI:** That's correct. It was
23 after the site had been renamed, I think.
24 There were maybe 90 or 92 orphan sources that
25 were at the site.

1 **DR. ULSH:** So I think the question was we
2 weren't clear whether those were sealed
3 sources at the time we discussed it. Is that
4 right?

5 **DR. MAKHIJANI:** Or made at the site or
6 imported.

7 **DR. ULSH:** Okay. We checked this out this
8 issue of other radionuclides. We already
9 talked about some of them in earlier comments.
10 Let me walk through them. The Chem Risk Task
11 One report is a reference that we relied on
12 pretty heavily for this. And that report
13 contains a comprehensive list of the
14 radionuclides present at the Rocky Flats site.

15 Plutonium-238 was present as a
16 contaminant in weapons-grade plutonium. That
17 is true. And intakes of that radionuclide
18 would be measured using plutonium-specific
19 bioassay. And if it wasn't clear which
20 isotope we were dealing with, we would choose
21 the most claimant favorable among the
22 plausible choices.

23 Oh, the Strontium-90, that was listed
24 in the Chem report as having been present at
25 Rocky Flats as a sealed source, plated source,

1 liquid source or analytical stock solution in
2 small quantities used for research, analytical
3 and calibration activities. So I think it was
4 what we suspected, Arjun, that it's one of
5 these small, sealed sources that's used in a
6 lab or in a stock solution or something like
7 that.

8 Let's see, I think Kathy's report
9 reads the tritium and noted that the tritium
10 bioassay was performed at Rocky Flats. So
11 that's how we would cover that.

12 **MS. DeMERS:** Well, it was performed, but
13 what I have not been able to figure out is was
14 it frequent enough to cover the exposures of
15 the people involved.

16 **DR. ULSH:** Don't have an answer for that
17 right at the moment.

18 The next one was Americium-241
19 processing methods. And when we covered that
20 pretty much at length unless someone wants to
21 go into that some more.

22 U-233 was mentioned. Again, that one
23 would have been detectable through either
24 uranium-specific bioassay or through gross
25 alpha bioassay depending on the time period.

1 We agree with SC&A with the comment that
2 curium and neptunium were used as tracers then
3 were handled in small quantities. We're not
4 aware of credible intake scenarios for those
5 elements that would result in a significant
6 internal exposure hazard.

7 Polonium-210 falls into the same
8 category as Strontium-90. It was one of these
9 small laboratory sources according to the Chem
10 Risk report.

11 **MS. DeMERS:** In what time period?

12 **DR. ULSH:** For polonium?

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

14 **DR. ULSH:** I don't know, Kathy. I don't
15 have it in front of me. It was just listed in
16 the Chem Risk report. It was a comprehensive
17 list that listed polonium only under that
18 category, but I assume that that would cover
19 all time periods.

20 **DR. MAKHIJANI:** Could I ask a question about
21 this Chem Risk report? My memory of, this is
22 far back and my memory of it is foggy. But
23 wasn't it very heavily criticized as not being
24 a good report or was that a different Chem
25 Risk report or a different contractor perhaps?

1 I don't want to be unfair to Chem Risk here
2 because this is from vague memory. There was
3 one of these kind of reassessment source term
4 type of reports that was done that made
5 reviewers very unhappy, and I don't know that
6 it was the Rocky Flats one to be fair, but it
7 may have been. Does anybody have any memory
8 of that?

9 **DR. ULSH:** I'm looking around the table here
10 in Cincinnati, Arjun, and no one's aware of
11 that for this document.

12 **MR. MEYER:** Brant, this is Bob Meyer. That
13 report was actually the beginning of the
14 environmental dose reconstruction study and
15 put a lot of time and effort into establishing
16 the radionuclides present at the site. We've
17 got all the details on that in addition to
18 records review and classified records review.
19 They also did a lot of interviews, and it's
20 the basic document that was used then for the
21 rest of the, of that dose reconstruction.

22 **DR. MAKHIJANI:** Okay, so I must be
23 remembering something else. So thank you for
24 correcting that record. I'll withdraw that
25 comment.

1 **DR. ULSH:** I think we have reached the last
2 issue, I hope.

3 **MR. GRIFFON:** There's one more there I
4 think.

5 **DR. ULSH:** This issue that we're about to
6 talk about is the last one. And this was the
7 second of the additional comments that were
8 sent --

9 **MS. DeMERS:** You didn't really get back to
10 the issue of, that I've been discussing before
11 that the field indications do not represent
12 what's coming out on the dosimetry. And we've
13 already beat this to death.

14 **DR. ULSH:** Okay, I think we're in agreement
15 there. I would just mention that there are a
16 couple of references that SC&A would like to
17 see. They're listed there on the bullets on
18 page 41. And I have those in a folder on my
19 computer, and I'm going to burn a disk and
20 send them over to you directly. So I'll send
21 them to Joe. Well, the ones that are listed
22 there.

23 **MR. GRIFFON:** With this last point, Brant, I
24 think the one thing that we spent a lot of our
25 afternoon on here was these specific

1 affidavits within the petition and the
2 allegations. And to the extent you could, we
3 did, you know, you were able to track back
4 some, at least partially for some of these
5 cases. I guess the thing I think that's going
6 to be important for this evaluation is, in the
7 evaluation report if I, you know, one thing
8 that we talked about this morning was the
9 external database data and the internal
10 database data. And I think it was mentioned
11 that Kaiser-Hill indicated to NIOSH that they
12 reviewed these cases and they matched pretty
13 well. I think what this brings to light and
14 makes even more important from my standpoint
15 is that we need NIOSH to track that back as
16 well and report on that fully. I don't think
17 we can just take the word of an individual
18 from Kaiser-Hill that says it looks like
19 everything matched up pretty well especially
20 with these allegations hanging out here from
21 many of the petitioners.

22 **DR. ULSH:** And Mark, are you talking about
23 external data?

24 **MR. GRIFFON:** I think external and internal.

25 **DR. ULSH:** Well, for external, Craig Little

1 did talk about what we've done.

2 **MR. GRIFFON:** Right, you did some specific
3 analysis there so I guess more for internal is
4 where the real gap is if you think that you
5 did enough on external. I mean, that's up to
6 you to judge.

7 **DR. ULSH:** I agree with you on internal.

8 **MR. GRIFFON:** Yeah, you have to support
9 case, you know, for the data being reliable.
10 And if you think you've taken that far enough,
11 that's just your decision.

12 **DR. NETON:** Mark, this is Jim. I think that
13 these assertions by, in the affidavits are
14 somewhat of a different issue. In fact, one
15 would argue that if the badge read zero and
16 the database says zero, the claimants or
17 petitioners are still asserting that those
18 zeros are not, except for sections, the zeros
19 are inappropriate.

20 **MS. DeMERS:** Yes, that is true.

21 **DR. NETON:** That's a different issue, and
22 I'm not really sure how one deals with
23 assertions that cannot really be
24 substantiated, you know, 30 years, 40 years
25 later. I've just been told that there were no

1 RWPs in this timeframe so even if we wanted to
2 and had the resources, couldn't go back to
3 them.

4 **MR. GRIFFON:** I guess to me, Jim, it just
5 raises the importance that where possible we
6 check these databases back to the raw --

7 **DR. NETON:** I totally agree with you. I'm
8 trying to think about the other broader issue.
9 And in my mind if I can't go back because
10 there's no ^ or whatever, I think the only
11 other approach then is to document the
12 integrity of the dosimetry processing system,
13 and to the extent possible, that there is no
14 evidence of fraud where these numbers would
15 have been altered. Because if a dosimetry
16 system is capable of reading the dose on the
17 badge, then one would have to assert that they
18 were fraudulently made zeros.

19 **DR. MAKHIJANI:** Yeah, I think, Mark, Jim,
20 Jim is right and that there are two different
21 questions here. The one question is about the
22 transcription from the raw records into
23 electronic databases. And I think NIOSH has
24 done quite a bit of work on that transcription
25 with Rocky Flats to show that it's reasonably

1 good so far as I understood the discussion
2 this morning. I haven't looked at it in
3 detail, but at least from the discussion.

4 But the second issue is the one that
5 Jim was talking about and there it seems to me
6 is it is very difficult because you've got
7 sworn affidavits on one side, and then you've
8 got people who were there on the other side or
9 a contractor currently saying, so you've got
10 somebody's word against somebody's word. And
11 there may be safety complaints and, you know,
12 some documentation that could settle the issue
13 because otherwise you've got dueling hearsay.

14 **MR. GRIFFON:** I'm not sure what you mean by
15 dueling. I mean --

16 **DR. MAKHIJANI:** Well, not really dueling
17 hearsay. The workers who were present that's
18 unfair I guess to, to the people who've done
19 affidavits in a way. There's the people who
20 were there who say, you know, they experienced
21 X, and they don't believe their data records
22 because they may have been, they were
23 falsified. I mean, that's clearly the spirit
24 in all of the allegations.

25 And then you've got people who were

1 there in the health physics program or
2 contractors who are saying, no, there was
3 integrity in the program, and data were not
4 falsified. So you've got dueling statements
5 essentially. ^ statement without the
6 historical information settle the question.

7 **DR. ULSH:** Arjun's characterization there
8 where you've got dueling opinions, I mean,
9 you've got workers saying that they falsified
10 my dosimetry, and we've got workers who worked
11 in the dosimetry department saying, no, we
12 didn't. So you do have dueling assertions
13 here.

14 **MS. MUNN:** This is Wanda.

15 **MR. GRIFFON:** You've interviewed dosimetry
16 people that have said in statements that none
17 of this went on?

18 **DR. ULSH:** Yes.

19 **DR. MAKHIJANI:** Do you have sworn statements
20 from them?

21 **DR. ULSH:** No, not sworn statements. I
22 can't remember whether they were phone
23 conversations or e-mails.

24 **MR. GIBSON:** This is Mike, and I just, I
25 mean, who's going to admit that, the fact that

1 it's true, you know?

2 **MS. MUNN:** Well, who's going to admit that
3 they doctored their badge, but several of them
4 have maintained that that was true.

5 **MR. GRIFFON:** Quite a few of them admit that
6 actually.

7 **MR. GIBSON:** There is these dual opinions
8 here, but let's not say, well, let's not
9 believe the worker because he doctored his
10 badge or --

11 **MS. MUNN:** No, no.

12 **MR. GIBSON:** -- so by that same token, you
13 know, I have seen people, have seen health
14 physicists fired for doctoring records at the
15 facility in Mound.

16 **MR. GRIFFON:** I mean, part of what you have
17 to consider, I guess, is the overall, you
18 know, how many allegations were, I don't know
19 if we have an opportunity for that kind of
20 thing here. We've got some affidavits, but
21 not, you know.

22 **MS. MUNN:** Is Kathy still on?

23 **MS. DeMERS:** Yeah, I am.

24 **MS. MUNN:** Kathy from the documents that you
25 saw while you were onsite, do you have any

1 confidence that the field records that you're
2 talking about would really give the
3 investigator at this stage of development a
4 good feel for what the backgrounds were in the
5 areas that our claimants are concerned about?
6 I guess the bottom line question is even if we
7 get the records and look at them, are we going
8 to have, are we really going to have better
9 information then?

10 **MS. DeMERS:** I don't know how to answer that
11 because --

12 **MR. GRIFFON:** Well, I guess that's what I
13 asked John and you, Kathy, but SC&A to deliver
14 to us is sort of, I forget how we said it, a
15 more crisp recommendation on this. That if we
16 ask NIOSH to look at these, SC&A expects that
17 you might be able to look at what could be
18 concluded from this potentially. And I don't
19 think you need to answer that on the fly here,
20 but I guess that's what we want to know is it
21 worth --

22 Right, Wanda, is that what you're
23 asking, is it worth pursuing these and to what
24 end kind of?

25 **MS. MUNN:** I think what I'm really asking is

1 is there truly any way that we could in some
2 way reduce the anxiety that the claimants have
3 with respect to this data. Regardless of what
4 information we get, is it going to be valid
5 enough to be accepted?

6 **MS. DeMERS:** The path that I laid out, I ran
7 through with some of the site experts because
8 I wanted to know whether I was going in the
9 right direction. They felt I was going in the
10 right direction. I have not seen one of these
11 logbooks because they were not pulled for me
12 so the exact contents of those logbooks are
13 essentially, I can't tell you exactly what's
14 in them.

15 **MS. MUNN:** They're still a mystery to
16 everybody.

17 **MS. DeMERS:** But I know what I'm being told.

18 **DR. MAURO:** And Kathy, you said something
19 very important. The folks that you talked to
20 said you're on the right direction. The
21 implications being if you were to pursue that
22 direction, it would enhance credibility. That
23 is, it sounded like, yeah, that's the kind of
24 thing you need to do in order to find out or
25 whether or not there's a problem here. So I

1 mean, in a way they're telling you if you want
2 us to believe you, you've got to go look, you
3 know, if you really want to get to the bottom
4 of this, you have to do X, Y and Z. Sounds
5 like we have no choice but to do at least some
6 X, Y and Z. And the ball is in our court
7 right now to lay out a crisp recommended plan
8 of action that would do those things that the
9 folks you interviewed feel need to be done and
10 why, and what NIOSH might gain by looking into
11 these matters. So I mean, I think the ball's
12 in our court right now to turn over something
13 to the working group and NIOSH --

14 **MR. GRIFFON:** That's my sense, John. And I
15 was just saying, on the flip side of that, I
16 think NIOSH should be pursuing the database
17 versus raw records issue. Especially with
18 regard to internal. I think that's an opening
19 right now which you're well aware of. I mean,
20 you brought it up earlier.

21 **DR. ULSH:** We agree completely.

22 **MR. GRIFFON:** But I think, John, I think
23 that's the path forward here is that SC&A if
24 you could provide this crisp sort of
25 recommendation back to us and then we need to

1 say is it worth going further? And if so, in
2 what direction or to do what, to what end? Is
3 this a fair point right now that we can leave
4 this?

5 **MS. DeMERS:** Yeah.

6 **DR. MAKHIJANI:** Yep.

7 **DR. ULSH:** Yep.

8 **MR. GRIFFON:** Okay, plus we're all getting
9 tired. At least I'll speak for myself.

10 **MS. MUNN:** Yeah, can't think much more.

11 **DR. ULSH:** Okay, so what now, Mark?

12 **SAMPLE DOSE RECONSTRUCTIONS**

13 **MR. GRIFFON:** Well, what now, I guess I
14 don't know how much we want to go over these
15 cases, but I would like to, if you could go
16 through the cases --

17 **DR. ULSH:** Okay, how about this --

18 **MR. GRIFFON:** -- and tell at least what
19 kinds of cases you have there and give a quick
20 snapshot.

21 **DR. ULSH:** I provided a table, at this point
22 in the day I can't remember the name of the
23 file.

24 **MR. GRIFFON:** Yeah, Guide or something like
25 that.

1 **DR. ULSH:** Yeah, that's it. It lists
2 examples by number, one through six. Now I'd
3 like to caution you that these numbers
4 correspond to the folders on the O drive and
5 the folder that I mailed you, but I discovered
6 that when I opened up the actual example dose
7 reconstruction report, the titles of them
8 didn't always match the numbers. Sorry, that
9 was a late night error on my part.

10 **MS. MUNN:** They all got here.

11 **DR. ULSH:** Example one, I'll just walk
12 through this table and then, Mark, maybe you
13 can let me know if you want me to go any
14 further. Example one covers a hypothetical
15 neutron dose assignment for monitored workers
16 pre-'70, and it also considers missed dose
17 zeros assigned for blanks and reported zeros.
18 Those are the two issues that are covered in
19 that one.

20 Example number two is an example of a
21 geometry correction factor for external
22 dosimetry. That was performed using the glove
23 box TIB. That was an issue that was raised so
24 we thought that would be an appropriate one to
25 include.

1 Example number three is coworker
2 unmonitored external dose and also lead
3 aprons. It demonstrates our approach for
4 those situations, and I would also point out
5 that the table of distributions that we are
6 going to use for coworker external dose is
7 provided with that example.

8 Number four, hypothetical internal
9 coworker assignment for unmonitored uranium
10 worker. Again, I have to point out though
11 both three and four are hypothetical because
12 as we've discussed, the need for coworker data
13 is pretty minimal at Rocky. I can't say it's
14 zero, but it's pretty minimal so let's keep
15 that in mind.

16 Example number five is an ingestion of
17 depleted uranium. This is an issue that seems
18 to be a concern so we included a dose
19 reconstruction showing that.

20 And finally, the last one, number six,
21 is our Super-S for a monitored plutonium
22 worker, monitored meaning he had bioassay. He
23 did not have chest count. He had some
24 urinalysis results, some that were positive.
25 Just to illustrate the range of possibilities

1 we covered four target organs, so this is
2 really actually four examples in one. We
3 covered the lung, of course, the GI tract, we
4 modeled a colon for that, a systemic cancer
5 that was a liver cancer and a systemic non-
6 metabolic which we took as the prostate as an
7 example.

8 So that's what's included in there.

9 **DR. NETON:** Let me just fill in a little bit
10 on number six. Those dose reconstructions
11 were performed using the TIB-0049 document and
12 the associated approach document that we
13 discussed earlier in the day.

14 **DR. ULSH:** So that might help SC&A in
15 interpreting what we did if they refer to
16 those documents in their review.

17 **MR. GRIFFON:** And let me ask a couple of
18 questions on those types of examples we might
19 want to see, and I mean, it's up to you what
20 you want to provide, but this question, and
21 it's not, this is a hard time of day to
22 discuss this because it's not clear in my
23 mind, but I know we talked about a potential
24 for individuals to be in areas where they
25 would be exposed to mixed solubilities of

1 plutonium including S or Super-S and how that
2 was going to be handled in the dose
3 reconstruction process.

4 **DR. NETON:** Mark, this is Jim. We did one
5 of those examples in the Y-12 case, and it
6 turns out it's not that difficult an issue.
7 We just pick the one, if truly we can't tell
8 what the worker was exposed to, we pick, you
9 know, you run the scenarios through the models
10 and pick the one that gives the highest dose
11 to the individual organ.

12 **MR. GRIFFON:** So you would just, at the end
13 of the day, if Super-S was going to give the
14 highest dose, you'd always assume Super-S?

15 **DR. NETON:** Yes, if Super-S is a credible
16 exposure scenario and we couldn't tell, yes.
17 If a person was working with a tank of
18 plutonium nitrate, we might not do that, but
19 yeah, sure. So that's not that, unless I'm
20 missing something, those examples are not that
21 difficult for us to do. We could certainly do
22 it, but --

23 **MR. GRIFFON:** Yeah, no, I guess it's more of
24 understanding our explanation especially when
25 you have a lot of less than detectable values.

1 **DR. NETON:** Yeah, well, that's standard. We
2 define the half of the detection limit, assign
3 a chronic intake and pick the most claimant
4 favorable solubility --

5 **MR. GRIFFON:** Even including Super-S. I
6 mean, I thought for Y-12 we didn't have the
7 Super-S possibility.

8 **DR. NETON:** No, but Super-S is really just
9 one more choice in the dose reconstructor's
10 toolbox for plutonium, and it turns out,
11 actually, it's kind of interesting. The
12 Super-S approach did not substantially in my
13 mind, you can look at the example. I looked
14 at it briefly this morning. Does not
15 substantially alter the compensation profile
16 for the cases as we kind of expected.

17 In other words the lung dose went up
18 dramatically, the liver dose increased, both
19 of those would have likely been contestable
20 under the S scenario. And the prostate dose
21 is in the five percent range. Well, it's kind
22 of interesting how that worked out.

23 **MS. MUNN:** It was interesting.

24 **DR. ULSH:** Okay, Mark, that's my description
25 of the dose reconstructions.

1 **MR. GRIFFON:** And the only other questions I
2 have was we raised thorium this morning a
3 little more, and I understand gross alpha,
4 really I don't know if there's a need to see
5 any kind of thorium reconstruction especially
6 if you're going to assume worst case nuclide
7 if you don't know.

8 Other people have opinions on that
9 though? Arjun or John?

10 **DR. MAURO:** I don't. It sounds like that is
11 a bounding assumption.

12 **DR. MAKHIJANI:** I don't know. I'm very
13 tired.

14 **MR. GRIFFON:** And then the other thing I
15 didn't see on here was americium, but again --
16 and I don't know if this, that is sort of the
17 policy within the evaluation report, the
18 approaches that when in doubt, we'll assume
19 any of these radionuclides that will deliver
20 the highest potential dose to the organ of
21 interest? Because you've got the americium
22 separation workers theoretically that could
23 have been working solely in that americium
24 area prior to americium-specific urinalysis.

25 **DR. ULSH:** Right, that's sort of a program-

1 wide policy that we have that if we lack
2 information to pin it down specifically, and
3 there are numerous, plausible choices, we'll
4 pick the one that claimant favorable. I mean,
5 Mark, if you'd like to see an americium dose
6 reconstruction example, we can do that.

7 **MR. GRIFFON:** I don't know. I'm just noting
8 that these things aren't within the cases and
9 just exploring whether they need to be. I'm
10 not, it sounds like probably they don't need
11 to be, but I'm just --

12 **DR. ULSH:** And we took our best shot at
13 guessing what you'd want to see. If we've
14 missed any, and you'd like us to do them, we
15 can do it.

16 **DR. MAURO:** This is John. I think that the
17 way to proceed is as we work through putting
18 our report together and then drawing upon your
19 examples, if we feel that completing our
20 report, that the report would benefit from a
21 few more examples, we'll give you a call and
22 say, and explore other examples with you. But
23 right now we have plenty on our plate.

24 **MR. GRIFFON:** Well, I guess we're, in this
25 situation I know what you're saying, Brant,

1 and that's true, and I think in other
2 situations we had dealt with facilities that
3 were primarily uranium and then to just make
4 blanket assumptions that, yeah, we can, if we
5 didn't know we'd assume americium, thorium or
6 plutonium. That would very much shift the
7 dose profiles for individuals, but in this
8 situation you're dealing primarily with
9 plutonium so shifting to thorium or americium
10 is really no big deal probably.

11 **MS. MUNN:** Yeah, it's almost pointless,
12 isn't it?

13 **DR. MAKHIJANI:** I think that the actual --

14 **MR. GRIFFON:** I think that's the difference.
15 I mean for instance Mallinckrodt or Y-12, you
16 know.

17 **MS. MUNN:** Whole different ballgame.

18 **DR. MAKHIJANI:** If you have the bioassay
19 results, I think the dose conversion factors
20 are close enough. You know, they are
21 different, but what I think might be useful
22 since there's been a lot of discussion of
23 americium data is to, if you can communicate
24 some case of claimant numbers to us or show
25 us, since all of us have done our Privacy Act

1 training and signed the papers and so on, to
2 be able to actually see some of these bioassay
3 data. Do you have any positives?

4 You know, the petition deals with
5 high-fired from non-plutonium transuranics
6 radionuclides. So since americium was being
7 processed, I don't know if it was being
8 processed into oxides. It would be useful to
9 see some real data, and I haven't tried to
10 actually go and look at claimant information
11 to try to find it so it might be easier for
12 you to find.

13 **DR. ULSH:** So Arjun, are you asking for
14 claim numbers that might contain, or the
15 worker's dosimetry file might contain
16 americium-specific bioassay or gross alpha
17 bioassay? Is that what you're asking?

18 **DR. MAKHIJANI:** Yeah, and if you've already
19 done a dose, since you've done so many dose
20 reconstructions already, if you handled a case
21 like that already it might be more useful just
22 to look at that rather than setting up a
23 schematic, and also there's very little time.

24 **DR. ULSH:** Okay, we'll try to find something
25 like that.

1 **MS. MUNN:** It's simpler, I think.

2 **MR. GRIFFON:** And I think, I guess the last
3 thing we need to discuss unless there's more
4 discussion on the case is that the sort of
5 timeline or path forward. We are looking at
6 two weeks out from an Advisory Board meeting.

7 **DR. MAKHIJANI:** Less than two weeks.

8 **MR. GRIFFON:** Yeah, less than two weeks.
9 Okay, less than two weeks. And my sense,
10 well, I think we have maybe a few more loose
11 ends in this than we did in Y-12, and I'm
12 wondering just about the timeline or
13 deliverables. We have many of the same people
14 especially from SC&A's team that are going to
15 have to do a review of the petition. And I'm
16 just wondering what we can expect for the work
17 group to deliver to the Board by the time of
18 the Board meeting.

19 **DR. WADE:** Well, this is Lew, let me just
20 talk out loud. I mean, next week is our week,
21 obviously, so if we could imagine an exchange
22 of information the middle of the week,
23 Wednesday. I know when we talked yesterday,
24 we had asked John to put his shoulder to
25 trying to share the report on Y-12 by the

1 middle of the week. If we can do that to the
2 maximum degree possible, and it's possible for
3 the work group to get together by phone
4 Thursday, Friday to have one more discussion.

5 I don't know that at this point we're
6 not all so tired that we might not be able to
7 sort the issues exactly now, but it would seem
8 to me there might be benefit from as much
9 information exchange as possible, as much
10 dialogue as possible, and then one follow-up
11 opportunity. You know, three or four hours to
12 try deal with remaining issues.

13 **MS. MUNN:** Well, the e-mail inquiry today
14 was asking whether we were available on the
15 20th.

16 **DR. WADE:** What day was, I don't have a
17 calendar in front of me.

18 **MS. MUNN:** That's Thursday.

19 **MR. GRIFFON:** Thursday.

20 **DR. WADE:** I think there were some people
21 who were suggesting Thursday was better for
22 them.

23 **MS. MUNN:** Yeah, and there's an inquiry out
24 asking are we available on Thursday.

25 **MR. GRIFFON:** I'm also thinking about we

1 have I think more significant pieces,
2 especially I'm thinking about the data
3 reliability question. You know, we've asked
4 John, SC&A, to deliver a product to us about a
5 path forward on some of these specific
6 allegations about no data available, et
7 cetera, you know, that general category. And
8 I would expect that if we're lucky, they might
9 be able to complete that by the end of the
10 week. I don't know that we really can expect
11 a full review of this report and Y-12 by the
12 middle of next week by SC&A. I think, I'm not
13 sure that we're ready to push this forward in
14 the full Board meeting. That's my opinion
15 anyway. Push this forward to a vote in a full
16 Board meeting, I think we also have the
17 outstanding question of the database data
18 versus the raw data especially for the
19 internal or the bioassay side of the equation.
20 Brant says that they're in the middle of
21 working on that.

22 **DR. WADE:** Well, this is Lew again. Let me
23 just sort of talk through generically the
24 issues, and I don't take any exception to what
25 you've said. I would imagine that by the end

1 of next week based upon whatever information
2 has been shared and made available NIOSH will
3 have to make the decision as to whether or not
4 it wants to present the evaluation report
5 formally to the Board.

6 I assume NIOSH, and I'll depend upon
7 their integrity, if they feel that they have a
8 case to make, they'll make the case. The
9 Board then, assuming NIOSH presents, then the
10 Board has its option as to whether to act on
11 that positively, negatively or the rule does
12 allow for the Board to ask for additional
13 information upon which to make its decision.
14 So I think that's a path we're likely to take
15 forward. The working group could strongly
16 recommend to the Board that these things be
17 pursued. It could only be at full Board
18 meeting that we could make that decision.

19 **MR. GRIFFON:** Correct.

20 **DR. WADE:** So I think, you know, what I
21 would like to see happen is we work as hard as
22 we can through the week. NIOSH will have to
23 make a decision as to whether or not it wants
24 to go forward and make a presentation.
25 Assuming it does, then the Board will have to

1 deliberate and hear from the working group and
2 then make its decision. If NIOSH decides to
3 not present, then it becomes a moot point save
4 for the decision as to how to go forward to
5 fill the gaps that NIOSH would bring. So I
6 think that's --

7 **MR. GRIFFON:** That sounds reasonable.

8 **DR. WADE:** So I think that's likely what
9 will happen. The question is what do we want
10 to do in the time available? We could put our
11 efforts to Y-12 or we could try and do as much
12 as we could on Y-12 and also do some things on
13 Rocky. That's a decision for the working
14 group to take now.

15 **MS. MUNN:** My personal feeling is that we're
16 totally committed to Y-12.

17 **MR. GRIFFON:** That's my sense, too. I would
18 like to see one complete rather than two not
19 quite complete. So I would say from a
20 priority standpoint anyway, I think we should
21 try to hone in on Y-12 and then it doesn't
22 mean that we completely stop these actions
23 that we've outlined for Rocky, but the
24 priority would be to complete the review of Y-
25 12. If we're trying to set priorities,

1 especially for SC&A.

2 Wanda, I'm sorry.

3 **MS. MUNN:** That was my statement.

4 **MR. GIBSON:** This is Mike. I feel the same
5 way, but on one hand though it's like we're
6 hitting these towns for these meetings --

7 **MR. GRIFFON:** I know.

8 **MR. GIBSON:** -- behind the eight ball, and
9 so that's just another perspective look at, I
10 agree with, you know, there's just of work we
11 have to do, and we need to close these issues,
12 but I keep going to these towns to towns and
13 not have something done.

14 **MR. GRIFFON:** No, I agree, and I think we,
15 if nothing else, we need a thorough status
16 report in Denver. And the other thing I would
17 say is that John, you know, SC&A should
18 definitely try to complete crisp or mini
19 report on that one issue that we've talked
20 about in the very near future.

21 And that NIOSH should pursue the
22 internal bioassay reliability question so that
23 we can show at least progress on the matrix
24 and outstanding actions definitely. But, and
25 I'm not saying maybe we will have time to wrap

1 up both, but I would say let's prioritize Y-12
2 because my feeling is I think we're closer to
3 completion on that.

4 **MS. MUNN:** I hope that's true. It's
5 unfortunate from my point of view that we have
6 so many of the same people working on both
7 sites.

8 My feeling is that we actually are
9 much further along here on Rocky than it looks
10 like we are right now. I'm really sorry that
11 we don't have access to those, to the data
12 that Kathy has tried to get her hands on
13 earlier. That would be very helpful, but --

14 **MR. GRIFFON:** Yeah, I guess the biggest
15 thing, as John stated earlier, probably the
16 biggest item is the data reliability, and I
17 think that's one item that's definitely high
18 on the petitioners' mind. So I think we'd be
19 remiss if we didn't at least try to go a
20 little farther with that.

21 **MS. MUNN:** I agree.

22 **MR. GRIFFON:** I don't want to not appear in
23 Denver and try to close this out without at
24 least taking that a little father.

25 **MR. FITZGERALD:** Yeah, Mark, this is Joe. I

1 just wanted to clarify because this is pretty
2 important schedule wise, clearly by the middle
3 of next week as we said yesterday, the Y-12
4 review of the review by SC&A should certainly
5 be available and ready for discussion.

6 Perhaps at the same time --

7 **MR. GRIFFON:** Review of the evaluation
8 report, right?

9 **MR. FITZGERALD:** Right. And certainly by
10 then, if not before then, to have this hand-
11 off review if you want to call it that, the
12 passing of the torch, the mini-review with
13 very clear, sharp, proposed things that could
14 be done, have that ready for the data
15 integrity issues certainly early next week no
16 later. That's what I'm kind of hearing. Not
17 the whole thing in terms of Rocky, certainly
18 that piece.

19 **MR. GRIFFON:** I think that seems, as
20 priorities that seems like what I'm, that's my
21 feeling anyway.

22 **DR. WADE:** Then I would propose that the
23 working group have a call on Thursday and
24 attempts to close its business on Y-12, and
25 then possibly take a small amount of time just

1 to assess the situation with regard to Rocky.
2 And then the working group can decide if it
3 wants to meet before the Board meeting in
4 Denver or whether or not the call on Thursday
5 would be their preliminary discussion of what
6 they'd present to the Board.

7 **MR. GRIFFON:** And we can figure that out on
8 Thursday I guess.

9 **DR. WADE:** What time? Let's just while
10 we're all here, what time, ten a.m.?

11 **MS. MUNN:** That'll be fine with me. My
12 response was I'm available anytime preferably
13 after eight my time, but I can do ten.

14 **DR. WADE:** You want to try, let's do 11.

15 **MR. GRIFFON:** No, earlier would be better
16 for me, so I'll compromise on ten.

17 **DR. WADE:** Okay, ten.

18 Let me just, quick roll call, Mark,
19 that's okay with you?

20 **MR. GRIFFON:** Yeah.

21 **DR. WADE:** Mike, ten a.m.?

22 **MR. GIBSON:** Yeah, that'll be okay.

23 **DR. WADE:** Robert?

24 **MR. PRESLEY:** I will not be available
25 Thursday.

1 **DR. WADE:** Well, since we're going to be
2 doing mostly Y-12, with your permission, we'll
3 go ahead and meet.

4 **MR. PRESLEY:** You're going to have to.

5 **DR. WADE:** Okay, thank you.

6 So ten a.m. eastern time next
7 Thursday. I'll make the arrangements with the
8 call-in number. And I really pushed today so
9 I could get things posted on the website and
10 let people know so thank you. I'll stop
11 talking, and you guys can conclude your
12 business.

13 **MR. GRIFFON:** I think we're concluded if
14 any, unless anyone else has any comments, I
15 think that should wrap it up.

16 **DR. MAURO:** This is John. I just want to
17 make sure that I understand. We have two
18 deliverables to have in your hands prior to
19 that conference call on the 20th. That is
20 SC&A's full evaluation, review of the
21 evaluation report for Y-12 and the other, I
22 guess, crisp report that we'll try to get to
23 you before then.

24 **MR. GRIFFON:** Yes.

25 **DR. MAURO:** We won't have in your hands

1 anything related to the technical issues
2 associated with Rocky. In other words, we
3 won't, even though we are right now in a
4 position where we can probably put material
5 together related to the three major technical
6 issues that were raised on Rocky, mainly,
7 high-fired plutonium, chest counts and neutron
8 dosimetry, though the information is there.

9 We have the information in our hands.
10 We have the wherewithal to address those.
11 It's just really a matter of that would dilute
12 our ability to go and deliver a complete
13 product for Y-12. That's basically how I see
14 it right now.

15 **MR. GRIFFON:** I agree, John, yeah.

16 **DR. MAURO:** And assume that we have time, of
17 course, we'll move forward to work on those
18 issues if we get the first two priorities
19 finished by then.

20 **DR. WADE:** Yeah, I would, again, this Lew
21 speaking, the technical project officer. If
22 you can do it without diluting the effort, I
23 think the process is best served, even if it's
24 for the Board to be able to consider most
25 fully its decision which could well be to

1 delay. I think the process is served with
2 complete work if it's doable.

3 **MR. GRIFFON:** Right, we agree. If you've
4 got time on your hands, John, then go ahead
5 and give us the whole kit and caboodle.

6 **MS. MUNN:** Squeeze time out of your hands.

7 **DR. MAKHIJANI:** Mark and John, I think I
8 hope complete doesn't mean long.

9 **MR. GRIFFON:** I hope it doesn't, too. We're
10 all in agreement there.

11 **DR. MAURO:** Yes, if we could keep it brief,
12 yes.

13 **DR. MAKHIJANI:** I was thinking sort of like
14 a letter report.

15 **MR. GRIFFON:** Yeah, we've got a lot of
16 documents out there already so to the extent
17 you need to cross, you know, refer to other
18 documents that already exist, don't be
19 redundant.

20 **DR. MAKHIJANI:** One other question is in
21 regard to the sample dose reconstructions on
22 Y-12. I mean, in the essentials if they
23 illustrate things that don't need, I think at
24 this stage to try to reproduce a calculations
25 and so on that doesn't seem to me the

1 priorities, the principles that have been
2 discussed in those things as they might apply
3 to what the Board has to consider might go
4 into a short report because otherwise it'll
5 get pretty out of hand, and we might get
6 buried in the weeds in the details if you
7 expect that. So I just want a little
8 clarification.

9 **MR. GRIFFON:** No, I guess, the way I
10 consider those is we're looking for proof of
11 principle.

12 **DR. MAURO:** Right.

13 **MR. GRIFFON:** So that's the way we expect
14 you to review them as well.

15 **DR. MAKHIJANI:** Okay, so we won't try to
16 reproduce the numbers.

17 **MR. GRIFFON:** That's not my expectation.
18 Wanda or Mike?

19 **MS. MUNN:** It's certainly not mine, no. The
20 more concise the better.

21 **DR. MAKHIJANI:** Mike?

22 **MR. GIBSON:** Right.

23 **DR. MAKHIJANI:** Would that be all right?

24 **MR. GIBSON:** Yes.

25 **DR. WADE:** Thank you all for just a

1 Herculean effort today, and certainly the
2 effort is appreciated and we'll be back
3 together at ten a.m. eastern time Thursday
4 next.

5 **MR. GRIFFON:** And Ray will have those
6 transcripts for us before then, right? That's
7 another action item which was addressed.

8 No, I'm kidding a little bit, but all
9 kidding aside I think we did state earlier if
10 these transcripts could be ready, you know. I
11 think these will be very important, especially
12 prior to the Board meeting.

13 **DR. MAURO:** And especially the Y-12 portion.

14 **MR. GRIFFON:** Yeah. Since we're
15 prioritizing that, yeah.

16 **DR. WADE:** We've heard you.

17 **MR. GRIFFON:** John, do you want a conference
18 call? We were all on for the record
19 yesterday, we were just on mute.

20 **DR. MAURO:** Yesterday I called a conference
21 call and everyone else was on mute so we
22 didn't hear, no one reacted.

23 **DR. MAKHIJANI:** I'm here today so we can
24 talk.

25 **MR. GRIFFON:** Good work today, everyone.

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It's been a long day on the phone. Thanks a lot.

(Whereupon, the working group teleconference concluded at 5:50 p.m.)

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

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of April 12, 2006; and it is a true and accurate transcript of the testimony captioned herein.

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

WITNESS my hand and official seal this the 14th day of July, 2006.

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