

1 -- and ignored the other fission products that
2 can be measured and some which can't be
3 measured, and the assumption's always been that
4 this is like taking a bioassay data where you
5 have gross alpha or gross beta and assuming
6 that 100 percent of the beta is -- is
7 contributed by the limiting radioisotope.
8 That's not the equivalent here. You know, when
9 you, for instance, say we have a urine sample
10 that has been analyzed and we did a gross beta
11 and we realized that for this particular cancer
12 the limiting radionuclide that could have
13 contributed to the gross beta count was such-
14 and-such -- let's say it's iodine and the
15 cancer's thyroid -- I buy into that. That's
16 clearly claimant favorable when you don't have
17 a definitive understanding of the radioisotopic
18 mix in a gross beta count or gross alpha count
19 in a urine sample. But it is not something
20 that you can apply that -- that -- that logic
21 to a whole body count where you can clearly
22 identify five, six different fission products
23 and then select cerium saying that is the
24 limiting radionuclide. Of course it's the
25 limiting radionuclide, but you're still

1 ignoring the others. And it's strictly a
2 technical issue and I want to emphasize that
3 I'm not concerned about doses. I realize that
4 even at MDA levels for cesium and iodine and
5 others that the doses are relatively modest and
6 -- and almost inconsequential and was more or
7 less a technical issue and that's the only
8 reason I brought it up.

9 **MR. ALLEN:** Yeah, I -- I realize what you're
10 saying, Hans, and I didn't try to -- I don't
11 know if I said it or I certainly didn't try to
12 imply that this was something like a gross beta
13 or gross gamma. All I was saying was this was
14 the approach we came up with to -- to account
15 for all these.

16 **DR. BEHLING:** And -- and -- and I'm not even
17 sure it's worth having these major committee
18 studies on a conference (unintelligible)
19 because I'm not sure it's -- it's really worth
20 the -- the investment in human time and effort
21 to do something that is -- that is going to
22 obviously consume a lot of work hours on the
23 part of a lot of people because at -- at MDA
24 levels, these -- these internal emitters are
25 probably not going to contribute significantly.

1 **MR. ALLEN:** Don't say that too loud. I got two
2 people at the table that put a lot of time into
3 this already.

4 **DR. BEHLING:** I'm sorry to put you through it,
5 David.

6 **MR. HINNEFELD:** It'll -- it'll have -- it'll
7 have to be resolved in the -- in the Hanford
8 workgroup anyway. I mean the -- the issue of -
9 - of -- well, it has to be addressed in some
10 form, so you know, once -- once the resolution
11 is out there, you know, it'll be available to
12 this -- this subcommittee (unintelligible) --

13 **MS. BEHLING:** Can I interject one -- one thing
14 here? This is Kathy. I -- I think that
15 everything that you described, David, it sounds
16 like an appropriate approach to -- in fact, it
17 may be going overboard on -- although I won't
18 necessarily say that because you're certainly
19 going at this particular problem the correct
20 way and I think we agree with the fact that you
21 are -- you are looking at this and you're going
22 to consider all of the fission products.

23 And this is a little bit contrary to what Hans
24 just said. Now let me ask if I understand this
25 correctly. I assume that since this will

1 become a complex-wide issue, this will be
2 something that ultimately would possibly have a
3 PER associated with it.

4 **MR. HINNEFELD:** Depending upon the outcome of
5 the new approach, it may or may not. If -- if
6 -- if, based on the work that's going on now,
7 we determine that the technique used previously
8 resulted in lower doses than the new technique,
9 then it would give rise to a PER.

10 **MS. BEHLING:** Okay. Okay, very good.

11 **MR. GRIFFON:** So the -- the follow-up is in the
12 Hanford workgroup, I guess, or -- or complex-
13 wide? You know, it's a complex-wide issue.

14 **MR. ALLEN:** That's my suggestion, however you
15 guys want to --

16 **MR. HINNEFELD:** The written material will
17 certainly start with the TIB that Dave
18 described. That'll --

19 **MR. GRIFFON:** Right.

20 **MR. HINNEFELD:** -- be the starting of it --

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

22 **MR. HINNEFELD:** -- and then -- you know,
23 whether or not additional explanation needs to
24 go with it to indicate why, you know, this
25 approach either was okay or was not, that there

1 may be some additional explanation because the
2 TIB is -- is doing it for a particular purpose
3 and the resolution of this finding may require
4 a little more explanation included with --
5 along with the TIB.

6 **MR. GRIFFON:** Okay.

7 **DR. MAURO:** Other -- this goes toward then one
8 of the items that we would call putting in the
9 parking lot. Remember, one of the things we
10 said, we were going to create a separate matrix
11 that keeps track of everything we decided to
12 put on -- on ice, and this is one of them.

13 **MS. MUNN:** That's great.

14 **MR. GRIFFON:** We have a big parking lot here.
15 (Whereupon, multiple participants spoke
16 simultaneously, rendering transcription of
17 individual comments impossible.)

18 **MR. GRIFFON:** Yeah, I know, I know.

19 **MR. ALLEN:** Well, I mean that was just my
20 suggestion. The Board figures out whatever
21 they want to do, but I mean knowing it's being
22 addressed in another -- at least one other
23 working group, if not others, it just seems
24 like it's one issue that -- you know, we should
25 either point to that working group or pull it

1 out of both and put it in an overarching or
2 whatever the Board wants to do, I just would
3 like to keep it all consistent across the
4 complex.

5 **MS. MUNN:** It certainly would ultimately I
6 think save everybody a great deal of time if we
7 agreed exactly where these kinds of things --

8 **MR. GRIFFON:** Are we --

9 **MS. MUNN:** -- were going to go and how they
10 were going to be dealt with.

11 **MR. GRIFFON:** Are we going to have enough to
12 make a judgment on how the -- how it might
13 affect the dose in this case, the dose -- I'm
14 say-- you know.

15 **MR. ALLEN:** This particular --

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

17 **MR. ALLEN:** Well, I think this particular case
18 is already in the -- I think Stu mentioned it's
19 in the PER process for I think --

20 **MR. GRIFFON:** Other things --

21 **MR. ALLEN:** -- at least two different issues,
22 honestly.

23 **MR. HINNEFELD:** (Unintelligible)

24 **MR. ALLEN:** And -- I mean if it were to --

25 (unintelligible) is going to kill me here -- I

1 mean if -- if that PER process determines that
2 this case is -- should be reworked, you know,
3 we ask DOL for a rework and we think it's
4 changed in compensability based on these other
5 issues, it -- this particular issue kind of
6 becomes a moot point at that -- at that point.
7 I'm not sure what else to -- I'm not sure --
8 sure what you're asking on that, but --

9 **MR. GRIFFON:** Well, I'm trying to -- to walk
10 that line, but I --

11 **MR. ALLEN:** And like Stu said, if it turns out
12 that --

13 **MR. GRIFFON:** Yeah, I guess the -- I -- I -- I
14 understand we're talking about small doses, but
15 I also -- I don't have the numbers in front of
16 me, but I remember this being one of the close
17 cases, so you know, even the small changes
18 could -- could affect, you know.

19 **MR. ALLEN:** Well, like Stu said, our standard
20 appro-- we -- for the PER process we have to
21 make the change first --

22 **MR. GRIFFON:** Okay.

23 **MR. ALLEN:** -- to know how we're going to deal
24 with it, and then we evaluate what that had on
25 previously completed cases, so --

1 **MR. GRIFFON:** We'll go forward this way, we'll
2 --

3 **MR. ALLEN:** -- the first step is to solve the
4 issues --

5 **MR. GRIFFON:** Yeah, we get your written
6 analysis and understand that this is one of
7 those global things that's going to be followed
8 up in the TIB and the Hanford workgroup.
9 That's the notes I have. Okay.

10 All right. Next one, Stu?

11 **MR. HINNEFELD:** Okay --

12 **MR. GRIFFON:** Moving right along.

13 **MR. HINNEFELD:** Yeah, 67 --

14 **MR. GRIFFON:** We always start slow in this
15 workgroup (sic) and then speed up toward the
16 end -- when we look at our flight arrangements.

17 **MR. HINNEFELD:** After we get tired and -- yeah,
18 67 -- 67.9 is the next finding that I think
19 written material -- and this is fairly
20 straightforward. The comment was that type M
21 was not necessarily claimant favorable, that
22 type S would be more claimant favorable. I
23 think our initial response was well, type M fit
24 the bioassay data and while I think maybe the
25 dose reconstruction said claimant favorable or

1 chose the claimant favorable dose
2 reconstruction, I don't think -- I don't
3 remember if it said that or not. The fact of
4 the matter was that the selection of the
5 solubility type was based on the bioassay data
6 available, and the note I made was that we
7 would develop, you know, the IMBA analysis that
8 would demonstrate type M fits the data versus
9 how type S would not. So that's -- that's the
10 response on that case. That's fairly
11 straightforward.

12 **MR. GRIFFON:** That's good. And again, we don't
13 need to discuss these. We're getting -- the
14 action's correct, that's all we want to do
15 here.

16 **MR. HINNEFELD:** 67.11 addresses the uranium --
17 addresses the --

18 **MR. GRIFFON:** Stu, I'm sorry, before you move
19 on to that one, you did send a zip file with
20 some IMBA analysis in it.

21 **MR. HINNEFELD:** That was a different finding.

22 **MR. GRIFFON:** Does it include that one?

23 **MR. HINNEFELD:** It was a different finding.

24 **MR. GRIFFON:** (Unintelligible)

25 **MR. HINNEFELD:** That was -- that was a one

1 finding that occurs later on.

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

3 **MR. HINNEFELD:** 67.11 has to do with the
4 selection of the acute intake uranium date.
5 And again, we can put together an IMBA analysis
6 to demonstrate that the -- that the intake date
7 that were reflected are consistent with the
8 bioassay data. And the default date, which is
9 like mid-point between sampling periods,
10 doesn't fit as well as the date selected. So
11 you know, that kind of analysis would
12 illustrate -- because the procedure -- you
13 know, the procedure says that the default
14 intake date is midway between sampling points,
15 but it also -- there's wording in the procedure
16 that allows bioassay data to be used to differ
17 from the defaults, whether it be in solubility,
18 intake date or whatever. So based -- you know,
19 so we felt like we complied with that wording
20 in the procedure by choosing an intake that fit
21 the -- that fit the bioassay -- or intake dates
22 that fit the bioassay for the case.

23 **DR. MAURO:** So you're saying that in this case
24 you actually have multiple bioassays that you
25 would fit the data to --

1 **MR. HINNEFELD:** Yes.

2 **DR. MAURO:** -- and you could back-calculate
3 (unintelligible) three points typically is
4 (unintelligible).

5 **MR. GRIFFON:** It would be -- this -- this
6 demonstrates my point from my last agenda item
7 'cause -- 'cause, you know, looking at these in
8 retrospect after seeing some of these DR
9 guidelines, and this is where it would have
10 been -- and I think it still would be very
11 beneficial for the workgroup (sic) and SC&A to
12 have the DR guide that the dose reconstructor
13 used at the time they were doing the case
14 included in the case file 'cause then -- you
15 know, a lot of this decision tree logic is in
16 there, that they -- you know, if you have this
17 type of case, you -- you know, I mean instead
18 of after the fact kind of guessing what the
19 dose reconstructor did, we'd have more of a
20 black line, like this is what they were
21 supposed to do, you know, did they comply with
22 it, did they not. So there's that quality
23 control review aspect that we would get that
24 way and I think we're -- we're kind of missing
25 that, but we'll take up those DR guides later,

1 but I just wanted to -- this -- this sort of
2 raises that question because you're saying that
3 the dose reconstructor had the latitude not to
4 use that -- that mid-point, you know, if they
5 had data to fit. And I think that -- that --
6 in the guides, it probably showed that, that --
7 you know.

8 **MR. HINNEFELD:** Well, the procedure -- internal
9 dosimetry procedure says that.

10 **MR. GRIFFON:** Says that, too? Okay.

11 **DR. BEHLING:** Stu, can I make a comment here?
12 I think you're -- this is one of the more
13 critical elements for our concerns here for
14 case 67, and that was the -- the selection of
15 exposure dates or intake dates relative to the
16 bioassay. And I looked at those data very,
17 very carefully and they were consistently
18 assigning an intake date that was one or two
19 days prior to the bioassay when in fact I
20 looked at the original records and they were
21 all routine. I will accept the -- the
22 assumption that the intake may have preceded
23 the bioassay date by 24 hours, 48 hours, if I
24 were to see something such as this was a
25 special bioassay that was prompted by an event

1 that was clearly the signal that says this is
2 more than likely a -- a urine excretion value
3 that reflects the recent intake. But those are
4 not the cases here and -- and there was no --
5 no justification for always using a very short
6 time interval between intake and the excretion
7 values found in the bioassay. And I have to
8 say, it concerned me that we were not being
9 fair here and following basic procedures that
10 says in the absence of -- of -- of compelling
11 information to state otherwise, the mid-point
12 between the most recent bioassay and the date
13 of that bioassay should be the date of intake
14 if you're going to assume it was a -- an acute
15 intake.

16 **MR. HINNEFELD:** Well, I guess we would --

17 **MR. GRIFFON:** I think Liz wants to say
18 something, but keep in mind, we -- we said we
19 weren't going to have the technical
20 discussions. They are going to provide the
21 IMBA analysis to back up their position that
22 this fits the data --

23 **DR. BEHLING:** Yeah, and I -- I agree, Mark. I
24 think maybe this goes beyond and it's going to
25 short-change our time --

1 **MR. GRIFFON:** Right.

2 **DR. BEHLING:** -- for the fifth set, so maybe we
3 should just try to minimize the discussion.

4 **MR. GRIFFON:** Did you -- I know Liz -- maybe
5 Liz has one comment --

6 (Whereupon, multiple participants spoke
7 simultaneously, rendering transcription of
8 individual comments impossible.)

9 **MS. BRACKETT:** I have -- I have two comments.
10 First --

11 **MR. GRIFFON:** She's come all the way from
12 Connecticut, we've got to get her on the
13 record.

14 **MS. BRACKETT:** First, I -- I -- first, I do
15 agree with you. I constantly lecture people
16 and I think I was ranting to Dave about this
17 yesterday, that I -- I try to make the dose
18 reconstructors understand that it's not
19 appropriate to assign every intake the day
20 before a -- a positive result.

21 On the other hand, there -- it's not
22 necessarily -- well, compelling evidence can
23 also be looking at the other bioassay results.
24 It sometimes simply is -- it's just very
25 difficult to fit the results. If you used a

1 mid-point, you may fit that one following
2 result, but then you're going to over-predict
3 the later result, so you -- you have to -- you
4 have to balance it somehow. And -- and like I
5 said, while I agree that it's -- it's extremely
6 unlikely that a person -- that they happen to
7 sample a person routinely every -- every time
8 they just happen to have an intake. That's
9 very unlikely. But it -- there's still -- some
10 alternative method of fitting needs to be done
11 in order to make sure that you're in agreement
12 with all of the data.

13 **MR. GRIFFON:** All right, and we'll -- and we'll
14 get the file so we can examine it further when
15 we get it.

16 **MS. BEHLING:** Mark, can I just inter--

17 **MR. GRIFFON:** Go ahead, Kathy.

18 **MS. BEHLING:** Just quickly, I'm sorry to
19 prolong this but as well -- it's on my mind.
20 Is there a protocol or something in writing,
21 some procedure or guidelines for the dose
22 reconstructor with regard to this fitting
23 procedure that you use for the internal,
24 because you're absolutely right, it is -- it is
25 very difficult, and I play with IMBA, too, and

1 -- and make adjustments. But do you have
2 guidance that we could look at that gives some
3 instructions to the dose reconstructor,
4 realizing that there's going to be a -- many
5 different -- they're going to see a lot of
6 different bioassays and a lot of different
7 scenarios, but is there any guidance out there,
8 written guidance?

9 **MS. BRACKETT:** The internal dosimetry
10 procedure, which is Procedure 60, touches on it
11 briefly. It's not detailed. It gives some
12 guidelines on things to try, but for the most
13 part -- you know, I --

14 **MR. GRIFFON:** But there is an SRS-specific
15 guidance document, I think, for internal dose.

16 **MS. BRACKETT:** That's -- that's true, and I
17 don't know --

18 **MR. GRIFFON:** Guidance, I guess -- yeah.

19 **MS. BRACKETT:** -- if that actually -- I don't
20 know if that discusses fitting the data --

21 **MR. GRIFFON:** I'm not sure.

22 **MS. BRACKETT:** -- in detail.

23 **MS. BEHLING:** I -- I could not find anything
24 that gives any definitive guidelines for
25 fitting that data.

1 **MS. BRACKETT:** But that -- that's because it's
2 difficult to give definitive guidelines on --
3 I've --

4 **DR. BEHLING:** Yes, it's very difficult
5 (unintelligible).

6 **MS. BRACKETT:** -- it's -- I've --

7 **MS. BEHLING:** I understand.

8 **MS. BRACKETT:** I've tried -- I've given
9 training to some -- to the dose reconstructors.
10 I go and, you know, try to give them examples
11 and say, you know, well, you need to try this
12 and you need to try that. But really it's --
13 if -- when you have positive results, it's
14 really -- you just kind of have to play with
15 the data until you get something that makes
16 sense.

17 **MS. BEHLING:** Okay. And if I can just add one
18 more thing, to go back to Mark's comment about
19 the DR notes, I believe in fact in future cases
20 where we're seeing more of the best estimates
21 and we're seeing very complex facilities like
22 Rocky Flats and Y-12 where we keep introducing
23 more and more OTIBs in order to -- for the dose
24 reconstructors to complete these dose
25 reconstructions, I think it is going to be even

1 more important that we see these notes or these
2 guidance -- the guidance that the dose
3 reconstructors are using, along with the cases.
4 And I believe it would resolve a lot of
5 questions that we have as we're auditing. This
6 is -- in fact, one of our first concerns is the
7 dose reconstruction report sometimes doesn't
8 give us enough detail, doesn't always reference
9 everything that was used, and we struggle
10 auditing. So having those DR notes included in
11 the case files I think would be very helpful
12 and it would -- and especially for future cases
13 that are getting more complex. That's it.

14 **MR. GRIFFON:** We'll move on to the next one.

15 **MR. HINNEFELD:** (Unintelligible) we'll move on
16 to case number 68, which is also Savannah
17 River; 68.2 talked about angular dependence of
18 the dosimeter and really it goes -- I think it
19 goes beyond angular dependence into the various
20 uncertain factors at the -- considered on the
21 dosimeter reading. It goes beyond the
22 laboratory uncertainty of actually reading the
23 dosimeter. And if I'm not mistaken, this is on
24 the overarching technical issues, as well. I
25 mean if we -- we've dealt with it at a couple

1 of individual sites with geometric adjustments.
2 I know Mallinckrodt (unintelligible) this done.
3 But I think Jim told me that this is sort of an
4 overarching issue of dealing with that, that
5 particular issue. I think one thing to keep in
6 mind when we talk about -- about dosimeter
7 uncertainty and -- and how it's accounted for
8 is that the uncertainty becomes a factor in our
9 program at the annual level, because you have a
10 line on the IREP input sheet which is annual
11 dose of a particular time and -- and
12 uncertainty associated with that, in -- in many
13 cases. And so that's where it becomes
14 important. And so the important thing to
15 under-- you know, to get right is have we
16 bracketed or correctly specified the
17 uncertainty in the annual dose measurement
18 rather than any specific dosimeter reading
19 measurement, because the uncertainty -- or the
20 relative uncertainty will converge as you
21 combine say 12 -- 12 (unintelligible) --
22 **DR. MAURO:** But not if you're systematically
23 using a generic approach which is -- for
24 example, assumes direct as opposed to angular
25 exposure. In other words, imbedded in the

1 process is the assumption that the exposures
2 that the person's experiencing is always
3 perpendicular to where the badge is facing.
4 That is sort of a consistent way in which you
5 interpret the rad or the Roentgen exposure on
6 your film badge or -- or TLD. Then there's --
7 there's a systematic bias that will
8 (unintelligible) --

9 **MR. HINNEFELD:** Rather -- rather than
10 (unintelligible).

11 **DR. MAURO:** -- (unintelligible) so -- so the
12 uncertain distribution in that respect will --
13 won't properly capture that (unintelligible)
14 one side.

15 **MR. HINNEFELD:** But like I said, if we just
16 need -- and I think it's on the overarching
17 issues list, you know, the approach or --

18 **DR. MAURO:** Right, I got it.

19 **MR. HINNEFELD:** -- whatever the basis is for
20 that -- for uncertainty approaches as
21 (unintelligible).

22 Okay, 68.3 speaks to the use of -- the finding
23 was that isotropic geometry was used in -- for
24 ambient exposures as opposed to the AP geometry
25 DCFs. And our understanding of the issue with,

1 you know, using AP was that it relates to a
2 measured -- essentially a dosimeter measured
3 dose. That's what the AP -- that's what
4 (unintelligible) when you say AP.

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

6 **MR. HINNEFELD:** When an ambient dose is -- is
7 generated, either by instrument reading or by a
8 dosimeter hung on a post and it is exposed,
9 it's actually exposed in an isotropic geometry
10 --

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

12 **MR. HINNEFELD:** -- that the isotro-- isotropic
13 DCF would be appropriate in that circumstance,
14 so that's essentially -- I mean we can lay out
15 more -- you know, more in writing on that, but
16 that's kind of where we're coming from on that.
17 And we feel like isotropic is probably
18 appropriate for an ambient dose.

19 **DR. MAURO:** I'm going to agree with that. I
20 know, Hans, that this is some of your -- but I
21 think --

22 **DR. BEHLING:** Yeah, let -- let me comment.
23 Isotropic geometry is -- is clearly the
24 appropriate choice. However, the DCF is -- may
25 still be wrong and -- and again, I want to

1 preface everything by saying that we're talking
2 trivial doses when we talk about on-site
3 ambient. On the other hand, the TLD that is
4 hung on a telephone post is basically
5 equivalent of a human body and -- and I
6 remember my days in the utilities where we
7 would always identify locations. We would hang
8 it on the side of a building, so again, the
9 exposure is not necessary (sic) isotropic when
10 you hang it on the face of a brick building or
11 a thick telephone pole that approximates a
12 human body. But again, this is relatively
13 trivial. It was brought up as a technical
14 issue as opposed to one that would have a
15 significant impact on -- on -- on individual
16 dose reconstruction.

17 **MR. HINNEFELD:** I guess my experience with
18 environmental dosimeters is they were hung on a
19 -- they were -- they were stuck on a post, but
20 there was a steel post that held a housing,
21 essentially an air equivalent housing that --
22 that the TLD was in, so that -- that, in my --
23 so it was essentially an isotropic exposure.

24 **DR. MAURO:** Well, I -- that's the point. I
25 mean in -- in essence, if that's the case, then

1 the problem's solved, but if (unintelligible).

2 **MR. HINNEFELD:** (Unintelligible)

3 **DR. POSTON:** I'm trying to stay away from a
4 technical discussion here, Hans, but I didn't
5 understand what you said. You said that you
6 accepted the isotropic assumption, but the DCF
7 was wrong. How do you -- how can you make that
8 statement? What's your basis for such a
9 comment?

10 **DR. BEHLING:** Well, as -- as we said, the --
11 the whole DCF development was based on, as a
12 starting point, as a dosimeter that is reading
13 an air dose in -- in -- in free space, and --
14 and that's really not the case when -- when you
15 have a person wearing a dosimeter, and that was
16 the whole issue that led us to conclude that
17 the AP geometry DCFs were the only ones that
18 were correct.

19 Now I will go back and say that when we talk
20 about a -- an on-site ambient dose that is
21 driven by contamination on the ground, that the
22 isotropic geometry is the correct geometry.
23 The question is, is the DCF correct, and -- and
24 as I said, this is so trivial so as not to
25 warrant really any extensive discussion because

1 it's not going to amount to anything but it's
2 strictly a technical issue, in my mind.

3 **DR. POSTON:** Okay, well, that is
4 (unintelligible) --

5 **DR. BEHLING:** And -- and when you have a -- an
6 environmental TLD, and -- and I recall from my
7 -- my days being in that environment, we would
8 frequently hang it on -- on the side of a
9 building or a telephone post or a tank or
10 someplace out in the environment, on-site, off-
11 site, and -- and that's how we would measure
12 potential off-site releases and their -- their
13 dose rates. So technically speaking, I -- I'd
14 say the issue is -- is one that -- that's -- is
15 incorrect, but it's so trivial as to really
16 require no -- no adjustment.

17 **DR. POSTON:** Well, that leads -- I'm sorry to
18 argue -- be argumentative, but that leads me to
19 two conclusions. One is, we're talking about
20 Savannah River; we're not talking about your
21 experience. So what's the -- have you looked
22 to see what the situation was at Savannah
23 River? And two, if it's so trivial, why even
24 raise the point? I don't understand. I don't
25 consider it a -- a huge technical problem. We

1 know that -- how to interpret the dosimeter
2 badges that people wear. We've been doing this
3 for 50 years, and so I -- I don't understand
4 what's going on here.

5 **DR. BEHLING:** I -- I -- again, we weren't
6 looking to belabor this issue at this point in
7 time and --

8 **DR. POSTON:** (Unintelligible) I won't belabor
9 (unintelligible).

10 **DR. BEHLING:** -- and I'm willing to sort of say
11 just scratch it off and -- and not -- not glom
12 on it any further.

13 **DR. POSTON:** That works for me.

14 **MR. GRIFFON:** It's been brought up before many
15 times, yes, and --

16 **MS. MUNN:** Accepted, okay. Right?

17 **MR. HINNEFELD:** Okay, the next -- now I have
18 down here that we're going to provide something
19 in writing about (unintelligible). Do you want
20 us to go ahead and do that, Mark?

21 **MR. GRIFFON:** Yeah, I -- I think so, but it's --
22 -- it's -- basically, that's it and I think --

23 **MR. HINNEFELD:** Right.

24 **MR. GRIFFON:** -- I think they're accepting it
25 or -- I -- I think we said we wouldn't -- we

1 wouldn't come to final closure on these today -
2 -

3 **MR. HINNEFELD:** Right.

4 **MR. GRIFFON:** -- 'cause they just got --

5 **MR. HINNEFELD:** All right.

6 **MR. GRIFFON:** -- they just received them, but -
7 -

8 **MR. HINNEFELD:** Okay, then we'll it -- we'll
9 (unintelligible) --

10 **MR. GRIFFON:** -- it sounds like we're satisfied
11 with this and -- but I think close it out with
12 something in writing.

13 **MR. HINNEFELD:** Okay, 68.4 is -- has to do with
14 the plutonium internal dose calculations being
15 excessively -- excessively complex and then,
16 without scientific basis, potentially not
17 claimant favorable. I think we agreed that
18 they were excessively complex, but -- let me
19 see if I can get to another finding here. In
20 this case they reviewed the -- SC&A reviewed
21 the applicability of the records for chest
22 counts and urinalyses. All 17 chest counts
23 were identified as routine and which limits the
24 credibility in modeling the four chest counts
25 greater than MDA as acute exposure

1 (unintelligible) and on the reasonable
2 assumption that urinalysis for plutonium and
3 chest counts were administered for the common
4 objective of assessing lung burden and body
5 burden for plutonium seems unreasonable and
6 without basis for NIOSH to conclude that
7 monitoring for plutonium was discontinuous
8 based on urine data above. By focusing
9 exclusively on urine data, NIOSH eliminated
10 several years of potential intakes and modeled
11 intakes as three discrete chronic intake
12 regimes.

13 I don't know if you guys are set to comment on
14 that or not. I -- and I -- I guess I'm not --
15 don't have that one ready at hand in my mind.

16 **MR. ALLEN:** Well, the finding here -- the
17 additional analysis says we'll supply some --
18 if I'm on the right line here --

19 **MR. GRIFFON:** 68.4, right?

20 **MR. HINNEFELD:** Yeah.

21 **MR. ALLEN:** Yeah, this -- this one I think we
22 can give some IMBA analysis and a little short
23 write-up, you know, just like the other ones.

24 **MR. HINNEFELD:** Okay.

25 **MR. ALLEN:** We could -- that's not a problem,

1 owing something on that, I believe. Right?

2 **MR. SIEBERT:** Yeah, we're working on that.

3 But it -- the other thing is the original
4 assessment did not take into account in-growth
5 for the americium-241 from plutonium-241. I
6 know we're not getting technical here, but it
7 is very claimant-favorable that way. Once you
8 take that into account, you start over-
9 predicting the chest counts when you go from
10 urine, and we're -- we'll -- we'll show that in
11 our -- our response.

12 **MR. ALLEN:** Yeah, I think most of these IMBA
13 runs in general that we talk about today
14 basically just show that if you just looked at
15 one bioassay, similar to the comment in here,
16 you find out that you're inconsistent with the
17 remaining data, and we strove all along to be
18 consistent with all the data that we have for
19 the individual. Once you do that, I think you
20 come back to where we started, so we'll --
21 we'll produce some IMBA analysis --

22 **MR. GRIFFON:** I'm not --

23 **MR. ALLEN:** -- to -- to show that.

24 **MR. GRIFFON:** Okay. The only confusion I have
25 with -- with your statement is that if -- if

1 this was a best estimate case -- are there like
2 degrees of best? Is it -- was it better and
3 then now you can fine-tune it a little further?

4 **MR. HINNEFELD:** Yeah, the --

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

6 **MR. HINNEFELD:** -- the term "best estimate"
7 shows up in --

8 **MR. GRIFFON:** Yeah.

9 **MR. HINNEFELD:** -- dose reconstructions where
10 the --

11 **MR. GRIFFON:** Right.

12 **MR. HINNEFELD:** -- Monte Carlo tool is used.

13 **MR. GRIFFON:** Okay, so any time --

14 **MR. HINNEFELD:** That's what --

15 **MR. GRIFFON:** -- a Monte Carlo tool is used.

16 **MR. HINNEFELD:** -- that kind of --

17 **MR. GRIFFON:** All right.

18 **MR. HINNEFELD:** -- recently recognized on my
19 part, but that language shows up in the dose
20 reconstruction when the Monte Carlo tool is
21 used, and --

22 **MR. GRIFFON:** So there may still --

23 **MR. HINNEFELD:** -- the fact --

24 **MR. GRIFFON:** -- be out there (unintelligible)

25 --

1 **MR. HINNEFELD:** There may be overestimates.

2 **MR. GRIFFON:** -- overestimating, okay --

3 **MR. HINNEFELD:** It may be an overestimate to
4 the internal fit --

5 **MR. GRIFFON:** All right.

6 **MR. HINNEFELD:** -- so yeah.

7 **MR. GRIFFON:** But you can -- you can show that
8 in the write-up in the IMBA, and that's fine.
9 Good. All right.

10 **MR. HINNEFELD:** Okay, 68.5 is -- again, is --
11 we believe an IMBA analysis showing the -- the
12 uranium intakes and how they would fit the
13 bioassay data best would be the best way to
14 explain the selection of intake dates, so the
15 IMBA analysis is another -- I mean I think we
16 should provide that there.

17 And 68.7 I believe is the same as 67.8.

18 **UNIDENTIFIED:** Yes.

19 **MR. HINNEFELD:** Okay, I believe 68 -- case 68
20 (unintelligible). Case 69 is --

21 **MR. GRIFFON:** This is still Savannah River.
22 Right? 69 on (unintelligible) --

23 **MR. HINNEFELD:** Still Savannah River.

24 **MR. GRIFFON:** Yeah.

25 **MR. HINNEFELD:** Finding 69 dash 2 -- I think I

1 recognize it from the summary but let me make
2 sure (unintelligible).

3 (Pause)

4 I believe this is a case where the external
5 dosimetry was entered as the constant measured
6 value as opposed to a normally distributed
7 value, and it was combined with a DCF of one,
8 which is higher than the entire triangular
9 distribution of the DCF for the
10 (unintelligible). That was entered as an
11 expected -- modest overestimate, not a -- not a
12 hugely overestimated but is somewhat a modest
13 overestimate of the outcome. And what we're
14 doing, and this is sort of a tedious process,
15 is to develop -- you know, demonstrate the --
16 you know, what would -- what's the difference
17 between using the measured and a normal
18 distribution (unintelligible) triangular,
19 versus the measured as a constant times one.
20 That's a fairly tedious thing to do 'cause you
21 have to do it for different risk models for --
22 so we're kind of choosing some sample risk
23 models and show -- and at what point does the
24 annual uncertainty then maybe make it a factor.
25 If you have a big enough uncertainty on a

1 normal distribution, it could be that the
2 normal distribution times the true triangular
3 DCF may in fact provide -- be more favorable to
4 the claimant than what intuitively seems like
5 it would be an overestimate, which is measured
6 times one, because of the uncertainty it brings
7 into the POC calculation. So that's underway,
8 and like I said, it's tedious and it hasn't
9 been, frankly, on the front burner. Those are
10 (unintelligible).

11 **DR. BEHLING:** Stu, can I just make a comment?
12 I -- I fully accept your -- your explanation,
13 and I think the only thing that I would say
14 here is that perhaps one of the TIBs or -- or
15 guidance documents should be modified so as to
16 say that when we use a default DCF of one, we -
17 - we consider that claimant favorable enough to
18 -- to -- to ignore the issue of uncertainty,
19 just so that it's in the procedure and explains
20 why that was done. I think that's -- I -- I
21 fully agree that for certain types of photon
22 energies and -- and organ doses, a -- a default
23 DCF of one is clearly claimant favorable and is
24 likely to offset any uncertainty and -- and all
25 that needs to be stated in some procedure that

1 that's the case and that's what's being done
2 and -- and simply provide some documentation to
3 that effect, that's all.

4 **MR. GRIFFON:** But -- but I thought, Stu, you
5 said that it may not be intuitively obvious and
6 that (unintelligible) --

7 **MR. HINNEFELD:** (Unintelligible)

8 **MR. GRIFFON:** -- examining this because the
9 uncertainty affects your IREP (unintelligible)
10 -- you know, your IREP or (unintelligible).

11 **MR. HINNEFELD:** We're -- yeah, we're examining
12 -- now once we arrive at that --

13 **MR. GRIFFON:** Yeah, then maybe you can --

14 **MR. HINNEFELD:** -- (unintelligible) would make
15 some sense and under what circumstances does
16 this make sense and it is a favorable --

17 **MR. GRIFFON:** All right.

18 **MR. HINNEFELD:** -- overestimate. And it may be
19 that it is always -- you know, that -- if your
20 intuition is correct and it is always --

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

22 **MR. HINNEFELD:** -- favorable, it may be that --

23 **MR. GRIFFON:** If you find that out, then you
24 can --

25 **MR. HINNEFELD:** Once you start worrying -- once

1 you start worrying about, you know, putting a
2 constant value into IREP versus an uncertain
3 value into IREP, especially when you're using
4 the 95th percentile of the outcome -- or 99th
5 percentile of the outcome -- that you say well,
6 gee, we'd better check this -- essentially what
7 we're doing.

8 **MR. ALLEN:** It's intuitively obvious in most
9 situations with a handful that really need to
10 analyze some numbers to show that it is.

11 **MR. HINNEFELD:** Right, yeah. Okay, let's see,
12 that was 69.2, 69.3, which we believe is the
13 same as 69.2 only this time it's expressed for
14 neutrons as opposed to photons; 69.4 is -- has
15 to do with selection of the solubility class
16 not being claimant favorable. Again, we
17 believe it's -- we chose that class because it
18 fits bioassay data. We'll provide an IMBA
19 analysis to demonstrate that.

20 69.5 talks about the use of a triangular
21 distribution that goes to zero, I think is the
22 key element. Let me -- because 69.5 I believe
23 is couched in terms that the in vivo counts for
24 -- the in vivo counts for this person has net
25 positive counts below the MDA. And so, given

1 that situation, is it appropriate to have your
2 missed dose (unintelligible) by a triangular
3 distribution that goes all the way to zero. Is
4 there really a potential that it goes to zero.
5 I believe I'm paraphrasing the finding correct.
6 So in that circumstance, we -- I think we can
7 provide something in writing rather than get
8 into the discussion here. Recall, though, that
9 the top end of that triangular distribution
10 relies on that MDA or that limited detection.
11 I mean that's how you arrive at that top end
12 because it's based on that LOD. So if the LOD
13 then becomes meaningless in terms of detection
14 and then you start worrying -- then you would
15 have to consider well, what -- is it really
16 meaningful for the top end. And if -- and in
17 addition, there are -- you know, it's not like
18 there's one detection or one bioassay that just
19 was missed. There could be a collection of
20 bioassay and so it becomes very favorable to
21 start considering the -- even with a collection
22 of bioassay, you were always -- you always just
23 missed it. You know, every case was right
24 below detection --

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

1 **MR. HINNEFELD:** -- that that becomes -- becomes
2 -- which is sort of the assumption that's made,
3 and that's going to be quite favorable in -- on
4 -- you know, in (unintelligible) -- fact quite
5 improbable because (unintelligible) --

6 **MS. MUNN:** (Unintelligible) totally improbable.

7 **MR. HINNEFELD:** So there is some other stuff
8 going into this. We think we can put together
9 a -- you know, a written explanation
10 (unintelligible) --

11 **DR. BEHLING:** Yeah, Stu, and -- and I guess I -
12 - I think you probably stated things that I was
13 going to say, too, here. And that is, when I
14 look at a collection of datapoints where --
15 let's assume we're talking about urine data
16 analysis for tritium or something, and 60
17 percent are clearly above MDA, measurable --
18 the things, then I would clearly want to say
19 perhaps the zero value as the triangular
20 distribution for those that are below MDA is
21 maybe not necessary (sic) claimant favorable.
22 On the other hand, if I saw 50 bioassays for
23 tritium and not one was measurable, then I
24 would say it's clearly appropriate to use the -
25 - the -- the triangular distribution that has,

1 at the low end, zero because it's --
2 statistically speaking, you would -- you would
3 be amiss not to assume that.

4 **MR. ALLEN:** Yeah, Hans, this is Dave. I think
5 there might be one more issue with this
6 particular one, and that is -- based on the
7 Savannah River in vivo results -- that the
8 column that says "net counts" is not directly
9 related to the isotopic concentration in the
10 body. That's actually the counts -- the gross
11 counts in a region of the spectrum minus the
12 empty chamber background is that net counts --

13 **DR. BEHLING:** Uh-huh.

14 **MR. ALLEN:** -- and then the -- the count column
15 shows how that is mirrored when you actually
16 have a person in there with the potassium being
17 smeared into the cesium region, et cetera.

18 **DR. BEHLING:** Yes.

19 **MR. ALLEN:** So the -- the one column that is
20 used for calculating isotopic concentration is
21 the column that says "dif", which I guess is
22 "difference", you know, and it's not
23 consistently positive or negative for the
24 individual here. They're -- it bounces back
25 and forth between positive num-- positive

1 counts and negative counts, which pretty much
2 demonstrates that it should be zero on the low
3 end.

4 **UNIDENTIFIED:** Uh-huh.

5 **MR. ALLEN:** I just -- I just recently -- I
6 think last night -- came to the realization
7 that I think we were talking about the net
8 column when we should be looking at the dif
9 column in this one.

10 **DR. BEHLING:** I agree, I agree.

11 **MR. GRIFFON:** Right.

12 **MR. HINNEFELD:** Okay, let's see, I believe
13 we're ready for 69.7, which I (unintelligible)
14 again, the internal dose from fission products,
15 which I believe is the same or -- or certainly
16 similar to 67.8. We'll read -- make sure we
17 read the entirety of the findings and if
18 there's any different nuances -- we want to
19 make sure we --

20 **MR. GRIFFON:** All right.

21 **MR. HINNEFELD:** -- address any other nuances in
22 the various findings. And 69.8, I believe it's
23 similar to the earlier one.

24 **DR. MAURO:** Correct.

25 **MR. HINNEFELD:** This is a different

1 radionuclide, I believe, or a different
2 bioassay scheme.

3 70.2 is the next thing that we can provide --
4 or 70.2 was a Hanford case. This finding was
5 that the external dose didn't include
6 uncertainty, and I think in this case it was
7 not a case of using a one as a DCF as an
8 overestimate, because the triangular
9 distribution goes above one. I believe they
10 just didn't include the uncertainty in the
11 measured dose and applied the -- the
12 appropriate DCF, but with -- they didn't
13 account for the uncertainty in the measured
14 dose, so I believe this actually was an
15 oversight and the uncertainty should be in here
16 and that -- that's a relatively straightforward
17 --

18 **DR. MAURO:** You're talking 70.2?

19 **MR. HINNEFELD:** 70.2.

20 **DR. MAURO:** I guess I -- my understanding was
21 there was actually some photon dose that was
22 not accounted for. There was some -- in other
23 words, there were some zeroes where -- and
24 please clarify -- help me out with this, but I
25 thought that -- now I remember talking about

1 this when it was being done, that in going back
2 to the records there were some zeroes that were
3 treated as if they were zero. In other words,
4 as opposed to assigning the MDA over two. I'm
5 -- I'm not sure, but I just -- I want to make
6 sure we didn't miss that.

7 **MR. HINNEFELD:** Well, that's a --

8 **DR. MAURO:** As opposed to an uncertainty issue.

9 **MR. HINNEFELD:** There were some -- there were
10 some cases where there were some questions
11 about the count of the number zeroes used in
12 the (unintelligible).

13 **DR. MAURO:** That may be what I'm thinking
14 (unintelligible).

15 **MR. HINNEFELD:** There -- there were some issues
16 about that, and I've -- we've provided some
17 explanation in our responses in various places
18 where -- why we interpreted -- you know,
19 certain -- certain -- certain sites, if you've
20 got a blank that means there was no badge,
21 because they reported zero if they had a badge,
22 they wrote zero. So I think that explains some
23 of it. I believe this one -- if I'm -- I'm
24 clear on (unintelligible) the case was of why
25 they used the -- the true DCF, even though the

1 -- the dose reconstruction inappropriately, you
2 know, said -- said they used one, they didn't;
3 they used -- actually used the DC-- the
4 triangular DCF distribution, more the top end
5 of the DCF distribution. They did not include
6 the uncertainty of the measured dose, so that
7 is a different issue than taking a constant
8 times one when the entire triangular DCF is
9 less than one, so that's a different issue.
10 And -- and this is -- I mean that's a fairly
11 straightforward thing to -- to rework and
12 refigure.

13 **MR. GRIFFON:** And when you -- I -- I just want
14 to clarify your action here. It says
15 recalculate POC. I don't think we've --

16 **MR. HINNEFELD:** Okay. Well, we'll recalculate
17 the dose.

18 **MR. GRIFFON:** Re-- recalculate dose. Right?
19 Okay. Recalculate -- you know, I'm not sure
20 how to phrase that, but I don't think you want
21 to say recalculate POC. What do you want to
22 say?

23 **MR. HINNEFELD:** Why don't we just say dose, and
24 then or say (unintelligible) --

25 **MR. GRIFFON:** Incorporating appropriate

1 uncertainty in recorded dose, recalculating
2 dose?

3 **MR. HINNEFELD:** We could --

4 **MR. GRIFFON:** Incorporating uncertainty in
5 dose? I'm not sure that makes sense.

6 **MR. HINNEFELD:** (Unintelligible) incorporating
7 -- evaluate -- or we could just evaluate the
8 impact.

9 (Whereupon, Mr. Griffon, Mr. Hinnefeld and
10 other participants spoke simultaneously,
11 rendering transcription of individual comments
12 impossible.)

13 **MR. GRIFFON:** Impact, yeah. Okay.

14 **MR. HINNEFELD:** 71.2 is, again, the failure to
15 account for recorded photon dose uncertainty,
16 and I believe that's the same as 69.2 -- in
17 this case it was using one as -- as DCF as a
18 constant (unintelligible) the triangular.
19 And 76.2 is failure to assign unmonitored
20 neutron dose, and again, we will evaluate the
21 impact of including the unmonitored neutron
22 dose.

23 Let's see, case number 71 was also a Hanford
24 case. Case number 76 is a Fernald case. And
25 our Technical Basis Document calls for a

1 neutron component to be added based on the
2 photon measurement because of the potential for
3 (unintelligible) end reactions on the
4 (unintelligible), especially fluorides, so
5 there is a -- a judgment was made in this case
6 that this person wasn't around the fluoride
7 storage (unintelligible) judgment, you know,
8 based on the record that was given in his
9 bioassay, his location when he gave a bioassay
10 sample, there should have been more cases. The
11 assumption should have been made -- or maybe
12 throughout should have been made if he should
13 have received that neutron component.

14 **MR. GRIFFON:** The only --

15 **MR. HINNEFELD:** Okay, that's the end of my
16 list.

17 **MR. GRIFFON:** The only thing I would say at
18 this point is if there's other -- and Kathy and
19 Hans, you -- you just received this material,
20 so I would say maybe look through the revised
21 matrix, compare it to this action list, and if
22 there's anything that -- that you were
23 expecting as far as a written response, maybe
24 we can have you work with Stu by e-mail or --
25 or phone, and if there's a corrected list in

1 any way, you can -- you can circulate --

2 **MR. HINNEFELD:** Yeah, if you just let me know -

3 -

4 **MR. GRIFFON:** Yeah, 'cause I think they haven't
5 had time --

6 **MR. HINNEFELD:** Yeah, I'm sure they haven't.
7 I'm sure they haven't.

8 **MS. BEHLING:** Right.

9 **MR. HINNEFELD:** If you'd just let me know of
10 other things you feel like where written
11 material would be appropriate where I thought
12 the resolution was okay and you thought no, we
13 need -- really need more on this, you let me
14 know and I'll modify this list.

15 **MR. GRIFFON:** Seems like this was most of them,
16 but (unintelligible) --

17 **MR. HINNEFELD:** (Unintelligible)

18 **MR. GRIFFON:** -- opportunity to run through
19 them (unintelligible) --

20 **MR. HINNEFELD:** I'll admit, this is my --

21 **MR. GRIFFON:** Yeah.

22 **MR. HINNEFELD:** -- this is my judgment. You
23 know, I looked down the list and this is what I
24 judged it to be and I'm not the final judgment.

25 **MS. BEHLING:** I did keep -- I did go back when

1 we were initially going to have the discussion
2 on the fourth set and make a listing of the
3 findings I thought we were supposed to re-
4 evaluate. And I have to admit, I do have a few
5 more on my list than I see on this list, so you
6 and I can discuss that, Stu.

7 **MR. HINNEFELD:** Yeah, it'd be easier for you
8 and I to talk about that.

9 **MS. BEHLING:** That's fine.

10 **MR. GRIFFON:** Okay, good. Would it be okay for
11 like a ten-minute -- at five after 11:00 let's
12 call -- call it back in session?

13 **DR. WADE:** Thank you. We're going to take a
14 ten-minute break, so we're going to mute until
15 ten minutes.

16 (Whereupon, a recess was taken from 10:55 a.m.
17 to 11:15 a.m.)

18 **DR. WADE:** We're back on line. Any Board
19 members --

20 **MR. GRIFFON:** (Unintelligible) anyone on the
21 line -- anyone -- any Advisory Board member on
22 the line?

23 (No responses)

24 No.

25 **DR. WADE:** Okay.

1 **MR. HINNEFELD:** Okay.

2 **MR. GRIFFON:** Can we -- can we go back to 81.1
3 just for a second?

4 **MR. HINNEFELD:** Sure.

5 **MR. GRIFFON:** In the middle of your response it
6 says the bounding estimates would become the
7 best estimate. At -- at what point do you -- I
8 mean do -- do you at any point have to evaluate
9 whether there's sufficient data to do
10 individual dose reconstructions for that site?
11 Does it become sort of a question of, you know,
12 self-identifying SEC situation if you evaluate
13 --

14 **MR. HINNEFELD:** Well, I mean, yeah. I mean --

15 **MR. GRIFFON:** Well, you can establish plausible
16 upper bounds for all workers? I mean it --

17 **MR. HINNEFELD:** I guess --

18 **MR. GRIFFON:** -- does it get into that realm
19 or...

20 **MR. HINNEFELD:** -- our going in -- I guess our
21 position is that TIB-4 is broadly applicable as
22 a bounding dose for uranium operations. And if
23 a site falls into that category, the uranium
24 operation fits within the scope of OTIB-4, that
25 OTIB-4 provides a bounding estimate. So I

1 guess there could be some situations where we
2 would not have sufficient data to say we can't
3 say with confidence that this site fits within
4 the scope of OTIB-4, in which case we would
5 have to reach that conclusion, that since we
6 can't necessarily say it fits within OTIB-4,
7 that we don't have enough information to be --
8 to -- to do dose reconstructions. But we can
9 satisfy ourselves that it fits within the scope
10 of OTIB-4, then we would believe that we can at
11 least do a bounding dose reconstruction.

12 **MR. GRIFFON:** Okay. I just wanted a
13 clarification on that. And then with 81.2,
14 just so -- this is a question in terms of
15 follow-up -- there -- there is a PER associated
16 with this AP review -- right? -- at the bottom?

17 **MR. HINNEFELD:** Well -- 81.3?

18 **MR. GRIFFON:** Yeah -- is it 81.3? 81 -- I --
19 81 2 touches on it, but 81 3 -- yeah.

20 **MR. HINNEFELD:** 81.2 -- 81.2's response
21 describes how the photon dose --

22 **MR. GRIFFON:** Okay.

23 **MR. HINNEFELD:** -- that we couldn't reproduce
24 in -- in Revision 2 was apportioned between
25 different geometries and different -- different

1 --

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

3 **MR. HINNEFELD:** -- energy bands. And -- and in
4 fact, when you compare Rev. 3 with the correct
5 dose number, 100 percent AP with 100 percent 30
6 to 250, you still -- it's still -- the outcome
7 in terms of POC goes down slightly so we don't
8 have to go back. And a TIB-4 reconsideration
9 is kind of an odd one because it's clearly an
10 overestimate anyway, so it's not like you've
11 done a best estimate, now you've changed the
12 technique and you have to back and say, you
13 know, what's the effect of the technique on
14 this best estimate when you have a fairly
15 health overestimate to start with. Even if
16 there had been some change upward, you think
17 well, they were overestimated anyway, in all
18 likelihood.

19 **DR. MAURO:** Well, for the benefit of the Board
20 -- I mean, OTIB-4 is very simple. It's saying
21 that you've got a person standing one foot away
22 from an ingot 20 -- 2,000 hours per year
23 getting 2 MR per hour, which is the max dose
24 you can get. You can't get worse than that.
25 And in terms of inhalation goes, they assume a

1 person's continually exposed to 100 MAC. This
2 is -- from looking at the literature, this is
3 up at 90 -- 95th percentile of all the data.
4 So in other words, yeah -- the only place there
5 might be an exception, you've run across
6 Harshaw, it's a pretty nasty place, but -- but
7 in terms of in general, 100 MAC -- continuous
8 exposure, 100 MAC is way up there. So that's
9 why we feel that OTIB-4 is -- is a good
10 bounding estimate.

11 **MR. HINNEFELD:** Yeah, Harshaw was nasty enough
12 -- or at least early on -- that we said if we
13 added (unintelligible) --

14 **DR. MAURO:** (Unintelligible) try again
15 (unintelligible).

16 **MR. GRIFFON:** Right, right, right, right. So
17 we -- the only real -- I mean the real thing to
18 examine here is whether the facilities meet
19 TIB-4 requirements.

20 **DR. MAURO:** Right.

21 **MR. GRIFFON:** You know, whether they belong in
22 this group.

23 **DR. MAURO:** Whether they belong --

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

25 **DR. MAURO:** Well, no, now that you have --

1 **MR. GRIFFON:** Yeah, that's the
2 (unintelligible).

3 **DR. MAURO:** (Unintelligible) not sure. Now
4 that you have a site profile for Bridgeport
5 Brass, I guess -- is --

6 **MR. HINNEFELD:** Yeah, we would use that.

7 **MR. GRIFFON:** Yeah, right, right. Now 81.2,
8 the fol-- just -- I'm trying to capture the
9 actions so I'm going back to these -- that --
10 that OTIB-4, the revision, is in the procedures
11 review, I think, or has been done already, I'm
12 not sure.

13 **DR. MAURO:** Yeah, OTIB-4 has been done. I
14 don't know if this latest version has been done
15 or not.

16 **MR. GRIFFON:** Okay, so I'm --

17 **MR. HINNEFELD:** I can't remember.

18 **MR. GRIFFON:** I'm putting procedure review for
19 now.

20 **DR. MAURO:** Is this --

21 **MR. GRIFFON:** I'll check these things.

22 **DR. MAURO:** Is this the third? 'Cause we
23 reviewed two versions. Is this a third
24 version?

25 **MR. HINNEFELD:** Well, Rev. 3 is the currently

1 out one, but --

2 DR. MAURO: Okay, we --

3 MR. HINNEFELD: -- I don't know if you -- you
4 may have not reviewed every one.

5 DR. MAURO: No, no, I may --

6 MR. HINNEFELD: And in fact, if it's Rev. 3,
7 it's actually the fourth version --

8 DR. MAURO: It's the fourth --

9 MR. HINNEFELD: -- 'cause there's a Rev. 0.

10 DR. MAURO: 'Cause there's a PC-1 and there was
11 a P--

12 MR. HINNEFELD: Well, I'm not talking about
13 PCs.

14 DR. MAURO: Okay.

15 MR. HINNEFELD: There's a Rev. 0 --

16 DR. MAURO: I don't know.

17 MS. BRACKETT: It is in revision now, too.

18 MR. HINNEFELD: Oh, good. Thank you.

19 MR. GRIFFON: It's in revision. Okay. Okay.

20 UNIDENTIFIED: Always.

21 UNIDENTIFIED: Always. Constantly.

22 DR. MAURO: Well, as of the last review, we
23 still had a problem with the external dose
24 model. That is, when we ran MCMP* and compared
25 it to your numbers, we were coming up with

1 numbers a little bit lower than was in the --
2 the version of OTIB-4 that we looked at.

3 **MR. HINNEFELD:** Okay.

4 **DR. MAURO:** Now you're saying that your -- your
5 numbers have come down, I -- and it was --

6 **MR. HINNEFELD:** No, not -- no, the -- well,
7 yeah -- I mean but you guys pointed out that
8 the table numbers were too high.

9 **DR. MAURO:** Yeah.

10 **MR. HINNEFELD:** That was your finding.

11 **DR. MAURO:** Yeah.

12 **MR. HINNEFELD:** We said, you know, you're
13 right; we can't reproduce them, either. But we
14 looked at Rev. 3 and we said well, Rev. 3
15 doesn't duplicate that error. It's taken out
16 and it's already been revised.

17 **DR. MAURO:** Okay.

18 **MR. HINNEFELD:** So --

19 **MR. GRIFFON:** But this -- this is in the proc.
20 review, I hope --

21 **MR. HINNEFELD:** Yeah.

22 **MR. GRIFFON:** -- it's in that -- it's in that
23 cycle. Right?

24 **MR. HINNEFELD:** It is in -- it's on the list,
25 and I don't know where it is, whether it's been

1 reviewed -- whether -- whether this version's
2 been reviewed or not.

3 **MR. GRIFFON:** I'll def-- we can double-check
4 this. I can talk to Wanda and we'll check this
5 off-line.

6 **MS. MUNN:** My memory (unintelligible).

7 **MR. GRIFFON:** And then the only -- okay, then -
8 - then really -- the one I was talking about,
9 the PER really is associated with 81.3 more --

10 **MR. HINNEFELD:** Yes.

11 **MR. GRIFFON:** -- than 81.2.

12 **MR. HINNEFELD:** Yes.

13 **MR. GRIFFON:** But other than that, for this
14 individual finding -- just to go back one more
15 time -- the procedures review of TIB-4,
16 revision whatever, is going to be in procedures
17 review. And then -- but otherwise, this
18 finding would not likely affect -- there's no
19 further action. Right?

20 **MR. HINNEFELD:** We don't think so.

21 **MR. GRIFFON:** John?

22 **DR. MAURO:** I'm sorry?

23 **MR. GRIFFON:** No further action on this finding
24 other than procedures review of TIB-4, Rev.
25 whatever?

1 **DR. MAURO:** Yeah, if that's -- that's what you
2 would like to do.

3 **MR. GRIFFON:** No, for 81 2 I'm asking if you
4 agree with NIOSH's response.

5 **MS. BEHLING:** We agree.

6 **DR. MAURO:** Thank you, Kathy.

7 **MR. GRIFFON:** Thanks, Kathy.

8 **DR. MAURO:** Thank you, Kathy.

9 **MR. GRIFFON:** Okay. Then 81.3, I was asking if
10 there's like a PER number -- you say there's --
11 there's --

12 **MR. HINNEFELD:** Well, I mean there is an AP
13 geometry PER --

14 **MR. GRIFFON:** Okay.

15 **MR. HINNEFELD:** -- that -- and I don't have the
16 number handy, but it's -- again, this was --
17 you know, this is a TIB-4 case and it's already
18 a significant overestimate the way it's done --

19 **MR. GRIFFON:** Yeah.

20 **MR. HINNEFELD:** -- so it's not clear whether
21 this change is going to be significant enough
22 to warrant.

23 **MR. GRIFFON:** And it was compensated, as well.
24 Right?

25 **MR. HINNEFELD:** Yeah, this case would be

1 considered (unintelligible).

2 **MR. GRIFFON:** So I think -- I think no further
3 action on this case, but -- but the PER -- the
4 PER -- as far as tracking this through to
5 ground, as we discussed earlier, I think we
6 probably want to note that a PER was done on
7 this whole AP thing, and instead of continuing
8 to, you know, hash these around in this -- in
9 this setting, we can take up that AP geometry
10 PER (unintelligible) --

11 **MR. HINNEFELD:** Okay.

12 **MR. GRIFFON:** -- in one swath, maybe, and maybe
13 not in the subcommittee but for the full Board.
14 Larry, does that make sense to you?

15 **MR. ELLIOTT:** Yeah, but I don't think the AP
16 ge-- PER is even -- it's not been completed
17 yet, has it, Dave?

18 **MR. GRIFFON:** I mean when it's -- when it's
19 comple-- when it's available, I guess, yeah,
20 yeah. Okay.

21 **MR. ELLIOTT:** I just didn't want us to be
22 talking like it was already done.

23 **MR. GRIFFON:** Okay. But no further action for
24 this case is what I'm saying.

25 **MR. HINNEFELD:** Right.

1 **MR. GRIFFON:** Okay.

2 **MR. HINNEFELD:** 81.4 and 81.5 in the findings
3 were about the use of OTIB-4 for this case, and
4 we agree; 81.1 is essentially our -- our
5 response to that -- that use. So that
6 completes case number 81.

7 **MR. GRIFFON:** I want to make sure about 81 5.
8 I just wasn't clear if they were asking about
9 the data used for reconstruction --
10 reconstructing dose is adequate for -- again,
11 for determining POC. But I mean it -- it --
12 why -- I don't understa-- can you --

13 **DR. MAURO:** It's the same thing. It's the sa--
14 it's -- it's the same issue there, is can you
15 use OTIB-4 for compensation --

16 **MR. GRIFFON:** Oh, okay, for comp-- for a
17 compensable case --

18 **DR. MAURO:** For a compensable case.

19 **MR. GRIFFON:** -- not for -- I thought you were
20 talking about --

21 **DR. MAURO:** No, not --

22 **MR. GRIFFON:** -- for that site, was it
23 appropriate for Bridgeport.

24 **DR. MAURO:** No, no, no, just in general across
25 the board.

1 **MR. GRIFFON:** For compensable cla-- okay, okay.

2 **DR. MAURO:** Right.

3 **MR. GRIFFON:** So it is the same as 81.1.

4 **DR. MAURO:** It's the same exactly as --

5 **MR. GRIFFON:** Gotcha, so no further action.

6 Okay, 82 --

7 **MR. HINNEFELD:** John, you want to do your 30
8 seconds?

9 **DR. MAURO:** Okay.

10 **MR. GRIFFON:** 30 seconds.

11 **DR. MAURO:** Harshaw Chemical, we have -- again
12 it's case, compensated. And in this they also
13 used OTIB-4 with (unintelligible) assumptions
14 we described and the person was compensated.
15 There is no site profile, as I understand it,
16 for Harshaw -- at least the last time we
17 checked.

18 **MR. HINNEFELD:** Not yet.

19 **DR. MAURO:** At least not yet. So it's not like
20 the previous one where you do have a site
21 profile. I mean it's sort of (unintelligible)
22 dilemma. In this case we have a -- a -- what I
23 would argue -- now the only question I have
24 regarding application of OTIB-4 to a Harshaw
25 case is keep in mind that the -- OTIB-4 is

1 really exposure to an ingot -- you know, just
2 pure uranium, a solid, pure uranium. Harshaw -
3 - Harshaw of course was a much more complex
4 site where the exposures were to various forms
5 of uranium. There was all sort-- the whole
6 chemistry. Now whether or not one would
7 consider that -- it's still uranium, there's no
8 doubt that Harshaw was uranium, but it
9 certainly wasn't the uranium as it has been --
10 as is described in OTIB-4. OTIB-4 is really,
11 you know, a solid slab. And -- nevertheless --
12 nevertheless, I would go on to say that still
13 you -- you -- you assign an external dose to a
14 person as if he's standing next to a slab 1,000
15 -- 2,000 hours per year, I don't care what type
16 of uranium you're dealing with, that's pretty
17 conservative for external. And internal, using
18 100 MAC all the time, well, here we're talking
19 Harshaw, I think this -- this particular case
20 might have been during the -- the period where
21 there is an SEC. And if so, it's almost a non-
22 issue.

23 **MR. HINNEFELD:** Yeah.

24 **DR. MAURO:** Is that right?

25 **MR. HINNEFELD:** And in fact, I think TIB-4 --

1 **MR. ELLIOTT:** (Unintelligible) cancer is
2 esophageal.

3 **MR. HINNEFELD:** Yeah.

4 **DR. MAURO:** And -- and it -- and it's
5 presumptive, right.

6 **MR. HINNEFELD:** TIB -- TIB-4 I don't believe
7 limits itself to uranium metal handling. Isn't
8 that true?

9 **MR. ALLEN:** It used to be --

10 **MR. HINNEFELD:** It used to be uranium metal.

11 **MR. ALLEN:** No --

12 **MR. HINNEFELD:** Oh, now it -- it's changed back
13 to uranium metal, so for a time, I believe
14 probably at the time this was done, it allowed
15 -- TIB-4 was allowed for not just metal
16 handling but also for uranium compound work.
17 (Unintelligible) because the basis of the air
18 sampling that's used was air data collected at
19 what they called -- what, the dirty seven or
20 something, the -- the earliest sites that the
21 AEC started paying attention to about 1948. So
22 that would -- that -- since those weren't
23 strictly metal-forming sites --

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

25 **MR. HINNEFELD:** -- it was not strictly applied

1 to metal forming at the time, and so I think
2 that's probably the case when this was done.
3 But you're right, this -- this is a presumptive
4 cancer in the SEC class -- in the SEC period.
5 So had it not been compensated in this way, it
6 would have been compensated in the SEC.

7 **DR. WADE:** Yeah, but if it does raise a
8 scientific issue, SEC issue aside, it should be
9 fixed.

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

11 **DR. WADE:** Tracked and fixed.

12 **DR. MAURO:** I -- I would say that -- 'cause I -
13 -- I'm -- because I've been doing all these AWEs
14 and becoming very, very familiar with all of
15 the sites, all of the assumptions, and except
16 for Harshaw, you know, I -- the 100 MAC, and
17 that was -- from an external point of view, you
18 -- you know, as long as you don't have any ore,
19 you know, any thorium or radium there --

20 **MR. HINNEFELD:** Right, right.

21 **DR. MAURO:** -- and this is the only uranium,
22 and it's not recycled uranium and it -- you
23 know, it's not enriched -- you know, you're
24 dealing with pure uranium, the OTIB seems --
25 OTIB-4 seems to work -- in terms of external

1 exposure, work very well.

2 The inhalation part, 100 MAC, when I look at
3 all the dat-- the records, even -- even for
4 sites that handled -- you know, was processing
5 uranium, not just grinding it --

6 **MR. HINNEFELD:** Right.

7 **DR. MAURO:** -- 100 MAC is up there.

8 **MR. HINNEFELD:** Yeah.

9 **DR. MAURO:** It ain't bad. So -- but
10 nevertheless, there are cir-- some
11 circumstances where you do go above 100 MAC, so
12 it sounds like your latest version is going to
13 limit it -- I guess, am I correct, to --

14 **MR. GRIFFON:** To metal handling.

15 **MR. HINNEFELD:** I've lost track.

16 **MR. ALLEN:** That is where it's at right now.

17 **DR. MAURO:** Only metal.

18 **MR. HINNEFELD:** All right.

19 **MR. GRIFFON:** Now what -- 82 was which site
20 again?

21 **MR. HINNEFELD:** Harshaw.

22 **DR. MAURO:** 82 was -- the one we just did was
23 Harshaw.

24 **MR. GRIFFON:** It is Harshaw. So the question I
25 had was -- you said it was -- was it only

1 uranium, or was it --

2 **DR. MAURO:** No -- yeah, the Harshaw site is
3 only uranium, but in all different forms.

4 **MR. GRIFFON:** All different forms, right.

5 **DR. MAURO:** Every form you can think of --
6 brown, yellow --

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

8 **DR. MAURO:** Yeah, everything's there.

9 **MR. ALLEN:** And I believe OTIB-4 covered that
10 at that time, and it's been pared back to
11 metal.

12 **MR. GRIFFON:** Yeah.

13 **MR. ALLEN:** It kind of goes along with what you
14 mentioned earlier, at what point is the
15 bounding estimate you're not that sure of.

16 **MR. GRIFFON:** Right.

17 **MR. ALLEN:** Harshaw ended up being a self-
18 identified SEC --

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

20 **MR. ALLEN:** -- (unintelligible).

21 **MR. HINNEFELD:** 83.14.

22 **DR. MAURO:** Now -- now there are a couple of
23 points --

24 **MR. GRIFFON:** So that's the real bottom line,
25 is even though we might question the

1 applicability to this site, it doesn't matter.
2 It fell into this self-identified SEC anyway.
3 Right?

4 **MR. HINNEFELD:** And bear in mind that this is
5 one of the population of those cases that were
6 done with OTIB-4 and compensable with OTIB-4
7 when we've said that it was applied more
8 broadly than it should have been --

9 **MR. GRIFFON:** Yeah.

10 **DR. MAURO:** Right, so --

11 **MR. HINNEFELD:** -- so it's (unintelligible)
12 that, as well.

13 **MR. GRIFFON:** Okay.

14 **MR. HINNEFELD:** Doing this case today, we would
15 not have used this technique.

16 **DR. MAURO:** During the course of the discussion
17 you had mentioned OTIB-4 and you re-- you
18 revisited the external dose model now in -- in
19 terms of re-evaluating it. I did have a
20 problem -- doesn't apply to this case, but
21 while we're talking about it, one last thing
22 that would put OTIB-4 to bed is the ingestion
23 and resuspension/inhalation model. I think the
24 problem has been solved 'cause I read Bethlehem
25 Steel recently, the latest version, and Jim has

1 come up with his new method that he described
2 earlier and now I've had a chance to read it
3 and I think that this whole issue that I keep
4 harping on regarding that there -- relat-- you
5 know, how do you do con-- surface contamination
6 and inadvertent ingestion --

7 **MR. HINNEFELD:** Uh-huh.

8 **DR. MAURO:** -- and -- and inhalation. The new
9 method -- it looks good. I mean I -- you know,
10 I -- I read it because we had a meeting and I
11 wanted to be prepared, but it's still here in
12 OTIB-4. So when I -- so when you're re-looking
13 at OTIB-4 from an external point of view, you
14 may want to take a look at the resuspension
15 model that's imbedded in OTIB-4 and -- and see
16 -- and bring it up to date with the methodology
17 that's being used, for example, at Bethlehem
18 Steel. The -- the -- the problem --

19 **MR. GRIFFON:** So is this an overarching issue -
20 -

21 **DR. MAURO:** This is --

22 **MR. GRIFFON:** -- that Jim volunteered --
23 (Whereupon, multiple participants spoke
24 simultaneously, rendering transcription of
25 individual comments impossible.)

1 **MR. GRIFFON:** So that covers 82.5. Right?
2 That's the one you're (unintelligible)?

3 **DR. MAURO:** Yes, yes, I...

4 **MR. GRIFFON:** We're -- we're tracking that with
5 that global --

6 **DR. MAURO:** Global.

7 **MR. GRIFFON:** -- pol-- now that's not been
8 issued yet, has it, or -- you said you'd read
9 something and you're happy with it, I didn't
10 understand --

11 **DR. MAURO:** Well, no, yeah, I --

12 **MR. ELLIOTT:** You've seen it in the Bethlehem
13 Steel revised Technical Basis Document, and Jim
14 --

15 **MR. HINNEFELD:** That might be Bethlehem Steel-
16 specific.

17 **MR. ELLIOTT:** It is Bethlehem Steel-specific,
18 but the concept I think is what Jim's going to
19 --

20 **MR. GRIFFON:** Right.

21 **MR. ELLIOTT:** -- develop, and -- and you will
22 hear this -- I believe it's on his science
23 agenda items for the May meeting. He's
24 prepared to present the white paper on this to
25 you and -- so if we can get that -- get your

1 thoughts on that and we can implement this
2 thing, we would pick up the TIB-4 and any other
3 of the Technical Basis Documents that call for
4 ingestion/resuspension modeling and make sure
5 that, you know, we're -- we're applying this
6 applicably and implementing after it's -- did I
7 say that right, applying this applicably?
8 Applying this appropriately -- appropriately.

9 **MR. HINNEFELD:** I like that, applicably.

10 **MR. GRIFFON:** All right, so -- so there's --
11 there's no case-specific follow-up on any of
12 these, 82 1 through 5, I don't think. Or -- I
13 haven't looked at 6 yet, but --

14 **MR. HINNEFELD:** 82.6 is -- there is some
15 discussion in here that's somewhat supportive
16 of the ingestion that was used, but in reality
17 this is a generic issue.

18 **MR. GRIFFON:** Right.

19 **MR. HINNEFELD:** It would be on the generic
20 issue list.

21 **DR. MAURO:** Yeah, in fact I did want to talk a
22 little bit about -- this is a -- I guess a
23 concern I have. I think that the write-up you
24 have here in terms of your response explains
25 that well, the way we did the ingestion pathway

1 -- we understand your concerns. Okay?

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

3 **DR. MAURO:** But you know what? In the end, you
4 come out with some number, here's the number.
5 Then -- then in the answer said well, you know,
6 let's take a look how bad that number really
7 is.

8 **MR. HINNEFELD:** Yeah.

9 **DR. MAURO:** And you go to some other sources of
10 information and says hey, you know, that
11 number's not that bad when you look at these
12 other source of information -- and I agree with
13 that. I mean that's fine. But I -- but I
14 don't -- I think that side-steps the issue --

15 **MR. HINNEFELD:** Yeah.

16 **DR. MAURO:** -- if you see what I'm saying. I
17 think you still have to deal with the fact that
18 OTIB-4 says this and -- and so thi-- to me,
19 that wa-- in my mind, that though you may have
20 been able to find a way to ra-- justify why the
21 final number that you use might have been okay
22 after all --

23 **MR. HINNEFELD:** Right.

24 **DR. MAURO:** -- that -- that still doesn't mean
25 the OTIB-4 method should stand as-is.

1 **MR. HINNEFELD:** Yeah, and -- and we don't say -
2 - we don't claim it will, because --

3 **MR. GRIFFON:** What I've heard is that we'll
4 look at this generic paper Jim will present and
5 if -- you know, if it's accepted -- or, you
6 know, after review, I guess NIOSH would say
7 okay, let's reflect on that and does it affect
8 any of our TIBs and we'll make the changes if
9 we need to.

10 **MR. HINNEFELD:** Yeah.

11 **MR. GRIFFON:** So I think that's the way we
12 state it here. I don't think there's any case-
13 specific action --

14 **MS. MUNN:** No, I don't.

15 **MR. GRIFFON:** -- on that.

16 **MS. MUNN:** All the issues that have been raised
17 are being covered elsewhere.

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

19 **DR. MAURO:** That's the reason why I --

20 **MR. GRIFFON:** Is 82 6 --

21 **DR. MAURO:** -- (unintelligible) 30-second so
22 you could get the picture.

23 **MS. MUNN:** (Unintelligible)

24 **MR. HINNEFELD:** 82.7 is, again, the use of TIB-
25 4.

1 **MS. MUNN:** Yeah.

2 **MR. HINNEFELD:** That's what that is.

3 **MS. MUNN:** It still (unintelligible) --

4 **MR. GRIFFON:** I was just stopping at 82.6. Is
5 there --

6 **MR. HINNEFELD:** I think the only action would
7 be that it's the generic ingestion issue.

8 **MR. GRIFFON:** Generic -- right, okay. Yeah,
9 got it. Okay.

10 **MR. HINNEFELD:** That takes us to 83, 83 is
11 Herring Hall.

12 **UNIDENTIFIED:** Herring Hall?

13 **DR. MAURO:** Herring Hall, early years, machined
14 uranium, used OTIB-4 and the person was
15 compensated. And as I see it, it's the same
16 old story, you know, OTIB-4 was used. I don't
17 -- now I don't believe there is a -- there
18 might be -- site profile for Herring Hall?

19 **MR. HINNEFELD:** Not yet.

20 **DR. MAURO:** Not yet? Now when -- when -- when
21 and if that does come out, we're going to have
22 a very similar situation as we did for
23 Bridgeport Brass. That is, you have a more
24 realistic treatment.

25 **MR. HINNEFELD:** Yeah.

1 it's --

2 **MR. GRIFFON:** What site is this again? I
3 missed --

4 **DR. MAURO:** Huntington --

5 **MR. GRIFFON:** Huntington (unintelligible).

6 **DR. MAURO:** -- Pilot Plant. Now they did use -
7 - and I reviewed the site profile. This
8 brought up -- by the way, I won't mention the
9 person's cancer, but it was denied. The -- I
10 have certain comments here, criticisms
11 regarding how the -- the doses were -- I'll --
12 I'll get -- I'll just paint the picture.
13 In this facility the person that was working
14 there was externally exposed because there was
15 airborne and deposited radioactivities of ur--
16 uranium on the ground. There were these things
17 called birdcages, which were these little --
18 these places where they stored the uranium --
19 uranium. They took -- they took these -- I
20 think this is the place where they took the
21 nickel -- the fusion barrier from gaseous
22 diffusion plants and they -- it was -- it was
23 contaminated with ur-- with uranium, enriched
24 uranium, recycled uranium, so we have a site
25 here now where the nature of the operation was

1 Oak Ridge would ship these nickel barriers to
2 this facility to pro-- separate out the -- the
3 uranium from the nickel -- the fusion barrier
4 and have -- and now we have the nickel, which
5 can be recycled and used to make more fusion
6 barriers, and the uranium, which -- which is a
7 valuable commodity, which was enriched in some
8 cases -- of course it was enriched 'cause it
9 was (unintelligible) of the fusion, some of it
10 was recycled so it had all the, you know, trace
11 levels of activation products. And so -- now -
12 - so now you have a guy that was working there
13 and -- and what's his exposure? He's exposed
14 to any airborne radioactivity, any deposit --
15 uranium that's deposited, and he's also exposed
16 because he's standing next to these birdcages
17 where, once you've separated the uranium out,
18 you put it in these little containers and these
19 birdcages were set up so that there wouldn't be
20 a criticality. You're probably familiar with
21 that.

22 **MS. MUNN:** Yes.

23 **DR. MAURO:** Okay. Now --

24 **DR. POSTON:** The birdcages are large.

25 **DR. MAURO:** They're -- yeah, they had a picture

1 of them, they're large. They're about five by
2 five -- I think it was five by five -- and
3 raised. And they're -- and now -- so that --
4 that's your setting. Okay?

5 Now we -- we -- I looked at that and said okay,
6 the -- I had a number of concerns regarding the
7 methods that were used to -- to reconstruct the
8 external exposure from the material that was on
9 the ground, the material that was airborne. We
10 could not match very well your birdcage
11 external exposure scenario, so we -- we had a -
12 - we had a -- we checked all these numbers. We
13 noticed that when you -- here -- so -- so from
14 a big picture, we had a little trouble matching
15 your numbers. We didn't get your same numbers
16 externally.

17 Internal, we had no serious problems. The way
18 we saw it was the -- this person's working the
19 early years and he's inhaling this material.
20 Now think of it like this. Is this -- they
21 have data where they measured the activity,
22 airborne radioactivity, and they have the data
23 for different time periods and different work
24 activities. Okay? So in other words, we have
25 a lot of data, so have lots of good data.

1 Problem is, I believe you folks used the full
2 distribution or the median for all this data.
3 But we have information from reading the CATI
4 that this guy had a job that placed him at --
5 in the refining section, I think it was called,
6 where he probably was at a location where he
7 wasn't an average kind of guy. He might have
8 been located someplace where he probably got
9 closer to the higher levels because of his job
10 description. In addition, the data that you
11 folks used was based on all the data that was
12 gathered over a number of years, the air
13 sampling data, when in fact this guy worked
14 very early on.

15 So what we did is we took all the data and said
16 well, listen, let's get rid of all the recent
17 data because that doesn't really apply to this
18 guy. Let's just look at the early data. And
19 the early data is a lot higher, so we -- we
20 came across pretty ser-- we -- we felt that
21 this was a -- some serious issues here in terms
22 of how this was done. And the main reason is,
23 we think that this guy's job was such that he
24 probably was more at the high end of the dust
25 loadings as opposed to the average.

1 And two, because of his job description -- and
2 -- and also we felt that the -- a lot of the
3 data was -- you used all the data as opposed to
4 making a segregation by time period. And if
5 you do segregate by time period, you can get
6 fairly higher exposures if you just use the
7 earlier time period.

8 And we had a third problem, you used the data
9 collectively and didn't make a distinction
10 between breathing zone versus general air and
11 you -- you know, from previous experience, if
12 you look at the breathing zone data, then
13 generally you get a little higher exposure.
14 So in the end, we think that -- that you
15 probably could have been a little bit more
16 claimant favorable, and that's my -- so now
17 I'll try to paint the picture.

18 **MR. ELLIOTT:** Wait a minute. Claimant
19 favorable or more technically accurate?

20 **DR. MAURO:** I think, given the uncertainties, I
21 would say claimant favorable as opposed to
22 techni-- in other words, I think that, given
23 the assumptions that were selected -- in other
24 words, using the full distribution of all the
25 data --

1 **MR. ELLIOTT:** Okay.

2 **DR. MAURO:** -- that -- that would have been --

3 **MR. ELLIOTT:** I understand. That helps me to
4 understand --

5 **DR. MAURO:** Yeah, yeah --

6 **MR. ELLIOTT:** -- where you're coming from.

7 **DR. MAURO:** -- yeah, the -- I think that in --
8 for this particular worker, given when he
9 worked and his job description, it seemed to us
10 that he may not have been like the average. He
11 may have been really a person that may have
12 been off to the higher range.

13 **MR. ELLIOTT:** Understood.

14 **UNIDENTIFIED:** (Off microphone) What process
15 was used to take the uranium (unintelligible)?

16 **DR. MAURO:** Well, they had their carbon
17 (unintelligible) process, they called it, or
18 carbon --

19 **MR. HINNEFELD:** Carbon (unintelligible).

20 **DR. MAURO:** -- carbon -- I believe the word was
21 carbon (unintelligible), and it was a special
22 chemical process that separated the uranium
23 from the --

24 **UNIDENTIFIED:** (Off microphone) So it was a
25 liquid?

1 **MR. HINNEFELD:** I think it was a gas.

2 **DR. MAURO:** I don't know.

3 **MR. HINNEFELD:** I think it was a gas, yeah.

4 **UNIDENTIFIED:** (Off microphone) That's why I'm
5 asking.

6 **MR. HINNEFELD:** Yeah, I think --

7 **UNIDENTIFIED:** (Off microphone) If it was
8 liquid, (unintelligible).

9 **MR. ELLIOTT:** It didn't destroy the barrier, it
10 just pulled the stuff out of the barrier.
11 Right? That's my understanding. And then they
12 reused the bar-- they retooled the barrier and
13 reused it.

14 **DR. MAURO:** They had --

15 **UNIDENTIFIED:** (Off microphone)
16 (Unintelligible)

17 **MR. GRIFFON:** Do we -- this gets into a site
18 profile question while you're looking
19 (unintelligible) there, but has a site profile
20 been issued on this yet or is it --

21 **MR. HINNEFELD:** (Unintelligible) there was --
22 there's been a site profile (unintelligible) --

23 **DR. MAURO:** This is -- yeah, this is --

24 (Whereupon, multiple participants spoke
25 simultaneously, rendering transcription of

1 individual comments impossible.)

2 **MR. HINNEFELD:** And it's in revision.

3 **MR. GRIFFON:** Oh, revision.

4 **MR. HINNEFELD:** Yeah, if you recall, there has
5 been another Huntington case reviewed early on
6 --

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

8 **MR. HINNEFELD:** -- and some of the similar
9 findings were raised there, maybe some
10 different ones to here, and so the revision now
11 I'll have to go incorporate -- you know, I'll
12 have to evaluate the findings from both the
13 reviews that have been done, so it -- it's --
14 the revision is not done to that site profile
15 but it is -- it's on our to-do list and it is
16 in revision.

17 **MR. GRIFFON:** Okay. All right, all right.

18 **DR. POSTON:** But you're -- you think it's a
19 gas?

20 **MR. HINNEFELD:** I'm -- it's been a long time
21 since I've looked at that. My understanding
22 was that it was the gas, that -- and I don't
23 even remember which way it worked. I think it
24 essentially reacted with the nickel, and so the
25 nickel went one way and anything that wasn't

1 nickel --

2 **MR. GRIFFON:** You would have had a nickel
3 (unintelligible).

4 **MR. HINNEFELD:** -- was left behind. I believe
5 that's -- I believe that's what it is, but it's
6 been a long time since I looked at the site
7 profile so I don't remember for sure. And then
8 the residue, which would have contained uranium
9 in some concentration, along with anything else
10 that wasn't nickel, that was stuck there with
11 the starting material, would be considerably
12 more concentrated than of course, you know, the
13 barrier was in terms of uranium per gram. So -
14 - and if I'm not mistaken, that was -- at least
15 at some point it was solid in something like a
16 powder or a granular material. That's --
17 that's what I've got in my brain, but like I
18 said, it's been a long time since I've looked
19 at this.

20 **DR. MAURO:** In fact, how it was done -- they
21 actually had measured the airborne nickel --

22 **MR. HINNEFELD:** Yeah, they measured airborne
23 nickel.

24 **DR. MAURO:** The nickel, and now on that basis
25 associated it with -- with uranium that --

1 'cause they knew the specific activity, how
2 much --

3 **MR. HINNEFELD:** Yeah.

4 **DR. MAURO:** -- how many -- how many grams of
5 uranium per gram of nickel --

6 **MR. HINNEFELD:** Right.

7 **DR. MAURO:** -- and there was a distribution, so
8 there wa--

9 **MR. GRIFFON:** Surrogate, maybe.

10 **DR. MAURO:** -- so there was airborne dust-
11 loading of nickel, so they measured air, so it
12 wasn't -- so -- yeah.

13 One last point --

14 **MR. ALLEN:** I think we used an upper end on
15 that uranium concentration, or enrichment, one
16 or the other.

17 (Whereupon, multiple participants spoke
18 simultaneously, rendering transcription of
19 individual comments impossible.)

20 **DR. MAURO:** Yeah, you used 39 percent, which is
21 very conservative and -- and my outcome on this
22 was well, you didn't take into consideration --
23 I believe there was rec-- the recycled, but
24 that's okay, because you -- if you were to
25 throw in the recycled components, it would have

1 added a little bit. But by using 39 percent
2 enrichment across the board, that more than
3 compensated for the fact that you may not have
4 used -- explicitly addressed the recycled, so
5 that's okay.

6 **MR. GRIFFON:** Doesn't that depend on the level
7 of the recycled isotope? I mean --

8 **DR. MAURO:** But the real re-- the real recycled
9 number, the average number, was much less than
10 39 percent, but they used 39 percent 'cause
11 that was for the upper end, I think, of the --
12 of the distribution of the amount of
13 enrichment.

14 **MR. GRIFFON:** But I'm talking about the
15 neptunium/plutonium issues --

16 **DR. MAURO:** Yeah, right --

17 **MR. HINNEFELD:** Their contribution would be
18 less --

19 **DR. MAURO:** Less than --

20 **MR. HINNEFELD:** -- if you --

21 **MR. GRIFFON:** But you examined that, though? I
22 haven't looked at this profile at all -- yeah.

23 **MR. HINNEFELD:** If you -- if you used a more
24 realistic (unintelligible) enrichment of
25 uranium, including (unintelligible) the

1 transuranics, which are (unintelligible) --

2 **DR. MAURO:** I -- I -- I mean we're coming --
3 we're walking away with this thinking the
4 internal dose may have been underestimated by
5 more than a hundred-fold --

6 **MR. HINNEFELD:** Internal or external?

7 **DR. MAURO:** -- so we're not talk-- the
8 internal, for the reasons I've --

9 **MR. HINNEFELD:** Oh, based on the air sampling,
10 not the --

11 **MR. GRIFFON:** Right.

12 **DR. MAURO:** For the reasons I've --

13 **MR. GRIFFON:** Not on this issue that we're just
14 talking about.

15 **DR. MAURO:** No, no, no, I'm sorry, no. But I
16 mean -- I'm just trying to say that this is not
17 a small thing.

18 **MR. GRIFFON:** Yeah.

19 **DR. MAURO:** We're not talking 20, 30 percent.

20 **MR. GRIFFON:** Well, now that we have sort of a
21 big picture, why don't we go through -- you
22 want to go through one by one or --

23 **DR. MAURO:** Sure.

24 **MR. HINNEFELD:** Well, I mean --

25 **MR. GRIFFON:** A lot of it -- a lot of it is

1 going to turn back to this -- now we have a
2 site profile and there's being a revised site
3 profile. Right?

4 **MR. HINNEFELD:** Yes, site profile is being
5 revised.

6 **MR. GRIFFON:** Because I see several of your
7 responses say, you know, if our revision --
8 pending our revision, we would correct this --
9 this case or -- or adjust this case.

10 **MR. ALLEN:** I think that's going to end up
11 being the answer on all of those.

12 **MR. GRIFFON:** Yeah.

13 **MR. HINNEFELD:** Yeah.

14 **MR. GRIFFON:** The only -- the only dilemma we
15 have, of course, is that we're not necessarily
16 reviewing the Huntington Pilot Plant site
17 profile, other than in this context. So I
18 think it comes back to this -- this
19 (unintelligible) --

20 **MR. HINNEFELD:** I think in terms of
21 (unintelligible) resolving these comments --

22 **MR. GRIFFON:** Yeah.

23 **MR. HINNEFELD:** -- that would be a key element
24 -- you know, that --

25 **MR. GRIFFON:** Right.

1 **MR. HINNEFELD:** -- we're looking at --

2 **MR. GRIFFON:** Right.

3 **MR. HINNEFELD:** -- the revised profile would be
4 a key element to this --

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

6 **MR. HINNEFELD:** -- (unintelligible) comment.

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

8 **DR. MAURO:** So it is a parking lot issue? That
9 is --

10 **MR. HINNEFELD:** No -- no, we'll -- we'll --

11 **MR. GRIFFON:** It's in this parking lot, though.

12 **MR. HINNEFELD:** -- we'll -- we owe a revised --

13 **DR. MAURO:** Okay.

14 **MR. HINNEFELD:** -- site profile.

15 **MR. GRIFFON:** Right.

16 **MR. HINNEFELD:** And either incorporation
17 comments or, you know, a resolution attempt at
18 the comments -- at each of the comments. Now
19 there are at least two Huntington Pilot Plant
20 cases that have been reviewed, so a resolution
21 of all the comments from both those reviews has
22 to accompany that -- you know, has to be part
23 of the revised (unintelligible).

24 **DR. WADE:** NIOSH will provide the revised site
25 profile. The subcommittee can decide if it

1 wants SC&A to review the revised site profile
2 relative to these comments, but this is the
3 matrix that will carry.

4 **MR. GRIFFON:** Yeah.

5 **MR. HINNEFELD:** Yeah.

6 **MR. GRIFFON:** Now so -- so having said that,
7 I'm not sure we have to go through one by one,
8 unless you want to go through these one by one.

9 **DR. MAURO:** That's why I like --

10 **MR. GRIFFON:** Yeah.

11 **DR. MAURO:** I think -- see what just happened?

12 **MR. GRIFFON:** Yeah, your 30-second -- I know,
13 (unintelligible).

14 **UNIDENTIFIED:** A little more than 30 seconds.

15 **DR. MAURO:** 30 seconds, we've got --

16 **MR. GRIFFON:** You've got to work on that 30
17 seconds. No, no, that was good. That was
18 good. I'm just -- yeah.

19 **DR. MAURO:** You know -- yeah, yeah, it's almost
20 like a picture in front of you, you can see
21 (unintelligible).

22 **MR. GRIFFON:** It works well for the --
23 especially for the AWEs (unintelligible) --

24 **DR. MAURO:** The AWEs -- it works for the AWEs.

25 **MR. GRIFFON:** So I'm going to say that -- that

1 NIOSH is in the process of revising the site
2 profile -- everybody's getting ready for lunch,
3 I think -- revising a site profile and they'll
4 -- they'll come back with their revision to
5 this subcommittee and to this process, because
6 we don't -- it -- it's not a site profile in
7 the way we think of a site profile review, it's
8 in this -- it's in this group.

9 **MR. HINNEFELD:** Right, and there are not a
10 zillion claims from this site, so it would be -
11 -

12 **MR. GRIFFON:** Right.

13 **MR. HINNEFELD:** -- probably fairly low on --

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

15 **MR. HINNEFELD:** -- site profile review priority
16 --

17 **MR. GRIFFON:** Exactly.

18 **MR. HINNEFELD:** -- task.

19 **MS. MUNN:** And ultimately, following that site
20 profile and the findings on it, it's going to
21 end up reported out in a PER anyway. Right?

22 **MR. HINNEFELD:** Yeah. Yeah, to the extent the
23 profile changes and -- and different approaches
24 are taken and the doses do in fact go up
25 because of the new approaches, then in fact

1 there would be a PER in the cases that were
2 done.

3 **MR. GRIFFON:** But I guess -- you -- you use --
4 I'd have to read through again, but I thought
5 you said pending that revision of the site
6 profile, it may go to a PER. Right?

7 **MR. HINNEFELD:** Yes.

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

9 **MS. MUNN:** If changes are made.

10 **MR. HINNEFELD:** Yes.

11 **MR. GRIFFON:** So we have to look at that
12 profile first in here and then it may go to a
13 PER, yeah.

14 **MS. MUNN:** Yes.

15 **MR. GRIFFON:** One other thing on this and then
16 we'll -- I think it's -- it would be a good
17 time to break for lunch, actually. The
18 question that John pointed out, and I'm not
19 sure where it occurs in the findings, but the -
20 - this question of general area air sampling
21 versus BZAs, I think that was one of our
22 overarching things, as well, wasn't it? Or was
23 it not?

24 **MR. ELLIOTT:** I don't think so.

25 **MR. GRIFFON:** The use or treatment of those

1 samples? No? Maybe I'm wrong.

2 **DR. MAURO:** We do have precedent --

3 **MR. GRIFFON:** I know we've discussed it before
4 many times.

5 **DR. MAURO:** We have, on a particular case --
6 not case, but there was a particular site
7 profile on -- where it was agreed that yeah,
8 we've got to make adjustments. I think it
9 actually came out of Bethlehem Steel.

10 **MR. GRIFFON:** I thought we had it at Bethlehem,
11 yeah. I thought --

12 **DR. MAURO:** In other words, when you have --
13 when you have breathing zone and you -- well,
14 you have general air samples, there is a
15 limitation there --

16 **MR. GRIFFON:** Yeah.

17 **DR. MAURO:** -- and -- and in the case of
18 Bethlehem Steel, they actually had data from
19 Simonds Saw where they had both breathing zone
20 and general --

21 **MR. GRIFFON:** Right.

22 **DR. MAURO:** -- and they saw there was about an
23 eight-fold difference. So we say okay -- and -
24 - and it turns out at Bethlehem Steel it was
25 predominantly --

1 **MR. GRIFFON:** General.

2 **DR. MAURO:** -- general, so -- and --

3 **MR. GRIFFON:** So they added a factor, yeah.

4 **DR. MAURO:** -- so they added a factor in there
5 and that --

6 **MR. GRIFFON:** But then I thought Jim off--
7 offered that they might look at this as a
8 generic issue --

9 **DR. MAURO:** Maybe a generic --

10 **MR. GRIFFON:** -- but maybe I'm wrong, I --

11 **MR. ELLIOTT:** Well, I don't think it's on the
12 list. I'm not saying it shouldn't be or not
13 saying it shouldn't be looked at, I just don't
14 think it's on the list that he's --

15 **MR. GRIFFON:** Well, we -- we can always --

16 **MR. ELLIOTT:** -- reporting --

17 **MR. GRIFFON:** -- bring that up in the
18 discussion with Jim at the next meeting.

19 **DR. WADE:** When Jim presents in May, you can
20 raise this issue.

21 **MR. GRIFFON:** All right. Good enough for now.
22 Okay then, I think -- let's -- if everybody is
23 set, pencil it off at 85 and we'll pick it up
24 after lunch.

25 **DR. WADE:** Just a little bit of housekeeping.

1 continue there. John, 30-second synopsis?

2 **DR. MAURO:** Yeah, 30 second -- Superior Steel,
3 rolling mill operation, uranium. The person
4 was denied. Okay? His cancer was denied. We
5 -- they -- they do have a, you know, site
6 profile, exposure matrix, that we reviewed
7 carefully and they basically visualized that
8 the person's again exposed to activity deposit
9 on surfaces, dust that deposited, and the way
10 they -- the approach they used for estimating
11 that exposure from activity that was sort of on
12 surfaces we concur completely with because it
13 was based on air survey data collected at
14 Simonds Saw where the dust loading on surfaces
15 was much worse, and so they -- the folks
16 decided well, let's just use the Simonds Saw
17 external dosimetry, film badge data, to
18 characterize that exposure pathway and apply it
19 here. That -- you know, that certainly is
20 claimant favorable.

21 We -- the other exposure this person's
22 experienced was that -- they produced these
23 slabs and plates of uranium they rolled, and
24 the person spent time next to it. We went
25 ahead and reviewed the model. We have two

1 findings that were regarding how you folks came
2 at the problem. One is our calculations come
3 in at a lower dose, so we think you folks may
4 have overestimated the -- the exposures and we
5 don't know why. We looked at the X-ray
6 exposure; everything was fine there. We looked
7 at the internal exposure that was assumed.
8 Lots of data, looked at all these data from the
9 -- during operations dust is being generated.
10 You have lots of data. Looked at it. You
11 picked an upper 95th percentile during the
12 rolling operation as being the dust that this
13 person was exposed to, right on the button, no
14 problem whatsoever with that. The other place
15 we looked at, though, was how you modeled the
16 res-- internal exposure from resuspension, and
17 you used ten to the minus six resuspension
18 factor. I guess we were a little bit concerned
19 that that strategy -- that ten to the minus six
20 might be -- given the nature of the working
21 operation, may not be as claimant favorable as
22 it could be. Finally, the ingestion pathway is
23 the same old same old, you know, that recurring
24 story about how to do the -- you know, the
25 ingestion modeling. And I think that's my 30-

1 second sound bite.

2 **MR. HINNEFELD:** Okay. Well, I guess -- now you
3 say for finding 85.1 your finding is you felt
4 like our doses were higher than yours?

5 **DR. MAURO:** Yeah, in other words, we -- we came
6 up with -- our model gave 50 percent lower
7 doses for the small -- oh, for the small plate,
8 and we came in higher for the large plate.

9 **MR. HINNEFELD:** Okay.

10 **DR. MAURO:** In other words, we didn't match
11 your numbers and one -- for the -- there was a
12 large plate and a small plate.

13 **MR. HINNEFELD:** Yeah.

14 **DR. MAURO:** One we got higher results, and we -
15 - we (unintelligible) do it differently than
16 you. We --

17 **MR. HINNEFELD:** Right.

18 **DR. MAURO:** -- run (unintelligible) and you
19 folks run Attila, I believe, or -- I'm not sure
20 --

21 **MR. HINNEFELD:** I'm not sure which one we did
22 on this. We do have Attila, but I'm not sure
23 which we used on this.

24 **DR. MAURO:** Yeah, well, I mean we run it and we
25 -- we -- we're close. I mean within a factor

1 of two.

2 **MR. HINNEFELD:** Yeah, as I -- as I recall, we
3 used existing runs that had been done on a
4 somewhat different geometry, and you modeled
5 the geometries as they were at the site.

6 **DR. MAURO:** As best we can tell from the
7 information in the report.

8 **MR. HINNEFELD:** And we put in -- you know, in
9 our initial response -- some supporting
10 information about the magnitude of the doses.
11 I mean these were pretty high external doses
12 that were being assigned for a uranium handling
13 plant, you know, comparing to some other types.
14 In fact, I even put in Fernald just because I'm
15 familiar with, you know, a site that handled a
16 lot of uranium, people were working close by to
17 -- to a lot of uranium and throughout the 1980s
18 when there was the production buildup, I don't
19 think there was ever a reported dose --
20 certainly it didn't come close to two rem a
21 year, more -- more on the order of one rem sort
22 of being the upper bound of what anybody was
23 exposed to from penetrating radiation in a
24 year, and this distribution allows -- in the
25 95th percentile goes up to like four -- four

1 rem a year. So we felt like it was
2 sufficiently high, you know, despite some
3 perhaps differences in the model, you know, and
4 source term starting point.

5 **DR. MAURO:** Well, we just took your -- we just
6 took your -- what was in your report.

7 **MR. HINNEFELD:** Right.

8 **DR. MAURO:** This is what you did, and we said
9 okay, let's see if we can match your numbers.
10 We didn't look -- in other words, what I'm
11 hearing is that -- that you have other sources
12 of information regarding what the external
13 radiation should be --

14 **MR. HINNEFELD:** Yeah.

15 **DR. MAURO:** -- and it is compatible with what
16 you found. All we did was take your list of
17 assumptions regarding --

18 **MR. HINNEFELD:** Yeah.

19 **DR. MAURO:** -- time of exposure, proximity,
20 dimensions --

21 **MR. HINNEFELD:** Right.

22 **DR. MAURO:** -- run MCNP, see if we can match
23 your numbers and we didn't quite get your
24 numbers.

25 **MR. HINNEFELD:** Yeah.

1 **DR. MAURO:** As simple as that. If there are
2 other reasons --

3 **MR. HINNEFELD:** Uh-huh.

4 **DR. MAURO:** -- why you believe the numbers you
5 used, from other experience, that you feel
6 justifies using the numbers you used, that --
7 that's fine. That would --

8 **MR. HINNEFELD:** Okay.

9 **DR. MAURO:** -- might be the answer.

10 **MR. HINNEFELD:** Okay. Well, we could probably
11 put something together more than what we have
12 here in terms of whether -- you know, either in
13 support -- you know, additional information in
14 support or an alternative look at this. Okay?
15 This could be something we could owe a written
16 product on then.

17 **MR. GRIFFON:** A written product? Is there any
18 -- for Superior Steel, is there any site
19 profile or --

20 **MR. HINNEFELD:** Yeah.

21 **DR. MAURO:** Yeah.

22 **MR. GRIFFON:** There is a site profile?

23 **DR. MAURO:** That's (unintelligible) we worked
24 (unintelligible) site profile.

25 **MR. GRIFFON:** And then this description of the

1 -- how this photon dose with the mean of .4 to
2 a 95th at four rem, that's described in the
3 site profile?

4 **MR. HINNEFELD:** Yeah. Yeah. That's where I
5 got it from.

6 **MR. GRIFFON:** Yeah.

7 **DR. MAURO:** Okay, I guess -- we didn't come --
8 it might be correct, but my recollection was
9 that we were based on -- not on empirical data.

10 **MR. HINNEFELD:** No, it wasn't measured -- it's
11 not based on empirical measured data. It's
12 based on, as you said --

13 **DR. MAURO:** A model.

14 **MR. HINNEFELD:** -- of source term dose rate --

15 **DR. MAURO:** Okay.

16 **MR. HINNEFELD:** -- and some presumptions about
17 amount of time.

18 **DR. MAURO:** Okay.

19 **MR. HINNEFELD:** You know, a certain -- certain
20 amount of time was chosen, I think to model the
21 median, and a different amount of time was
22 chosen to model the 95th percentile. And based
23 on that, these were essentially the parameters
24 of the -- of the distribution of the dose
25 assigned, and we believe we can come up with

1 supporting information that illustrates, for
2 uranium handling plants --

3 **DR. MAURO:** Okay.

4 **MR. HINNEFELD:** -- these are pretty
5 conservative estimates of external dose.

6 **MS. MUNN:** So doesn't that essentially mean
7 your response to items one, two and three are
8 reasonable and acceptable? Or does that not
9 mean so?

10 **MR. GRIFFON:** I -- well, I don't -- I -- I'm
11 just asking where this came -- you know, he --
12 I think you're saying it's consistent with
13 other plants, but --

14 **MR. HINNEFELD:** Yeah.

15 **MR. GRIFFON:** -- I mean I don't -- that's not
16 in the site profile or not? I think we --

17 **MR. HINNEFELD:** I mean it's -- it's -- it's --
18 it would be a straightforward matter for us, I
19 think, to compile other information that would
20 support -- or at least support the indication
21 that these -- this dose rate distribution is --
22 is probably favorable to the people who worked
23 at that site. I think we can do that. And the
24 -- or -- or we could do -- I mean we can do
25 other things, as well. We'll just have to see

1 what comes out of the (unintelligible)
2 evaluation of what we provide, but I -- I would
3 think that we can come up with additional
4 evidence because when you -- when you model a
5 source term, you know, we put a source term
6 dose rate -- you know, MCMP* or, you know,
7 correct geometry or incorrect geometry, the --
8 the real key element of what dose you assign is
9 what are your presumptions about proximity to
10 that source. And so we think there's
11 supporting information from similar type of
12 facilities, or at least facilities that handled
13 similar material, uranium metal, that would
14 support a -- a dose right -- you know, a dose
15 in the neighborhood of what we
16 (unintelligible).

17 **DR. MAURO:** There's no doubt, because as I
18 said, we came in within -- within a factor of
19 two of your plate and -- and the slab, using
20 what we understood was your model.

21 **MR. HINNEFELD:** Right.

22 **DR. MAURO:** Now as far as I'm concerned, that's
23 one way to come at it. But if you also have
24 data from -- where other -- out of the sites
25 where they measured the radiation fields that -

1 - that -- say -- was -- you know, I could
2 certainly -- the uncertainty in these kinds of
3 calculations would be met, you know, within a
4 factor of two.

5 **MR. GRIFFON:** I think it might be useful for
6 several other sites, too, you have -- to have
7 that piece available, sort of like we had for
8 Chapman Valve where all -- all the other
9 machining references that we had to show that,
10 you know, these numbers that we calculated for
11 Chapman Valve intakes were consistent with
12 other types of uranium machining operations,
13 yeah, so it's -- it's -- yeah. So you'll give
14 us a written --

15 **MR. HINNEFELD:** Yeah, we'll have a written
16 (unintelligible).

17 **MR. GRIFFON:** -- written response.

18 **MR. HINNEFELD:** 85.2 is a dose due to
19 resuspension.

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

21 **MR. HINNEFELD:** Isn't resuspension one of the
22 overarching issues, along with ingestion, or is
23 it just ingestion?

24 **MR. GRIFFON:** I think it's -- I think it's
25 both, but I could be wrong.

1 **DR. MAURO:** No, in this case -- no, in this
2 case it was something a little different. You
3 had two alternative strategies for dealing with
4 resuspension. One is you had some wipe
5 samples.

6 **MR. HINNEFELD:** Uh-huh, yeah.

7 **DR. MAURO:** Okay? You have data. And also you
8 had information on the radiation
9 (unintelligible) MR per hour, if you get -- it
10 was actually the radiation reading. What -- as
11 I understand it is for the purpose of doing the
12 external exposure from the positive activity,
13 you worked with this survey reader reading --

14 **MR. HINNEFELD:** Dose rate (unintelligible),
15 okay.

16 **DR. MAURO:** -- which if you went with -- didn't
17 use that, but went with the swipe sample and
18 then back-calculated over -- given that
19 activity on the surface, what would -- there --
20 you know, Federal Guidelines Report No. 12 say
21 --

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

23 **DR. MAURO:** -- is the airborne dose, you would
24 have come up with a much lower dose.

25 **MR. HINNEFELD:** Okay.

1 **DR. MAURO:** So for the purpose of external
2 exposure, you went with the survey reading --

3 **MR. HINNEFELD:** Okay.

4 **DR. MAURO:** -- and we're fine with that.

5 **MR. HINNEFELD:** Okay.

6 **DR. MAURO:** But then when it came to doing the
7 resuspension/inhalation exposure, you didn't
8 use the survey -- see, in theory, you could
9 have used the survey (unintelligible) then, the
10 reading, back-calculated what that might mean
11 in terms of surface contamination --

12 **MR. HINNEFELD:** Right.

13 **DR. MAURO:** -- and then do a resuspension
14 model. You didn't do that, and when it came to
15 the resuspension, you used the wipe sample. So
16 it's almost like you used two different
17 strategies and I -- I guess -- and the latter,
18 based on the wipe sample, does -- would -- does
19 come up with a substantially lower inhalation
20 exposure than if you went the other route. I
21 don't know if you're following all that --

22 **MR. HINNEFELD:** Yeah, and -- and -- but in
23 fact, I mean wouldn't resuspension be more
24 dependent on a removable --

25 **DR. MAURO:** Yeah --

1 **MR. HINNEFELD:** -- that -- what you'd measure
2 on a smear than it would with a surveying
3 (unintelligible)?

4 **DR. MAURO:** Yeah.

5 **MR. HINNEFELD:** You know, from -- just on the
6 face of it from that standpoint, I would think
7 the removable contamination --

8 **DR. MAURO:** Would be a better --

9 **MR. HINNEFELD:** -- would be more contributive -
10 -

11 **MR. GRIFFON:** Seems more appropriate, yeah,
12 yeah.

13 **DR. MAURO:** Yeah, I can't argue with that.

14 **MR. GRIFFON:** Right, then --

15 **MR. HINNEFELD:** So did you want anything
16 additional here, or --

17 **MR. GRIFFON:** The only thing I want -- I just
18 want clarification on -- when you say relying
19 on survey meters, I'm not -- I didn't review
20 this case, but relying on a survey meter --

21 **MR. HINNEFELD:** I believe it was there. Right?

22 **DR. MAURO:** Oh, was that -- that's --
23 (Whereupon, multiple participants spoke
24 simultaneously, rendering transcription of
25 individual comments impossible.)

1 **MR. GRIFFON:** So you have site data? Okay.

2 **DR. MAURO:** Oh, yeah, that was what --

3 **MR. HINNEFELD:** Yeah, this is one of the AWES
4 where there is pretty health site data.

5 **DR. MAURO:** Oh, yeah, absolutely.

6 **MR. GRIFFON:** So you don't have film badge
7 data, but you have some --

8 **MR. HINNEFELD:** I guess not. I don't -- you
9 know, there's not --

10 **DR. MAURO:** (Unintelligible) survey meter.

11 **MR. GRIFFON:** Okay.

12 **MR. HINNEFELD:** (Unintelligible) dose rate
13 (unintelligible) --

14 **MR. GRIFFON:** I'm assuming from 85 1 that you
15 don't have any --

16 **MR. HINNEFELD:** It sounds like we don't have --
17 don't have film badge records like we have --
18 like at Chapman Valve.

19 **MR. GRIFFON:** But you have a lot of maybe
20 survey data or something like that.

21 **MR. HINNEFELD:** You know, I'm not very familiar
22 with --

23 **MR. GRIFFON:** Okay, (unintelligible).

24 **DR. MAURO:** Yeah, there's (unintelligible).

25 **MR. GRIFFON:** It sounds like we're okay. I was

1 just curious from the -- if it was site-
2 specific --

3 **DR. MAURO:** I only brought it up in terms of --
4 well, you're right, if -- if you're going to do
5 resuspension and you're trying to say okay,
6 let's forget what might have been resuspended,
7 if you -- swipe data is probably your
8 (unintelligible).

9 **MR. HINNEFELD:** Okay. And then 85.3 is post-
10 operation inhalation exposure to suspended dust
11 may have been underestimated. And I guess I'm
12 at a little disadvantage here 'cause I'm not
13 completely conversant on this -- on this case
14 or on Superior Steel.

15 **DR. MAURO:** The only point we're making, again,
16 is -- okay, let's -- let's say we're starting
17 with -- there was a two-pronged concern.

18 **MR. HINNEFELD:** Yeah.

19 **DR. MAURO:** One is you based on a swipe, and
20 I'm -- I'm okay with that. But then you
21 applied a ten to the minus six resuspension
22 factor --

23 **MR. HINNEFELD:** Oh, the ten to the minus six.

24 **DR. MAURO:** Right, and -- and I -- we had an
25 attachment in the back -- the ten to the minus

1 six, and this is really a judgment call,
2 probably is -- is not unrealistic, but there's
3 certain laws of evidence -- you know, if you're
4 walking around the site and you're -- there's
5 physical -- people are walking around, keeping
6 things up, you can easily (unintelligible) ten
7 to the minus four. Ten to the minus six is
8 probably toward the low end, and that was the
9 point.

10 **MR. HINNEFELD:** Okay. I mean --

11 **MR. GRIFFON:** It may be a generic resuspension
12 question, too. I think we've had --

13 **DR. MAURO:** Oh, yeah --

14 **MR. GRIFFON:** -- in our generic discussions --

15 **DR. MAURO:** -- DTRA -- DTRA --

16 **MR. GRIFFON:** -- this come up before.

17 **DR. MAURO:** -- just for your information, DTRA
18 had researched this for their purposes -- you
19 know, for their veterans, and they settled in
20 on ten to the minus five. That's outdoors.

21 **MR. GRIFFON:** Outdoors.

22 **DR. MAURO:** Here -- here I would say -- you
23 know, if you do a deposited uranium dust on the
24 surfaces and people are walking around and, you
25 know -- and there's a potential to have a

1 little bit more resuspension -- lots and lots
2 of literature on resuspension factors. You may
3 want to take a look --

4 **MR. HINNEFELD:** Yeah.

5 **DR. MAURO:** -- at that ten to the minus six and
6 see if you're comfortable with
7 (unintelligible).

8 **MR. HINNEFELD:** Okay.

9 **MR. GRIFFON:** And then --

10 **DR. MAURO:** I felt that --

11 **MR. GRIFFON:** -- I would propose --

12 **DR. MAURO:** -- you were too low.

13 **MR. GRIFFON:** -- that that be done in that
14 generic --

15 **DR. MAURO:** Yeah, that would be the place to do
16 it --

17 **MR. GRIFFON:** -- the overarching -- I believe
18 we did ask for a response overarching.

19 **MR. HINNEFELD:** My recollection is that
20 resuspension is one of the overarching --

21 **MR. GRIFFON:** Yeah --

22 **MR. HINNEFELD:** -- issues and --

23 **MR. GRIFFON:** -- I'm pretty sure --

24 **MR. HINNEFELD:** -- so is --

25 **MS. MUNN:** Yes, it is, in fact.

1 **MR. HINNEFELD:** So we can --

2 **MR. GRIFFON:** Handle that that way.

3 **MR. HINNEFELD:** -- handle that there, probably.
4 Okay.

5 **MR. GRIFFON:** Now as far -- and John, you're
6 comfortable with the -- the use of the site
7 data, though? Seems like they're using -- it's
8 not really a median, but with a high GSD, you
9 know.

10 **DR. MAURO:** From the swipes --

11 **MR. GRIFFON:** Yeah.

12 **DR. MAURO:** -- what the -- I thought you took
13 the high end. I -- I'm not sure.

14 **MR. HINNEFELD:** I don't recall, sitting here.
15 I -- I'm just not familiar with Superior Steel.

16 **DR. MAURO:** My recollection is you picked a
17 high value for the swipe data, not the -- let -
18 - let -- maybe (unintelligible) --

19 **MR. HINNEFELD:** Do you guys know?

20 **MR. SIEBERT:** I believe that's correct, yeah.

21 **DR. MAURO:** You did use the high value. Right?
22 Or did you use the median?

23 **MR. SIEBERT:** It was -- no, I believe we used
24 the max removable contamination.

25 **DR. MAURO:** That's what I remember, too, yeah.

1 (unintelligible) -- see if the resuspension
2 model is (unintelligible).

3 **MR. GRIFFON:** Probably not much.

4 **DR. MAURO:** Zero.

5 **MR. GRIFFON:** Zero, there you go.

6 **DR. MAURO:** (Unintelligible) off to zero.

7 **MR. GRIFFON:** So we're not going to worry about
8 that.

9 **DR. MAURO:** (Unintelligible)

10 **MR. GRIFFON:** All right. But we still have
11 that generic question of the --

12 **MR. HINNEFELD:** There's still the generic issue
13 (unintelligible) --

14 **MR. GRIFFON:** -- one (sic) to the minus six,
15 yeah.

16 **MR. HINNEFELD:** -- sure.

17 **MR. GRIFFON:** Okay.

18 **MR. HINNEFELD:** 85 -- 85.4 questions the method
19 for internal doses associated with inadvertent
20 ingestion. Okay, this would be ingestion
21 generic issues.

22 **DR. MAURO:** Yeah.

23 **MR. GRIFFON:** Right.

24 **DR. MAURO:** Yeah, (unintelligible).

25 **MR. HINNEFELD:** And 85.5 is -- questions the

1 basis for the plutonium-239 and 237 activity
2 fractions, and I didn't put an initial response
3 in here, I think in large part because it's
4 hard for me to believe that they have
5 (unintelligible). We don't have evidence that
6 there was recycled uranium sent to this place.
7 The reason it's included in the site profile is
8 that the Department of Energy didn't really
9 track in particular their uranium as recycled
10 or not recycled, so when they would have a
11 contractor provide uranium to an AWE, it's a --
12 **DR. MAURO:** Well, I think you did include --
13 **MR. HINNEFELD:** We included some.
14 **DR. MAURO:** -- included it, and without any
15 reference to why the particular --
16 **MR. HINNEFELD:** Those values were chosen?
17 **DR. MAURO:** -- (unintelligible) --
18 **MR. GRIFFON:** Right, where'd you --
19 **MR. HINNEFELD:** I can -- I suppose I could find
20 those -- those references, and I -- I ga-- I
21 think I ran out of time is why I --
22 **MR. GRIFFON:** Yeah.
23 **MR. HINNEFELD:** -- didn't actually get in--
24 **DR. MAURO:** We -- we -- we -- I didn't tur-- we
25 -- in theory, I could have asked some of -- you

1 know, we did look at recycled uranium for Y-12.

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

3 **DR. MAURO:** In theory I could have turned some
4 folks on to take a look, are these good
5 numbers. I didn't do that. I just simply
6 said, you know, you gave the percentages or --

7 **MR. GRIFFON:** Yeah.

8 **DR. MAURO:** -- parts per million you used --

9 **MR. GRIFFON:** Where did these come from, yeah.

10 **DR. MAURO:** -- with-- without giving a
11 reference.

12 **MR. GRIFFON:** Yeah.

13 **MR. HINNEFELD:** Okay.

14 **MR. GRIFFON:** That's all we -- that's all we
15 need.

16 **MR. HINNEFELD:** Well, we should be able to
17 provide the source information.

18 **MR. GRIFFON:** Yeah.

19 **MR. HINNEFELD:** Okay, then -- that's it for 85
20 -- 86 is a Linde Ceramics case.

21 **MR. GRIFFON:** John, you're on.

22 **DR. MAURO:** Okay. Ah, this was an interesting
23 one, and I think that this is a -- what we have
24 here is a worker that worked at Linde --
25 there's an exposure matrix for Linde so it's

1 not OTIB-04. Now the work -- now during -- at
2 Linde you can think in terms of there were the
3 -- an operation period where there was lots of
4 stuff going on. You know, they were -- all
5 sorts of uranium chemistry. But then there was
6 a cleanup period and then there was a post-
7 cleanup period. This particular worker was
8 there during the cleanup period. Okay? And
9 during that time, he was involved -- and I
10 don't know if I could speak to this -- he was a
11 welder, and in effect what happened here is you
12 had lots of data regarding external exposures.
13 There was -- there was lots of data. Matter of
14 fact, there was tables upon tables of data.
15 And you went ahead and picked some value. But
16 from reading his CATI -- we're talking external
17 exposure now -- from reading his CATI, it
18 appears that he was working very closely with
19 non-destructive testing people who were
20 involved in X-rays. You know, this was -- he
21 was a welder and -- and -- and there -- and so
22 his job, the way I sort of visualize it, here's
23 a guy who was up close and personal to the
24 pipes where he was doing welding operation.
25 And after the welding operation there's --

1 there's non-destructive testing, sort of like
2 went hand in hand. And so he may have gotten
3 exposures which were a lot different than let's
4 say your typical worker in the plant involved
5 in cle-- involved in the cleanup operation, I'm
6 not sure. So my question is, with regard to
7 the external exposure, using the median value
8 of the distributions would certainly be
9 reasonable for a worker that worked on cleanup
10 and worked throughout the facility and got a
11 little bit -- some places were high, some
12 places were low. In this case it looks like we
13 have a worker, though, his nature of his job
14 was a welder where he's up close and personal
15 to the piping doing his job, and I assume --
16 and I might have assumed incorrectly -- that
17 hand in hand of goes with welding is non-
18 destructive X-ray test-- testing, they're going
19 together. And he may have gotten -- may have
20 been involved in that part of -- also.

21 **MR. HINNEFELD:** Well, I --

22 **DR. POSTON:** I would assume --

23 **DR. MAURO:** I don't know.

24 **DR. POSTON:** I would assume there was a
25 qualified radiographer there.

1 **UNIDENTIFIED:** Yeah.

2 **DR. POSTON:** Welders don't do radiography.

3 **DR. MAURO:** And the wel-- and the welder would
4 have been -- yeah. But there was something in
5 the CATI to that effect --

6 **MR. HINNEFELD:** Well --

7 **DR. MAURO:** -- and that's why we brought it up.

8 **MR. HINNEFELD:** -- I took a -- I took brief
9 read of the CATI and I guess I could have
10 missed something. I didn't see anything that
11 would indicate to me that he was routinely
12 engaged in radiographic examination of welds.
13 I know a lot of welds are done without
14 radiographic examination.

15 In addition to -- the point that -- since he
16 was hired in during the cleanup period, when
17 they were cleaning up the uranium work, a
18 welding activity in a cleanup -- in my
19 experience, a welding activity in a cleanup
20 experience is to cut the metal (unintelligible)
21 --

22 **DR. MAURO:** Cut the metal and you don't -- and
23 you're not putting it back together.

24 **MR. HINNEFELD:** -- and you're not putting it
25 back together and you're not worried about the

1 quality of the weld 'cause you're essentially
2 cutting the metal so you can throw it away.

3 **DR. MAURO:** Yeah.

4 **MR. HINNEFELD:** He did say in his CATI -- or
5 his CATI, I don't know if it was his or a
6 survivor CATI, but the CATI did talk about his
7 work on gas storage cylinders, which is apart
8 from the Linde radiological work. So quite
9 likely as -- during the cleanup period, or
10 after -- 'cause he worked well after that, too,
11 at Linde -- he was involved in the installation
12 of gas storage cylinders for remaining Linde
13 tasks, because I believe it actually turned
14 into a -- an industrial gas supplier. That was
15 either part of that -- their business or that
16 was their later business. Isn't that true?

17 **UNIDENTIFIED:** (Unintelligible) year.

18 **MR. HINNEFELD:** But it was -- so it was indus--
19 industrial gas supplier?

20 **UNIDENTIFIED:** Uh-huh.

21 **MR. HINNEFELD:** And so in all likelihood, if
22 there were welding that he did that ultimately
23 was examined and tested --

24 **DR. MAURO:** It wasn't on this.

25 **MR. HINNEFELD:** -- it would have been the later

1 part --

2 **DR. MAURO:** Okay.

3 **MR. HINNEFELD:** -- of the exposure when they --
4 when they were preparing for that kind of work.
5 So that was my judgment when I read -- when I
6 read the case and I read the finding, I said I
7 just don't see that -- the connection here on
8 why we should take this person to be exposed to
9 radiographic examination of welds.

10 **MR. GRIFFON:** Aren't -- aren't there two
11 Lindes? There -- there -- (unintelligible) --

12 **MR. HINNEFELD:** This is -- yeah, there are two
13 Linde locations. One's in Buffalo and ones in
14 -- Tonawanda?

15 **MS. BRACKETT:** Tonawanda.

16 **MR. HINNEFELD:** -- Tonawanda. This is -- Linde
17 Ceramic is the Tonawanda site. It was the site
18 that did in fact do --

19 **MR. GRIFFON:** And I thought the other one was
20 the one that went to gas as -- I -- I may be
21 wrong (unintelligible).

22 **MR. HINNEFELD:** I thought -- I thought both
23 did. Am I wrong on that?

24 **MS. BRACKETT:** I'm not certain. I think it's a
25 very large company, so I don't know --

1 **MR. HINNEFELD:** It was a division of Union
2 Carbide at that time.

3 **DR. MAURO:** It was -- yeah, the ceramics, and
4 Ton-- Tonawanda was more the research arm, I
5 think, and Linde was the production arm. Now
6 (unintelligible) --

7 **MR. HINNEFELD:** Well, there was -- there was a
8 -- at Tonawanda there was a sort of a pilot
9 plant --

10 **DR. MAURO:** Yeah, (unintelligible).

11 **MR. HINNEFELD:** -- and then there was a
12 ceramics plant and -- that -- and they were
13 already -- Linde was already working with
14 uranium as coating -- colors -- you know,
15 colors and glazes --

16 **DR. MAURO:** Right.

17 **MR. HINNEFELD:** -- during World War II. And so
18 very early on the government relied on Linde as
19 a uranium product-- producer for Manhattan
20 Project. So very early on it was -- it got
21 very quickly involved in the Manhattan Project
22 uranium work. And then -- but that work kind
23 of ended. I think they were done with their
24 uranium work for the government by say about
25 '52 or something, and this person hired in

1 during the cleanup. There was a -- like a two
2 or three-year cleanup --

3 **DR. MAURO:** That's right.

4 **MR. HINNEFELD:** -- and then -- and then the
5 site was turned over -- from a government site,
6 it was turned over to Linde for ownership at
7 that point. So this person hired in during the
8 cleanup period and -- and just based on the --
9 you know, when he was hired, the nature of his
10 -- and -- and the -- what kind of operations
11 would have been going on in the radiological
12 area at that time, they were cleaning it up, we
13 just didn't see that there's, you know, much of
14 an evidence for the --

15 **DR. MAURO:** Yeah.

16 **MR. HINNEFELD:** -- non-destructive testing.

17 **DR. MAURO:** The -- the post-- he was there for
18 post-cleanup operations, and there's -- now
19 there's no doubt that the exposures from the
20 post-- after the cleanup are just negligible.

21 **MR. HINNEFELD:** Okay.

22 **DR. MAURO:** I mean we may have had some
23 comments here on the methods used. For
24 example, when -- when you folks modeled the
25 post-cleanup portion -- let me see, I -- I

1 don't believe you included some of the progeny
2 -- you know, the -- see, at Linde, unlike a lot
3 of other sites, you've got the whole litany of
4 radionuclides. You know, you've got the
5 raffinates --

6 **MR. HINNEFELD:** Yes, yes, early on.

7 **DR. MAURO:** -- you've got -- you've got to have
8 -- you know, it's not just uranium.

9 **MR. HINNEFELD:** Yes.

10 **DR. MAURO:** And -- okay. All right, let -- let
11 me go -- give -- give me a second here.

12 (Pause)

13 We just left the external. Sounds like
14 external -- position being well, listen, he may
15 have done some cutting as a welder, but perhaps
16 they -- he was not involved with any non-
17 destructive testing. That was our only
18 concern.

19 **MR. HINNEFELD:** Okay.

20 **DR. MAURO:** And if that's the case, that's the
21 case and that's the end of that problem.

22 **MR. HINNEFELD:** Okay.

23 **DR. MAURO:** With regard to internal, what was
24 done was you assumed this person was exposed
25 chronically to 33 MAC -- 33 MAC is the highest

1 daily weighted average dust loading observed at
2 Linde amongst a bunch -- a lot of measurements
3 made, absolutely good number. And it also is
4 considered to be representative of the
5 breathing zone, and it also included progeny.
6 So -- let me see, so 33 MAC, that's -- that's a
7 good number. We have -- we're fully supportive
8 of using 33 MAC as your default value for
9 (unintelligible) as a -- as a plausible
10 (unintelligible). And including the progeny.
11 No -- the only thing -- I guess the only
12 criticism we had regarding the -- that portion
13 -- that is, during the cleanup and the 33 MAC -
14 - I think you were silent regarding raffinates
15 and any exposures he may have experienced from
16 raffinates.

17 **MR. HINNEFELD:** Okay.

18 **DR. MAURO:** So it may be worth exploring that
19 but (unintelligible) that could have
20 contributed -- 'cause this person was denied,
21 and our experience from other sites is that
22 sites like this where there are -- there's a
23 lot of processing going on, there are
24 raffinates, and very often the thorium and the
25 radium are separated, concentrated, and could

1 be an important contributor to exp-- intake.
2 So there's no doubt that the 33 MAC was up
3 there for uranium, but I think that may be -- I
4 believe you're silent in this one on --
5 regarding raffinates.

6 **MR. HINNEFELD:** Okay.

7 **MR. GRIFFON:** Is this the Linde that's
8 currently in site profile review, or is it the
9 other Linde?

10 **MR. HINNEFELD:** This is the one site profile
11 (unintelligible).

12 **DR. MAURO:** This is -- yeah, this is...

13 **MR. GRIFFON:** 'Cause I'm wondering if that
14 could be taken --

15 **DR. MAURO:** Oh, yeah.

16 **MR. GRIFFON:** -- up there or --

17 **DR. MAURO:** Yeah -- yeah -- yeah, that -- that
18 was one of our findings in the --

19 **MR. GRIFFON:** Would be appropriate. Right?

20 **DR. MAURO:** That's -- that's an issue, yes.
21 You could -- this could -- this issue --

22 **MR. GRIFFON:** There's a wor-- there's a
23 workgroup established on Linde -- right? -- and
24 there's a -- is there actually -- is there an
25 SEC?

1 **MR. HINNEFELD:** There is an SEC for early years
2 at Linde.

3 **DR. MAURO:** Early years.

4 **MR. GRIFFON:** Oh, for early years.

5 **DR. MAURO:** And I believe that there --

6 **MR. HINNEFELD:** Internal monitoring at Linde
7 started about '47 --

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

9 **MR. HINNEFELD:** -- or '48, so up until then,
10 the earlier work is (unintelligible).

11 **DR. MAURO:** Yeah, this case --

12 **MR. GRIFFON:** The workgroup's covering the site
13 profile and the SEC period, I think.

14 **MR. HINNEFELD:** I haven't been to the -- I
15 haven't -- I think so.

16 **MR. ELLIOTT:** It's a site profile at this
17 point.

18 **MR. HINNEFELD:** Yeah.

19 **MR. GRIFFON:** Site profile at this point, okay.

20 **DR. MAURO:** Okay, this employee worked at Linde
21 from -- oh, early years, starting in '52 -- I
22 won't give all the dates -- starting in '52.
23 The -- the SEC that's -- that was gr-- there
24 was an SEC granted on Linde.

25 **MR. GRIFFON:** Right.

1 DR. MAURO: That was -- it --

2 MR. HINNEFELD: It only goes up through about
3 '47 or '48.

4 DR. MAURO: Oh, so -- so -- okay, if he's in a
5 time period where he's not covered by the SEC -
6 -

7 MR. GRIFFON: Right.

8 DR. MAURO: -- I guess that's important, too.

9 MR. GRIFFON: But there is a workgroup
10 reviewing the site profile --

11 DR. MAURO: The site profile.

12 MR. GRIFFON: -- so -- so we could probably --

13 DR. MAURO: Yes.

14 MR. GRIFFON: -- incorporate that in that
15 review? Does that make sense?

16 DR. MAURO: That would be -- that would be --
17 that would make sense.

18 MR. GRIFFON: I hate to put it in other parking
19 lots, but I think it -- it's --

20 DR. MAURO: Well, it makes sense because in a
21 sense --

22 MR. GRIFFON: -- it's a question of whether
23 there's other -- other nuclides of interest --

24 DR. MAURO: Right.

25 MR. GRIFFON: -- that, you know, could

1 contribute poten-- you know, significantly to
2 their exposures. That's...

3 **DR. MAURO:** Yeah, in effect, what we have here
4 is -- this is a good example. This is one of
5 the places where an exposure matrix was used
6 for an AWE facility. But as it turns out, this
7 particular exposure matrix is on the table for
8 review --

9 **MR. HINNEFELD:** Right.

10 **DR. MAURO:** -- by SC&A and is being reviewed,
11 unlike a lot of the others, like Huntington and
12 -- where -- where it really would be
13 inappropriate to take --

14 **MR. GRIFFON:** This one we can defer. Right?

15 **DR. MAURO:** We can defer this (unintelligible)
16 --

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

18 **DR. MAURO:** We can (unintelligible).

19 **MR. GRIFFON:** And 86.3 says this question --
20 NIOSH's response says this question is under
21 review, so I think the site profile review
22 makes sense to --

23 **DR. MAURO:** Good.

24 **MR. GRIFFON:** -- to close that out in that
25 process. Right, Wanda?

1 **MS. MUNN:** Yeah, I -- I think probably so. But
2 I guess there's some question in my mind
3 whether the raffinate issue would be one that
4 would be really applicable to a welder --

5 **MR. GRIFFON:** A welder, yeah.

6 **MS. MUNN:** -- in this --

7 **MR. GRIFFON:** I had that same -- yeah.

8 **MS. MUNN:** You know, why would -- I can
9 understand in other parts of the plant --

10 **MR. GRIFFON:** Like a chemical operator or
11 something.

12 **MS. MUNN:** -- where you might -- yeah, you
13 might be concerned about that, but --

14 **MR. GRIFFON:** Well --

15 **MS. MUNN:** -- it seems to me (unintelligible) -
16 -

17 **MR. HINNEFELD:** I guess theoretically, to the
18 extent that a welder may in fact have been
19 involved in the cleanup where they would be
20 likely burning and, you know, cutting metal
21 pieces to remove, and if they were cutting
22 piping and so on that carried the material --
23 sitting here now, it would be hard for me to
24 say that there's no way that that welder could
25 have been exposed to contamination due to

1 raffinate or, you know, product or intervening
2 products, whatever might have been held up in
3 the pipes during the work, so it's a little
4 hard to say that (unintelligible) definitely
5 that they wouldn't have been as a welder. Now
6 if they were welding new stock, then they
7 wouldn't have been. But welders are -- are
8 sometimes used to take things apart in
9 demolition.

10 **MS. MUNN:** And cut, too.

11 **MR. HINNEFELD:** So...

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

13 **DR. MAURO:** Yeah, which goes to this first
14 issue. That is if, as a welder, and he was
15 cutting up part of -- dismantlement of -- of a
16 component of this -- piping systems that were
17 -- had some residual contamination, I guess the
18 -- begs the question, is he in a situation
19 where -- and -- and he -- the per-- the type of
20 cancer -- I don't know if I should mention the
21 cancer --

22 **MR. ELLIOTT:** Huh-uh.

23 **DR. MAURO:** No -- were such that being up close
24 and personal is -- if -- and -- if he was up
25 close and personal to the sources of external

1 exposure, that means the average external
2 exposures may not apply to him.

3 **MR. HINNEFELD:** Okay.

4 **DR. MAURO:** And that was my first finding.

5 **MR. HINNEFELD:** Okay. Well, I mean we can --
6 well, the second issue, about the -- the
7 treatment of raffinate or non-uranium progeny,
8 are -- I believe is on the Linde site profile.

9 **DR. MAURO:** It is on, absolutely, that's
10 (unintelligible).

11 **MR. HINNEFELD:** The second question of what
12 types -- is it appropriate to assign median
13 level doses and --

14 **DR. MAURO:** That's -- that's legit for here.

15 **MR. HINNEFELD:** That -- that one -- okay. So
16 then we would need some sort of -- something in
17 writing about --

18 **MR. GRIFFON:** Is that on 86.2 or --

19 **MR. HINNEFELD:** -- whether we believe -- that
20 would be 86 -- that's 86.1, I believe --

21 **MR. GRIFFON:** Or is it --

22 **MR. HINNEFELD:** Wait a minute.

23 (Whereupon, multiple participants spoke
24 simultaneously, rendering transcription of
25 individual comments impossible.)

1 **MR. HINNEFELD:** No, 86 --

2 **DR. MAURO:** Yeah, they're -- the difference
3 between 1 and 2, I think in 1 we're talking
4 about whether he might have got -- been exposed
5 to radiographic examinations --

6 **MR. GRIFFON:** Right.

7 **DR. MAURO:** -- and the argument --

8 **MR. GRIFFON:** And 2 is process --

9 **DR. MAURO:** And 2 is being up close and
10 personal to the pipe.

11 **MR. GRIFFON:** Right.

12 **MS. MUNN:** And first -- number one seems
13 unlikely.

14 **MR. GRIFFON:** I think number one we disposed
15 of. Right? You -- you would agree with
16 NIOSH's --

17 **DR. MAURO:** I'm -- I mean I'm not -- yeah. I
18 don't -- I don't -- (unintelligible), yeah. So
19 the --

20 **MR. GRIFFON:** So two you're saying you want
21 some more --

22 **MR. HINNEFELD:** We can provide a written
23 product on number two.

24 **MR. GRIFFON:** Written product, okay. Written
25 response.

1 **MR. ELLIOTT:** While there's a lull, I'd just
2 like to caution all of us to make sure that
3 when we're talking about these cases we don't
4 go too far into too much detail, maybe use a --
5 apply a rule of three. If you give three
6 particular characteristics about the claim --
7 for these AWE sites in particular where we only
8 have a small number of claims -- you tend to
9 narrow it down, and we want to be careful that
10 we don't have too much redacted out of your
11 transcript here today.

12 **MR. GRIFFON:** (Unintelligible) caution, yeah.
13 Okay.

14 **MR. HINNEFELD:** 86.4 I believe related, again,
15 to the welding question, if I'm not mistaken.
16 Is that right, welding and potential
17 (unintelligible)?

18 **DR. MAURO:** Right, that was the CATI question,
19 yeah.

20 **MR. HINNEFELD:** Yeah, potential for non-
21 destructive examination, X-ray examination on
22 that, so I believe that fits with number one.

23 **DR. MAURO:** Yeah.

24 **MR. GRIFFON:** I -- I had a second sort of
25 little comment here on 86 4. This goes back to

1 one of our old findings, not only whether --
2 and I didn't know exactly what was said in the
3 CATI, but we've always had this question of was
4 it -- was it addressed in the DR report.

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

6 **MR. GRIFFON:** You know, even if -- even if
7 there wasn't additional exposures, we like to --
8 -- you know, we've -- and you've agreed to this,
9 Stu, that the DR report should at least say --
10 at least acknowledge the comments made by the --
11 -- by the individual interviewed.

12 **MR. HINNEFELD:** Well, we -- we do try to say --

13 **MR. GRIFFON:** And (unintelligible) say that our
14 technique addresses it or whatever, so I didn't
15 know if this finding was related to the DR
16 report --

17 **DR. MAURO:** Yes.

18 **MR. GRIFFON:** -- or the actual numb-- you know.

19 **MR. HINNEFELD:** Well, it's -- it's related to
20 the -- the fact that the CATI talked about him
21 being a welder --

22 **DR. MAURO:** Welder, exactly.

23 **MR. HINNEFELD:** -- and working on that.

24 **MR. GRIFFON:** Oh, so just welding in general,
25 okay.

1 **MR. HINNEFELD:** And so it -- it --

2 **DR. MAURO:** That's all. Yeah, you're right,

3 we've -- very --

4 **MR. GRIFFON:** It wasn't about his speci-- you

5 know, that he specifically said he was exposed

6 to these --

7 **DR. MAURO:** X-ray.

8 **MR. GRIFFON:** -- X-rays during --

9 **DR. MAURO:** No.

10 **MR. GRIFFON:** -- the welding.

11 **DR. MAURO:** No, no, no, it was my --

12 **MR. GRIFFON:** All right, that's fine.

13 **DR. MAURO:** -- leaping to -- when I heard

14 welder --

15 **MR. GRIFFON:** Yeah.

16 **DR. MAURO:** -- I think non-destructive testing.

17 **MS. MUNN:** Yeah.

18 **MR. GRIFFON:** So no further action on that one.

19 Okay.

20 **MR. HINNEFELD:** Okay, claim number 87 is from

21 MIT.

22 **DR. MAURO:** MIT, let me just get to that.

23 Okay, this was an OTIB-4, no -- no site

24 profile. Whether one's in the making or not, I

25 don't know. This particular -- this is one of

1 the cases where someone was granted. He was --
2 the cancer was granted, so it is again that
3 issue of using OTIB-4 for granting. And I
4 don't think there's anything else that I'm
5 looking at here that is --

6 **MR. GRIFFON:** Anything new. Right?

7 **DR. MAURO:** -- anything new. It's just --

8 **MR. GRIFFON:** Yeah.

9 **DR. MAURO:** -- everything else about this is
10 really -- the thing -- this is almost a classic
11 example. You used OTIB-4 to grant it, and --
12 and all of the commentaries we have regarding
13 OTIB-4 apply here also.

14 **MR. GRIFFON:** Okay.

15 **MR. HINNEFELD:** Yeah.

16 **DR. MAURO:** No need to go into
17 (unintelligible).

18 **MR. GRIFFON:** I don't think we need to go into
19 (unintelligible).

20 **DR. MAURO:** Exactly.

21 **MR. HINNEFELD:** Okay.

22 **MR. GRIFFON:** Except one question on that. Is
23 -- is OTIB-4 -- or can you explain to me why
24 OTIB-4 would be applicable to MIT? I don't
25 know that much about what -- what they did at

1 MIT.

2 **MR. HINNEFELD:** Well, chances are -- chances
3 are it wouldn't be. It was part of that group
4 or the application of TIB-4 was broader than --
5 than it should have been.

6 **MR. GRIFFON:** Okay.

7 **DR. MAURO:** Yeah.

8 **MR. GRIFFON:** Broader, not only in -- in the
9 fact that it was a compensable claim, but also
10 broader in that the facility --

11 **MR. HINNEFELD:** The facility was --
12 (Whereupon, multiple participants spoke
13 simultaneously, rendering transcription of
14 individual comments impossible.)

15 **MR. HINNEFELD:** Yeah.

16 **MR. GRIFFON:** I was going to say -- okay, 88.

17 **MR. HINNEFELD:** 88 is -- NUMEC? Yeah.

18 **DR. MAURO:** 88? Yeah, NUMEC. Let's see what
19 we've got here. I believe that -- I think -- I
20 -- did NUMEC use --

21 **MR. HINNEFELD:** This case used OTIB-4, again,
22 it was one of the inappropriately utilized --
23 utilization for --

24 **DR. MAURO:** Oh, I'm looking at the wrong page -
25 - 88, got it. Yes --

1 **MR. HINNEFELD:** So some of the findings relate
2 to those --

3 **DR. MAURO:** -- OTIB-4, granted,
4 (unintelligible) --

5 **MR. HINNEFELD:** -- some of the same -- some of
6 the same findings, but there are some
7 additional things, too.

8 **DR. MAURO:** Okay. This is a little -- yeah,
9 this is a case where OTIB-4 was used to grant
10 and there's another dimension to it. Perhaps -
11 - and unlike some of the other OTIB
12 applications where it was uranium, maybe
13 uranium and, you know, the various forms of
14 uranium, also --

15 **MR. HINNEFELD:** Right.

16 **DR. MAURO:** -- not only metal. NUMEC was
17 interesting because they did a lot more than
18 handle uranium, so it's possible whether --
19 that you would want to use OTIB-4 for this
20 (unintelligible).

21 **MR. HINNEFELD:** It wouldn't -- OTIB-4 really
22 doesn't fit NUMEC, that's true. That's one of
23 those --

24 **DR. MAURO:** Right.

25 **MR. HINNEFELD:** -- inappropriately broad

1 applications.

2 **DR. MAURO:** Yeah, okay. And here's -- and one
3 last point on this one that --

4 **MR. GRIFFON:** But it was compensated. Right?

5 **DR. MAURO:** I don't -- and this one was
6 compensated. There was some bioassay data
7 available. I'm not quite sure how you deal
8 with this, but in this particular case the
9 records indicated that he had some bioassay
10 data but you elected not to use it.

11 **MR. HINNEFELD:** Actually we didn't have it when
12 the dose reconstruction was done.

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

14 **MR. GRIFFON:** You received after
15 (unintelligible).

16 **MR. HINNEFELD:** We received it -- we received
17 it after the dose reconstruction
18 (unintelligible).

19 **DR. MAURO:** Oh, okay.

20 **MR. HINNEFELD:** And it -- we didn't -- we
21 weren't really expecting to receive any 'cause,
22 you know, DOE doesn't provide us information
23 for -- for NUMEC. We don't have -- we didn't
24 really have a point of contact. We didn't
25 expect to ever get any data, and then we did in

1 fact find companies that had operated NUMEC
2 before -- you know, and clo-- but something
3 comes and (unintelligible) company that
4 operated beforehand and sold it to the company
5 that closed it, and this data actually came
6 from that company, not the one the closed it
7 but the one that operated it before. They were
8 very forthcoming and (unintelligible) through
9 their records and providing what they could.
10 This happened to be contained in medical
11 records, which they did have some medical
12 record information. They didn't have the
13 exposure records but this was in the medical
14 record.

15 **MS. BRACKETT:** We actually have a lot of
16 bioassay data for NUMEC now, there's some mas--

17 **MR. HINNEFELD:** Now we do, because the -- the
18 company --

19 **MS. BRACKETT:** -- massive data entry
20 (unintelligible).

21 **MR. HINNEFELD:** -- the company that closed it,
22 we finally got them to provide the information
23 on the claimants. They did have quite a lot of
24 bioassay information.

25 **MS. MUNN:** So this is another one of those

1 where there's no action unless --

2 **MR. HINNEFELD:** Unless DOL --

3 **MS. MUNN:** -- unless DOL --

4 **MR. HINNEFELD:** -- asks us to do something.

5 **MS. MUNN:** -- asks you.

6 **MR. HINNEFELD:** Yep.

7 **MR. GRIFFON:** Right. I think we're okay to go
8 to 89.

9 **DR. MAURO:** That's it for the AWEs, I believe,
10 and so we're going to pass the baton over to
11 you and Kathy.

12 **MR. GRIFFON:** Wake up, Kathy.

13 **MS. BEHLING:** Right here.

14 **MR. HINNEFELD:** Okay, 89 is a Savannah River
15 case. Do you want to do a 30-second rundown,
16 Kathy, like John does, or you want to --

17 **MS. BEHLING:** No, I'll skip that.

18 **MR. HINNEFELD:** Okay.

19 **MS. BEHLING:** We've discussed a lot of these --
20 as Mark has indicated, we've discussed a lot of
21 these findings before, so let's just dive right
22 in.

23 **MR. HINNEFELD:** Okay, 89.1 is the -- the fact
24 that the Savannah River -- Savannah River case
25 used the tool for a while utilized the entire

1 range of all geometries in the DCF as opposed
2 to just the AP. And as we've stated before,
3 any case that was done like that will be
4 subject to the Program Evaluation Report. And
5 I believe 89.2 is the same, because the missed
6 dose also I believe utilized that broad range -
7 - well, this actually -- with Monte Carlo
8 together, I think you got one number each year
9 that was a combination of the missed and the
10 measured, but it either can-- but it used that
11 full range triangular so it would be part of
12 what's reworked.

13 **MS. BEHLING:** Stu, can I ask a question on
14 89.1, in your response you indicate that the
15 DCFs or distribution parameters complied with
16 the guidance of the time, and I was just
17 curious what guidance that was. Because I
18 guess even when I go back to the implementation
19 guide, I don't ever see where it indicates that
20 you should use a min and a max for the -- for
21 all exposure geometries. I -- even though
22 there's an example in the implementation guide
23 that talks about if you have AP geometry you
24 only use your min and your max for that AP
25 geometry, as opposed to looking at the entire

1 row and -- and looking at all geometries. So I
2 was just curious as to what guidance they were
3 following back at that time.

4 **MR. HINNEFELD:** Well, the implementation guide
5 -- you know, that is one example it gives, but
6 it also describes that -- situations where you
7 may combine geometries, and in which case you
8 would do a particular combination of one plus -
9 - of two geometries or maybe more. And in this
10 case there was -- I don't think there was any
11 particular guidance that specifically directed
12 people to, in certain situations, use a
13 combination of all geometries, min and max of
14 all the geometries. But it was essentially a
15 judgment with -- that was made in the
16 construction of the tool, the SRS tool at the
17 time, that people, you know, could be exposed
18 partly AP, partly rotational, partly isotropic,
19 however. They'd be -- you know, working in the
20 plant, there'd be a variety of geometries. Why
21 not just apply the full range of DCF into the
22 tool and --

23 **MS. BEHLING:** Okay.

24 **MR. HINNEFELD:** -- and essentially the -- the
25 finding and the resolution of the finding that,

1 based on how some of the DCFs were generated,
2 we really only have confidence in AP or we want
3 to use AP for doses that were measured by a
4 worn dosimeter -- dosimeter worn by a person,
5 based -- you know, that finding and resolution
6 came after this -- the building of that
7 original Savannah River Site tool --

8 **MS. BEHLING:** Right.

9 **MR. HINNEFELD:** -- so that's what's meant by
10 that.

11 **MS. BEHLING:** And I -- I did recognize that --
12 yeah, O-- OTIB-12 does correct this.

13 **MR. HINNEFELD:** Right.

14 **MR. GRIFFON:** Okay.

15 **MR. HINNEFELD:** And then 89.2 is the same issue
16 as applied to missed.

17 Okay, 89.3 has a couple of components. One is
18 that doses less than LOD over two were not
19 counted as -- in the missed dose component but
20 rather were counted just as the measured value.
21 That direction, again, has occurred later --
22 you know, that resolution and that question
23 occurred after this (unintelligible) was done.
24 And the other had to do with what value to use
25 for -- what was the LOD at Savannah River for

1 various years. And so we have identified a
2 document here that identifies what -- you know,
3 our -- why we concluded the LOD was a
4 particular thing. It's not -- you know, a
5 particular value. It's not clear to me that
6 the site profile has actually been revised to
7 reflect that. So I'm trying to establish with
8 ORAU if -- if in fact we have values for --
9 that we have confidence in that are different
10 from the site profile values for LOD, why
11 aren't we revisi-- you know, why haven't we
12 revised the LOD or should we get a revision
13 that would be -- to incorporate those values
14 into the site profile, rather than just rely on
15 some other document and you still have the site
16 profile with different values than the ones we
17 intend to use. So -- I mean in terms of
18 product, I guess we could provide a more clear
19 delineation of why our LOD values were
20 different from what SC&A expected to be used,
21 and we could also provide status of a revision
22 to the site profile that incorporates why --
23 you know, what we believe to be the better
24 value.

25 **MS. BEHLING:** I think that would be

1 appropriate, because I guess the other thing
2 that I read into your response is it looks as
3 if you were indicating that Proc. 6 was used
4 for -- unless I'm misunderstanding this -- for
5 the missed dose. And here again, I guess when
6 I look at these various documents, I sort of
7 assign a hierarchy of documents also and assume
8 that the site profile, when it is available,
9 should be used. And in this particular case,
10 the site profile was available, and I also have
11 a note here that I wasn't sure why the site
12 profile wasn't changed if there was some other
13 document, as you just mentioned, that -- that
14 disputes the -- the LOD values that are
15 identified in the site profile.

16 **MR. HINNEFELD:** Yeah. It may not hurt for us
17 to describe, just so it's clear to everyone, if
18 there is in fact a hierarchy in relationships
19 like that. That may be helpful for all of us,
20 I think --

21 **MS. BEHLING:** And I believe --

22 **MR. HINNEFELD:** -- (unintelligible) that as
23 part -- did you hear me?

24 **MS. BEHLING:** Yes, I did. Just excuse me for
25 one second. I believe also, when I went into

1 the workbook on this particular case, it does
2 identified, under each of the annual tabs, what
3 the LOD value is that's supposed to be used.
4 And I believe I was -- that's where I looked to
5 see if they used -- if they counted missed dose
6 as LOD -- values -- the recorded values of less
7 than LOD over two. So it's also in -- in the
8 workbooks, so any changes would obviously have
9 to be incorporated into the workbooks.

10 **MR. HINNEFELD:** Okay.

11 **MR. GRIFFON:** To go back to your hierarchy of
12 guidance (unintelligible), is that something
13 that's sometimes in these -- these DR
14 guidelines or DR notes?

15 **MR. HINNEFELD:** Well, I think rather than speak
16 to that myself, I think we should -- I should
17 go -- make it a part of the written --

18 **MR. GRIFFON:** I agree.

19 **MR. HINNEFELD:** -- product and -- and sort of
20 describe the -- the var-- you know, what -- the
21 authority levels of the various instruction
22 things that are provided, rather than say
23 something here that may turn out to be false.

24 **MR. GRIFFON:** Right.

25 **MR. HINNEFELD:** Okay, 89.4 -- 89.4 is for

1 neutrons, the -- the AP geometry finding. Is
2 that correct, Kathy?

3 **MS. BEHLING:** That's correct, it's the same as
4 I guess 89.1.

5 **MR. HINNEFELD:** Okay.

6 **MS. BEHLING:** DCFs.

7 **MR. HINNEFELD:** Okay, 89.5 -- well, I probably
8 ought to look at the finding. I'm trying to
9 deduce them from the summary here.

10 (Unintelligible) harder than others.

11 **MS. BEHLING:** Yeah, and I looked at this
12 response, also, and I wrote a note to myself
13 that I'm going to have to go back and reassess
14 since I didn't have the time to go into this
15 level of detail. But again here I take notice
16 that you've employed -- and I believe it's
17 actually OCAS-TIB-7 -- I believe that first
18 paragraph should say seven as opposed to six --
19 and site-specific guidance for the Savannah
20 River site. I didn't -- I -- I did look at
21 that today and I do have to -- to re-evaluate
22 this because we were -- we were asking was --
23 did the -- should they have assigned more
24 missed dose than was assigned. And I guess,
25 again -- not to -- to go back to this, but the

1 dose reconstruction report did not reference
2 this OTIB-7 -- or this TIB-7, and it's not
3 always one that I quickly go back to. I again
4 use the site profile. But we were questioning
5 a couple of things here. Also the fact that I
6 guess the 200F area was used for -- for various
7 time periods and, based on the records, it
8 didn't really look like he was at that 200F
9 area, and so had he been there, I -- I'm not
10 sure I would have indicated that that neutron
11 was a possibility, but I think the records
12 indicated something different, so I'm going to
13 have to look at this one a little bit closer,
14 also.

15 **MR. HINNEFELD:** Okay, 89.6 is inappropriate
16 organ dose uncertainty assigned for onsite
17 ambient dose based on procedural guidance.
18 Well, my reading -- let's see, this is -- has
19 to do with the instructions in the site profile
20 that lognormal distribution should be applied
21 to the values -- the particular set of values,
22 table of values, with a GSD of 1.3. And the
23 dose in the dose reconstruction for ambient was
24 not I believe lognormally distri-- distributed,
25 or at least wasn't lognormally distributed with

1 a GSD of 1.3. When we -- you know, my reading
2 of the procedure of the -- of the site profile
3 is that lognormally distribution is applied
4 with a GSD of 1.3, the relevant organ dose
5 conversion factor is applied on an isotropic --
6 isotropic exposure geometry and a photon energy
7 of 30 to 250. So you start with a radiation
8 value that is lognormally distributed, and then
9 you apply the triangular DCF value to that
10 lognormally distributed radiation value, and so
11 the outcome is what the outcome is. There --
12 you Monte Carlo that, and then the resulting
13 distribution is fit and you choose the best fit
14 of the available distributions for that. So in
15 -- in my reading of the -- of the site profile
16 -- and at least Scott's nodding at me -- it
17 would seem that the -- the dose reconstruction
18 was done in accordance with the directions.
19 It's that the lognormal distribution is -- is -
20 - is to be applied to radiation measurement,
21 but to get to the dose value you still have to
22 apply the DCF as a triangular distribution.

23 **MS. BEHLING:** I agree. When -- when you
24 pointed this out and I read through it, I
25 expected to see in the IREP input sheet the

1 values lognormally distributed. I didn't
2 realize that they were running a Monte Carlo on
3 the DCFs in this particular case. I think this
4 is one of the first cases that I'd seen this.
5 Typically they will just take the value out of
6 the table that exists in the Savannah River
7 site profile and apply the -- use that value,
8 applying the 1.3, along with the DC-- with the
9 central DCF value as opposed to running the
10 Monte Carlo. And I believe now even the
11 workbooks have -- have the Monte Carlo runs
12 incorporated into them. And as you indicated,
13 once they apply that Monte Carlo, it often
14 results in a normal distribution and -- and so
15 I agree and I understand now.

16 **MR. HINNEFELD:** Okay.

17 **MS. MUNN:** So SC&A accepts NIOSH response.

18 **MS. BEHLING:** Yes.

19 **MR. HINNEFELD:** 89.7 is about the use of the
20 isotropic exposure geometry, and we talked
21 about that earlier on, about ambient doses and
22 the use of isotropic, and we believe that
23 isotropic is the appropriate geometry for an
24 ambient dose that is not measured with a badge
25 on a person's body but it's measured in a free-

1 hanging badge or maybe (unintelligible), so
2 we've talked about that already.

3 **MS. BEHLING:** Yes, and I believe that we -- we
4 do concede that issue, yes.

5 **MR. GRIFFON:** 89.7 that was?

6 **MR. HINNEFELD:** That was 89.7. 89.8 is --
7 addresses -- let's see, failed to properly
8 account for all internal dose from fission
9 products, which is on our additional products
10 list from the fourth round. So our response
11 there should also address the issue associated
12 with this finding. Okay?

13 **MS. BEHLING:** Yes.

14 **MR. HINNEFELD:** Okay, case number 90 is also a
15 Savannah River case.

16 **MS. MUNN:** So we're okay on -- on .8 as well?

17 **MR. HINNEFELD:** Well, on -- on .8 --

18 **MR. GRIFFON:** 'Cause you (unintelligible) --

19 **MR. HINNEFELD:** -- we know -- we know what
20 product on fission product in terms of
21 dosimetry, and so it will be addressed by that
22 product that we've already promised as part of
23 -- of group four, or the fourth set.

24 **MS. MUNN:** Right.

25 **MR. HINNEFELD:** Okay, 90.1 is, again, a

1 Savannah River case. I believe it has the same
2 -- the same findings that 89 had, as long as we
3 didn't over look something.

4 **MS. BEHLING:** No, it does. Those are a repeat
5 of the 89 findings.

6 **MR. HINNEFELD:** And so, to the extent that we
7 owe something, we owe it here.

8 **MR. GRIFFON:** Right.

9 **MR. HINNEFELD:** Or it will address this, as
10 well.

11 **MR. GRIFFON:** And the other ones are closed
12 out. Right? Right. Okay.

13 **MR. HINNEFELD:** 91 is a Savannah River case.
14 Okay --

15 **MR. GRIFFON:** 91's also Savannah River?

16 **MR. HINNEFELD:** Yes.

17 **MS. BEHLING:** It is.

18 **MR. HINNEFELD:** Yes, it is. 91, from our
19 reading, findings one through four are similar
20 to case 89 findings, and then as we get to
21 finding five... Finding 91.5 questions whether
22 we should have considered assigning missed
23 neutron dose on this claim. And again I'm
24 having trouble reconstructing the findings by
25 reading the summary. When you read enough of

1 them, it gets a little (unintelligible).

2 **MS. BEHLING:** I think this is similar to the
3 previous one, also. And again, here you're
4 referencing this TIB-7 --

5 **MR. HINNEFELD:** That's the one you said you
6 wanted to take additional (unintelligible) --

7 **MS. BEHLING:** Yes, and I don't mind -- maybe I
8 can look at this one, also.

9 **MR. HINNEFELD:** Okay.

10 **DR. MAURO:** So let me understand that TIB-7
11 addresses issues related to work location and
12 where neutron may be an issue and where it may
13 not be an issue?

14 **MR. HINNEFELD:** More so occupation than work
15 location.

16 **DR. MAURO:** Oh, okay.

17 **MR. HINNEFELD:** Yeah.

18 **DR. MAURO:** And that's specific to Savannah
19 River?

20 **MR. HINNEFELD:** Yes.

21 **MS. BEHLING:** It's specific to Savannah River,
22 and it also gives some, I think, interpretation
23 of the records, how you're supposed to
24 interpret the records for various years.

25 **MR. HINNEFELD:** 91.6 has to do with not being

1 able to reproduce the ambient -- on-site
2 ambient dose.

3 **MS. BEHLING:** That's the one that we agree with
4 --

5 **MR. HINNEFELD:** Yeah.

6 **MS. BEHLING:** -- like I said, I didn't realize
7 that you were actually using a Monte Carlo -- I
8 -- it looked that that's what you were doing,
9 but I -- I wanted some confirmation on that.

10 **MR. HINNEFELD:** Okay.

11 **MR. GRIFFON:** Right.

12 **MR. HINNEFELD:** 91.7 is, again, the use of the
13 isotropic exposure geometry for ambient.

14 **MS. BEHLING:** Yes.

15 **MR. GRIFFON:** Same as 89.

16 **MR. HINNEFELD:** Same as earlier.

17 **MR. GRIFFON:** Okay.

18 **MR. HINNEFELD:** Okay, 91.8 is failed to
19 properly missed tritium dose based on cite--
20 cited guidance. And cited guidance, section
21 4.5.4 of the SRS site profile, isn't there
22 anymore. Apparently this was a version that
23 went back quite a ways having included that
24 section. The site profile -- that section in
25 the site profile now essentially ends with the

1 overestimating approach. You know, it's 4.5.2
2 or something like that.

3 **MS. BEHLING:** I guess, however, for this
4 particular case -- this case was worked under
5 the Rev. 1 of the Savannah River site profile,
6 which was in place back in '03 -- 2003 -- and
7 that section did exist and that's where I was
8 confused. And I'm -- I'm not even necessarily
9 challenging the dose. I was -- I believe what
10 I was con-- there were two guide-- two -- two
11 separate guidance documents and the -- the --
12 like I say, the Savannah River site profile is
13 the one I thought should be used. And if you
14 use that, I believe that should have been
15 entered as like a triangular distribution and
16 it was entered as a lognormal distribution, and
17 so then I thought well, maybe they used
18 different guidance. So I went to a different
19 guidance document where it did specify to use a
20 lognormal distribution, and if I would have
21 followed that guidance I would not have come up
22 with the 71 millirem. And so it was just some
23 confusion there as to which guidance applied.
24 But in -- in reality, this section 4.5.4 was in
25 place at the time this dose reconstruction was

1 done under the Savannah River site Rev. 1.

2 **MR. HINNEFELD:** Okay. So...

3 **MS. BEHLING:** So I believe -- like I said, I'm
4 not necessarily challenging this dose. I was
5 just I guess challenging how it was entered
6 into IREP as what distribution it should be
7 entered as.

8 **MR. HINNEFELD:** It -- it might be that the
9 product we've talked about earlier about
10 hierarchy or potential hierarchy of the various
11 --

12 **MS. BEHLING:** Yes.

13 **MR. HINNEFELD:** -- documents might be helpful
14 and maybe taking another look at what -- what
15 did we follow when we did this kind of approach
16 and it would be a part of that, that discussion
17 of hierarchy of different types of documents.

18 **MS. BEHLING:** Yes.

19 **MR. HINNEFELD:** Okay. Okay, 92 -- oh, I've
20 finished 91. I just want to catch my breath
21 when I finish one, you know?

22 **MS. MUNN:** (Unintelligible)

23 **MS. BEHLING:** 92 is also Savannah River Site.

24 **MR. HINNEFELD:** Okay. Okay, 91 -- 92.1 I
25 believe is a finding we talked about earlier,

1 has to do with the treatment of LO-- recorded
2 values less than LOD over two, isn't it?

3 **MS. BEHLING:** Yes.

4 **MR. HINNEFELD:** And so we will take a look at
5 the impact of you treating those LOD over two
6 cases as part of the missed dose as opposed to
7 part of the recorded dose.

8 **MS. BEHLING:** Right.

9 **MR. HINNEFELD:** Yeah, something --

10 **MS. BEHLING:** And there again, you do cite that
11 that PROC-6 was used here and I'm not sure why
12 PROC-6 would take precedent over the Savannah
13 River site profile.

14 **MR. HINNEFELD:** Okay.

15 **MR. GRIFFON:** So at the end of your response on
16 92 1, that last paragraph, Stu...

17 **MR. HINNEFELD:** Well, this change is relatively
18 small. I mean you -- what you're going to do
19 is you're going to take -- for a certain number
20 of badge readings you're going to take a very
21 small measured dose and take that to zero, and
22 then you're going to throw in a missed dose
23 that is a lognormal distribution for the mean,
24 slightly higher than what you just took out and
25 it -- you know, a 90-- a 95th percentile it's

1 twice that. So it's a -- it's a fairly modest
2 -- first of all, the dose number itself will be
3 fairly modest because, you know, the LODs are
4 pretty small. And the change is -- is even --
5 you know, may -- is quite modest, as well. But
6 then you do have the additional -- the
7 uncertainty aspect thrown into it, and I think
8 I wrote that because the POC on this case was
9 relatively close to 50 percent, so rather than
10 just say -- if it weren't particularly close
11 you might say this change will be very small
12 and so we won't bother about it; we just know
13 from now on we -- we do it correctly and we'd
14 count those cases, those LOD over twos, in the
15 missed dose column -- or less than LOD over two
16 as a missed dose. But in this case, because
17 the POC is close to 50 percent, we don't want
18 to just say well, the effect will be small and
19 we're not going to worry about it, so we will --
20 -- we will reconsider.

21 **MR. GRIFFON:** I was just going to suggest maybe
22 to rewor-- we -- we can say OCAS will --

23 **MR. HINNEFELD:** We ought to (unintelligible) --

24 **MR. GRIFFON:** -- instead of re-evaluate this
25 case, I'd say -- I'd say OCAS will re-evaluate

1 the impact of this finding --

2 **MR. HINNEFELD:** Okay.

3 **MR. GRIFFON:** -- on the case.

4 **MR. HINNEFELD:** Okay.

5 **MR. GRIFFON:** Just so we're not --

6 **MR. HINNEFELD:** We can just take out --

7 **MR. GRIFFON:** We're not suggesting that you're
8 re-evaluating the entire case. We're saying
9 you're re-evaluating the impact of this finding
10 --

11 **MR. HINNEFELD:** The impact of this finding.

12 **MR. GRIFFON:** -- on the case.

13 **MR. HINNEFELD:** Okay.

14 **MR. GRIFFON:** Just so we don't
15 (unintelligible).

16 **MR. ELLIOTT:** I presume that implies you want a
17 report. You want to hear back whether there
18 was...

19 **MS. BEHLING:** I would assume so, just --

20 **MR. GRIFFON:** Yeah, I mean this is Stu's
21 (unintelligible) --

22 **MR. HINNEFELD:** I think it's part of the
23 resolution (unintelligible) --

24 **MR. GRIFFON:** -- response, so yeah. Yeah,
25 yeah.

1 **MS. BEHLING:** And there are several other
2 possibly or potentially sig-- significant
3 findings in this case.

4 **MR. HINNEFELD:** Okay, 92.2, reviewer questions
5 whether DR properly accounted for all missed
6 neutron doses. Again, we've -- this I think
7 may follow that OTIB-7 look that you wanted to
8 take, Kathy, because it was selection --

9 **MS. BEHLING:** Yeah, and I guess the other
10 question I have on this particular case -- and
11 maybe you can clarify something here for me.
12 When I look at the bioassay records on this
13 case, I see under location that the individual
14 worked, the reason that he provided the
15 bioassay was because of location KPC, and when
16 I read that I say -- I assume that those are
17 reactors. And so that's also why I stated that
18 it seemed like there might be some additional
19 missed dose here for certain years where there
20 were bioassays where the location was K, P and
21 C. Am I misinterpreting that location?

22 **MR. HINNEFELD:** Well, K and P are reactors. I
23 don't recall right off-hand with C, but I'm
24 pretty confident that K and P location on a
25 Savannah River card would indicate those --

1 those -- the K reactor or the P reactor.

2 **MS. BEHLING:** Okay.

3 **MR. HINNEFELD:** So that -- that's correct. I
4 think OTIB-7 may describe a little bit about
5 even at the reactor facilities, based upon the
6 -- the -- the way the reactors were constructed
7 and operated. There are just certain types of
8 job titles, even at the reactor facilities,
9 where neutron exposure was particularly likely.
10 Not everybody who was assigned to the -- was
11 that 100? Was that where the reactors were?
12 Not everybody assigned to the reactors at
13 Savannah River necessarily had a potential --
14 much potential for neutron exposure. And so I
15 think OTIB-7 gets into that, as well.

16 **MS. BEHLING:** Okay.

17 **MR. HINNEFELD:** Not OTIB-7 -- TIB-7.

18 **MS. BEHLING:** Okay, and I will look at that.
19 But like I said, and particularly the bioassay
20 records did indicate the reactors and so --

21 **MR. HINNEFELD:** Yeah.

22 **MS. BEHLING:** Okay. I guess, again, when we
23 come back to cases of unknowns, we should give
24 the benefit of the doubt to the claimant, as we
25 all know.

1 **MR. HINNEFELD:** So -- okay, so --

2 **MR. GRIFFON:** So what's the -- go ahead.

3 **MR. HINNEFELD:** Well --

4 **MR. GRIFFON:** What's the action on this?

5 **MR. HINNEFELD:** I think the action -- the first
6 action on this is -- you know, Kathy has said
7 she wants to go back and look at TIB-7 and --
8 in terms of -- and what it says about who is
9 potentially neutron-exposed and in what
10 situations to see if that lends sup-- you know,
11 lends support to our discussion or if it raises
12 a different question. I think that was the
13 first action. Isn't that right, Kathy?

14 **MS. BEHLING:** That's correct.

15 **MR. GRIFFON:** Okay.

16 **DR. MAURO:** I'd like to add, though, in terms
17 of parsing job responsibilities, I -- one of
18 the recurring themes when we meet with site
19 experts is that it's one thing that a person
20 has a job title and another thing exactly what
21 they ended up really doing.

22 **MR. HINNEFELD:** Yeah.

23 **DR. MAURO:** So just -- you know, it's not
24 something -- you know, we're going to be
25 cautious in (unintelligible) --

1 **MR. HINNEFELD:** It may be a broad issue for
2 discussion. I mean in terms of, you know, what
3 -- what does TIB-7 -- does it -- you know, I'm
4 not going to speak like I know exactly whether
5 -- but it -- it sounds like it may be subject
6 to --

7 **DR. MAURO:** That's --

8 **MR. HINNEFELD:** -- discussion.

9 **DR. MAURO:** Yeah, we hear that a lot --

10 **MR. HINNEFELD:** Yeah.

11 **DR. MAURO:** -- you know, from the -- the
12 workers.

13 **MR. HINNEFELD:** Okay.

14 **MS. MUNN:** Well, we hear it at virtually every
15 Board discussion, too. (Unintelligible) we've
16 heard it about 44 times.

17 **MR. HINNEFELD:** Okay, 92.3 is the -- I believe
18 that's the finding we talked about earlier?

19 **MS. BEHLING:** It is.

20 **MR. HINNEFELD:** Okay. And 92.4 is also a
21 finding we talked about earlier.

22 **MS. BEHLING:** Right, and we concede both those
23 two issues.

24 **MR. HINNEFELD:** Okay.

25 **MR. GRIFFON:** Okay.

1 were overestimated, so I'm proposing that we
2 don't really need to go back and reconsider the
3 impact of this small change. Because if in
4 fact it were to move the dose up to 50 percent
5 or thereabouts, we would have -- we would look
6 at the other overestimating approaches and say
7 well, we just can't overestimate to that effect
8 and we'll -- we'll -- it'll be coming out --
9 and there essentially doesn't seem to be any
10 chance for this finding to affect the outcome
11 of this (unintelligible) --

12 **MR. GRIFFON:** So you don't dispute the point,
13 you're just --

14 **MR. HINNEFELD:** Don't dispute the --

15 **MR. GRIFFON:** -- (unintelligible) affect the
16 outcome.

17 **MR. HINNEFELD:** That it's not going to -- it's
18 not going to have an effect. We don't dispute
19 the point. We're doing -- you know, now we are
20 doing dose reconstructions where the LOD over
21 two -- less than LOD over two doses would be
22 included in the missed dose, not in the
23 measured doses, so we just don't see the value
24 of going back and reconsidering this 'cause
25 this won't -- this won't change it.

1 **DR. MAURO:** Is that type of clos-- is that
2 closure and that's something that would be
3 written up as sort of a final matrix? How do
4 we -- in other words, in effect --

5 **MR. GRIFFON:** Yeah.

6 **DR. MAURO:** -- this -- in the final matrix?

7 **MR. HINNEFELD:** I would -- I would -- I would
8 think that maybe --

9 **MR. GRIFFON:** It's closure to me.

10 **DR. MAURO:** That's what that would be, yeah.
11 Okay.

12 **MR. HINNEFELD:** Yeah.

13 **MS. MUNN:** Small effect --

14 **MR. GRIFFON:** NIOSH -- NIOSH agrees; however,
15 it would not impact the --

16 **MR. HINNEFELD:** Yeah, we've -- in fact, we've
17 used that (unintelligible) --

18 **MR. GRIFFON:** We've used that language
19 (unintelligible).

20 **MS. BEHLING:** Okay, yeah, this is
21 overestimating, but the POC was over 47 percent
22 here. How overestimating was this? Because I
23 do see some cases that are marked as
24 overestimating. However when I delve into them
25 a little further, they're not -- they're not

1 quite as overestimating as we saw in the first
2 three sets. And -- and maybe you're correct
3 here. I'm just curious 'cause now when I look
4 at this and I see we're looking at 47 percent
5 POC, and there are other findings here -- maybe
6 you're correct. I -- I shouldn't -- just
7 something that caught my eye.

8 **MR. HINNEFELD:** Well, I mean if you want, I can
9 summarize the various overestimating points. I
10 -- I -- I can't do it right now, but we could
11 do that.

12 **MS. BEHLING:** No, I don't think we need to do
13 that. That's okay, I just -- just when I saw
14 47 percent, it just -- and I don't see that it
15 was a hypothetical internal that as used. They
16 used --

17 **MR. HINNEFELD:** That's what I looked at first
18 and it doesn't seem to have been.

19 **MS. BEHLING:** It was -- it was a hypothetical?

20 **MR. HINNEFELD:** No, it does not seem --

21 **MS. BEHLING:** It was not, no.

22 **MR. HINNEFELD:** -- based on -- I don't have the
23 reconstruction in front of me, but just based
24 on your review of it, it doesn't seem that it
25 was.

1 **MS. BEHLING:** No, and again -- now here your
2 on-site ambient was very high --

3 **MR. GRIFFON:** (Unintelligible) Make sure it was
4 an overestimat-- sorry, Kathy, go ahead.

5 **MS. BEHLING:** Oh, that's okay. Yeah, it is --
6 NIOSH did mark this as a maximizing case, but
7 what I'm saying is as I'm looking down my Table
8 1 in our audit, the only thing that stands out
9 at me, as I said, is the internal dose was not
10 a hypothetical internal. It looks like they
11 did maybe either use OTIB-18 or they used IMBA,
12 I'd have to look at that. And I know that
13 Fernald does have high ambient because the
14 highest dose in here is the ambient of 21 rem.
15 But I just don't know if I'm too quick to say
16 that if we had some significant findings, we
17 wouldn't want to look at this a little closer.

18 **MR. HINNEFELD:** Well, I mean the -- the
19 statement was made that we're not going to look
20 at it further was bas-- related to the missed
21 dose, LOD over two not being included in missed
22 dose --

23 **MS. BEHLING:** Okay.

24 **MR. HINNEFELD:** -- which we believe is a small
25 --

1 **MS. BEHLING:** That is small.

2 **MR. HINNEFELD:** -- small adjustment.

3 **MR. GRIFFON:** Yeah.

4 **MS. BEHLING:** Okay. All right, never mind.

5 **DR. MAURO:** Kathy, I have a question. When
6 these are reviewed and you find that OTIB-18 --
7 the OTIB-18/33 was used, is that brought out,
8 because I know that is one of the concerns that
9 -- from a -- I guess in the sixth set was
10 something very important that's going to be
11 aired when we get to the procedure reviews. So
12 I guess we're not -- all I'm saying here is
13 that in any one of the cases that we're looking
14 at, if -- if that case did rely on OTIB-18/33,
15 I think that's an important thing to make note
16 of because that's going to be something that's
17 going to be revisited during the procedure
18 review.

19 **MS. BEHLING:** Yes, and I did mark that on the
20 sixth set, but I did not do that 'cause we're
21 just really starting to see the use of OTIB-18
22 -- we're seeing that much more. And now -- in
23 fact, as I'm going through this particular
24 case, it looks like they did run IMBA here, so
25 OTIB-18 was not used, but I did not make

1 mention of that in any of the fifth set. That
2 was sort of one of those issues that we
3 identified during the sixth set. But I did go
4 through all of the sixth set and make mention
5 that we did take issue with this OTIB-18.

6 **MR. HINNEFELD:** Okay. Yeah, here's -- here's
7 the -- Kathy, I'm afraid you won't have the
8 benefit of this 'cause Scott just pulled it up
9 on his laptop computer, but --

10 **MS. BEHLING:** Okay.

11 **MR. HINNEFELD:** -- he ha-- we have, and this
12 will be part of what we provide. This is the -
13 - we have the IMBA fit that was utilized to
14 generate the input for this dose
15 reconstruction, and --

16 **MS. BEHLING:** Okay.

17 **MR. HINNEFELD:** -- and so it shows -- yeah --

18 **MS. BEHLING:** I remember --

19 **MR. HINNEFELD:** -- you don't have this --

20 **MS. BEHLING:** I remember, I remember now.
21 You're right. You're right.

22 **MR. HINNEFELD:** It has an excretion pattern
23 that --

24 **MS. BEHLING:** Yes.

25 **MR. HINNEFELD:** -- lies above -- looks like

1 every bioassay pattern.

2 **MS. BEHLING:** I remember that. Now I clearly
3 remember, yes, bec-- because I ran IMBA and I
4 couldn't understand how -- how you got these
5 values. All right. Okay, never mind. Yes, I
6 agree with that.

7 **MR. HINNEFELD:** Okay.

8 **MS. BEHLING:** I guess on -- if we can move on
9 to this second finding, this had to do with the
10 occupational medical dose, and I have a
11 question here. I guess your response to this
12 was that there were a lot of -- there were a
13 lot of X-rays in this man's file that were
14 marked as DISP, not routine. Number one, what
15 is -- what is DISP?

16 **MR. HINNEFELD:** Probably means dispensary,
17 probably stands for dispensary.

18 **MS. BEHLING:** Okay, dispensary, that's what I
19 thought. And I -- I guess -- and there were
20 also five lumbar spine radiographs, and I've
21 got to go back and look to see if they were
22 marked as routine or how they were marked. If
23 an individual is injured at his job and he is
24 told you cannot come back to work until we --
25 we're sure that you -- that -- that this has

1 healed or that -- that you're okay, and he
2 needs to have let's say a lumbar spine
3 radiograph because of that, that does not get
4 included in the dose reconstruction. Is that
5 correct or --

6 **MR. HINNEFELD:** That -- that --

7 **MS. BEHLING:** -- how does that work?

8 **MR. HINNEFELD:** That's correct. The thought
9 process behind the medical exposures that are
10 included are that these were exposures or X-
11 rays where there was no medical indication for
12 the X-ray but they were part of a routine
13 screening program that very frequently the DOE
14 sites would require of their workers. And
15 since it was required of the worker without
16 medical indication to -- to do that, it was
17 essentially considered a condition of
18 employment. Someone who's injured on the job,
19 whether they be at a DOE site or any site, is
20 subject to those kinds of medically-indicated
21 X-rays. And so based on that, that was --
22 that's how we've selected those screening --
23 routine screening X-rays as being in, but
24 medically-indicated X-rays as not being in.

25 **MS. BEHLING:** Okay. Hans just picked up. Do

1 you want to say something? Because he -- he
2 did this case. See what happens when I turn
3 anything over to him? No.

4 **MR. HINNEFELD:** Meetings get longer.

5 **DR. BEHLING:** Stu, I guess it's been a long
6 time since I looked at it. Are those lumbar
7 spine associated with an injury that he
8 sustained during his working days or was this
9 part of an employment requirement as are the PR
10 -- PA chest X-rays? I guess I'm -- I don't
11 recall.

12 **MR. HINNEFELD:** My -- my understanding is these
13 were medically indicated, that these were
14 probably as a result of a -- of an injury of
15 some sort or -- or back or something like that,
16 so --

17 **DR. BEHLING:** Can that be -- can that be
18 interpreted from the -- the documentation or is
19 this a -- is this a subjective interpretation
20 on -- on anyone's part? I don't have the
21 records in front of me to -- to -- to -- to
22 indicate one way or the other so I'm basically
23 asking. But if I recall, looking at it, it was
24 not clear as to whether the lumbar spine
25 radiographs were the result of -- of an injury

1 sustained during his working there or whether
2 or not those were part of the conventional
3 requirements for people who are engaged in
4 heavy lifting.

5 **MR. HINNEFELD:** I think -- I'd have to go look.
6 I mean I can't speak knowledgeably about it. I
7 believe they were -- there was an indication on
8 those records of those X-rays that these were
9 in fact medically-indicated X-rays. So I --
10 but I'd have to go back and look 'cause I don't
11 -- I can't say with -- you know, for sure. The
12 -- I think that Fernald was not one of the
13 sites that did lumbar spine as a screening for
14 employment. There were some sites that did,
15 but I don't believe Fernald was one of those.

16 **DR. BEHLING:** Okay. I -- I do recall that the
17 -- the doses that would have been assigned, had
18 they been part of a re-- employment
19 requirement, would have been very substantial,
20 several rem.

21 **MR. HINNEFELD:** Okay.

22 **MS. BEHLING:** Although I guess the remain-- the
23 remainder of your response here indicates that
24 in calculating that dose we did use OTIB-6, and
25 actually we should have used the FMPC site

1 profile, which -- based on the FMPC site
2 profile -- the val-- the doses would have been
3 quite a bit less than what is specified in the
4 OTIB-6.

5 **DR. BEHLING:** Well, you're just mentioning
6 something, Kathy, that suggests that they were
7 then used as an occupational screening
8 requirement if the -- the site profile for FMPC
9 identifies this as one of the medical --
10 medical exposures.

11 **MR. HINNEFELD:** Our -- our response says that
12 the Procedure 61 would specify -- it specifies
13 medical exposures and what it says -- let's see
14 --

15 **MS. BEHLING:** That's right, they're saying if -
16 -

17 **MR. HINNEFELD:** -- it says that the -- the RFP
18 -- the Rocky Flats TBD would be where you could
19 see -- where you can find lumbar spine AP and
20 lateral doses.

21 **MS. BEHLING:** Right. We -- we -- we put an
22 example in our audit, and they were just
23 commenting that, based on that example, we used
24 an incorrect --

25 **DR. BEHLING:** Yeah, yeah, yeah.

1 **MS. BEHLING:** Okay. See what happens if I
2 don't watch over him all the time?

3 **DR. BEHLING:** I'm being judged unfairly here.

4 **MS. BEHLING:** I'm sorry. Okay, so --

5 **MR. GRIFFON:** Separate rooms now.

6 **DR. BEHLING:** You don't know what's going on
7 here behind the scenes.

8 **MS. BEHLING:** Okay.

9 **MR. GRIFFON:** We're going to have to cut off
10 the line soon.

11 **MS. BEHLING:** Okay, on --

12 **MR. GRIFFON:** Hey, one question on this,
13 without saying the job title, do we have any
14 indication that this person might have been
15 engaged in a job requiring heavy lifting --
16 don't -- I don't want to hear the job title
17 'cause I think we said --

18 **MS. BEHLING:** Okay. I'm not sure, can -- can
19 we look at this finding again? Can I reassess
20 this again?

21 **MR. SIEBERT:** Just to let you know, I just
22 looked it up real quick and at least some of
23 the lumbar spines are marked as DISP, as well
24 as the chest, so the con-- the consistent
25 thought process would -- would be there.

1 **MS. BEHLING:** Okay. And then I guess quite
2 hon--

3 **MR. ELLIOTT:** That they were job-required?

4 **MR. SIEBERT:** That they were not.

5 **MS. BEHLING:** That they were not.

6 **MR. ELLIOTT:** Okay.

7 **MR. SIEBERT:** It was not (unintelligible) --

8 **MR. GRIFFON:** But as far as the job title, do
9 you have --

10 **MR. HINNEFELD:** Job title would lead me to
11 believe that he would have been involved in --
12 in heavy labor. It -- it's -- without getting
13 too far into it, it's maintenance/craft, so
14 chances are he was involved in some -- at least
15 occasionally on relatively heavy labor.
16 Okay --

17 **MS. MUNN:** So the action then is?

18 **MR. HINNEFELD:** Well --

19 **MR. GRIFFON:** Do we need to --

20 **MR. HINNEFELD:** -- I'm -- we're going to go
21 back and look at -- at the dis-- at the records
22 of the X-rays and see if we are -- have really
23 confidence in -- and maybe put together any
24 other indication why we feel confident that the
25 lumbar spines were not routine screening --

1 **MR. GRIFFON:** I mean I agree --

2 **MR. HINNEFELD:** -- (unintelligible).

3 **MR. GRIFFON:** -- with your rationale as long as
4 they -- they didn't do a screening program at
5 Fernald. If there was a screening, I -- you
6 know, (unintelligible) concerns, but otherwise
7 I think it's appropriate what you did. I think
8 we need to determine that, though.

9 **MR. HINNEFELD:** Yeah. Okay, that finishes 93,
10 too, or -- yeah, 93.
11 Okay, 94 is also a Fernald case. 94.1
12 questions whether -- complete monitoring
13 records from the -- from the '50s. Person
14 started working at the site before their
15 external dosimetry record starts, and so the --
16 the issue or the finding was are we sure that
17 the person didn't in fact have some exposure
18 prior to the -- the badging started. Speaking
19 from what we've seen in the records from this
20 site, it seems like we -- we have pretty
21 complete records of -- of the badge reads. We
22 have many people who were monitored regularly,
23 even weekly in the -- in the early years at
24 this site, and so if -- since this person
25 doesn't have that record, it's likely that they

1 were not in fact badged until their monitoring
2 record starts, and therefore would have -- and
3 had little potential for exposure. Again --

4 **MS. BEHLING:** I guess it --

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

6 **MS. BEHLING:** Okay. I guess in this particular
7 case, however, there was -- there was
8 urinalysis records back from -- in '55, 57, 58,
9 also some chest X-rays back then. I guess
10 that's what made us wonder why he didn't have
11 external monitoring records for back in the
12 '50s.

13 **MR. HINNEFELD:** Yeah, the -- the bioassay
14 records were like terminations, and by and
15 large they were annuals, which occurred at the
16 annual physical. And I believe everybody got
17 annual physicals at that time, which -- you
18 know, at that time would have included the X-
19 rays.

20 **MS. BEHLING:** Okay.

21 **MR. HINNEFELD:** The code on the bioassay record
22 tells what kind of bioassay it is. Now these
23 particular -- you know, some of the earliest
24 bioassay records in this case, as I recall,
25 were in the medical record, on a medical record

1 card, so they don't necessarily carry that code
2 that later bioassay records carried, but they
3 looked like -- there was a short period of
4 employment. There was like a hire and a
5 termination bioassay sample there, and in
6 general -- I think a couple of them were marked
7 A, there was an A, which I think might mean
8 annual, meaning it was an annual sample.

9 **MS. BEHLING:** Okay. And in fact I'm looking
10 back at our checklist and this case was
11 compensated, so it's -- it's a --

12 **MR. HINNEFELD:** Yeah.

13 **MS. BEHLING:** We can move on.

14 **MR. GRIFFON:** Just -- just one -- one -- one
15 other thing on that, and that -- the fact that
16 it's compensated may make this less of a
17 concern, but the -- the question of did -- is
18 this consistent with -- this is more of a site
19 profile question actually and that it's
20 compensated makes this probably irrelevant, but
21 you -- you make this conclusion about, you
22 know, that they didn't have data. Is that
23 consistent with the monitoring policies before
24 '60?

25 **MR. HINNEFELD:** Well --

1 **MR. GRIFFON:** In other words, was it --

2 **MR. HINNEFELD:** Because --

3 **MR. GRIFFON:** It does say the job title
4 suggests that -- that --

5 **MR. HINNEFELD:** Because of --

6 **MR. GRIFFON:** It makes sense, but --

7 **MR. HINNEFELD:** Because of my conflict at this
8 site --

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

10 **MR. HINNEFELD:** -- information I know because
11 of conflict at that site, I know that early on
12 at that site there was a policy that women --
13 this is a woman -- women were not allowed to go
14 in the production area and therefore were not
15 badged.

16 **MR. GRIFFON:** Okay.

17 **MR. HINNEFELD:** Okay, 94 -- yeah, this is a
18 compensable case. 94.2 is a finding about not
19 being able to reproduce the on-site ambient
20 dose, and in fact --

21 **MR. GRIFFON:** Can I ask -- just -- is there any
22 action on that one? I just wanted --

23 **MR. HINNEFELD:** Oh, on 94.1?

24 **MR. GRIFFON:** Kathy, was there any follow-up
25 action needed on that one?

1 **MS. BEHLING:** No, not --

2 **MR. GRIFFON:** On 94.1?

3 **MS. BEHLING:** -- for this particular case.

4 However, you did bring up an issue that it is -

5 - this is something that should be looked at in

6 the site profile, and maybe there should be

7 some follow-up, I'm not sure. Did I not

8 understand your response -- Stu's response?

9 **MR. GRIFFON:** Well, we do have a site profile
10 review underway.

11 **MR. HINNEFELD:** Yeah, there is one underway,
12 and I believe -- what I tried -- I tried to
13 give a reason for why this person did not have
14 a monitoring record at the beginning of her
15 employment.

16 **MR. GRIFFON:** Right.

17 **MS. BEHLING:** Okay. So -- okay, so it's not
18 necessarily a site profile issue.

19 **MR. HINNEFELD:** I don't believe so, and -- and
20 again, because of my conflict --

21 **MS. BEHLING:** Okay.

22 **MR. HINNEFELD:** -- and the knowledge of what's
23 done when we get a record from Fernald --

24 **MS. BEHLING:** Okay, this --

25 **MR. HINNEFELD:** -- I'm pretty confident what --

1 we get each badge reading that was done there.

2 **MS. BEHLING:** Okay then, Mark, I would say no
3 further action on that.

4 **MR. HINNEFELD:** Each -- each badge reading on
5 an employee that was done there. No con-- if
6 you have a contractor that worked at Fernald, I
7 won't guarantee that what we get from Fernald
8 is every badge worn by that contract-- by that
9 subcontractor, construction subcontractor.

10 Again, information from my conflict.

11 94.2 questions the ambient dose that we
12 assigned to this case, saying that it might be
13 too high based on this person's work location.
14 And we felt -- we used the site average, and
15 there's some areas where -- that are lower than
16 the average. Our view is this site was
17 relatively small. Other than not being able to
18 go into the production area at certain times,
19 people would generally move about the other
20 areas of this site and that we didn't feel that
21 -- we didn't feel comfortable saying a person
22 could have only been exposed to the ambient in
23 this one area when in fact we believe that a
24 site-wide average is a better approximation of
25 what they may have been exposed to during their

1 work (unintelligible).

2 **DR. MAURO:** And this is Fernald?

3 **MR. HINNEFELD:** This is Fernald.

4 **DR. MAURO:** To the extent that it's any value,
5 I know that the -- one of the issues on the
6 Fernald site profile review is the methodology
7 used to reconst-- to represent outdoor
8 exposures to, for example, emissions from the
9 silos.

10 **MR. HINNEFELD:** Okay.

11 **DR. MAURO:** We -- we do -- I know we do have a
12 -- several issues on the table that's
13 undergoing review. Now if -- I don't know
14 whether this plays into that or not. Looks
15 like -- other words, some question came up of
16 how the ambient dose was calculated. Answer is
17 well, we think it's okay. However, right now
18 there is an issue being aired on Fernald. I'm
19 not quite sure how best to deal with that in
20 this context.

21 **MR. HINNEFELD:** Well, this case was a
22 compensable case --

23 **DR. MAURO:** Okay, so --

24 **MR. HINNEFELD:** -- so if something changes, we
25 wouldn't try to go back and get this one.

1 **DR. MAURO:** Sure, gotcha, okay.

2 **MR. GRIFFON:** Yeah, I -- I don't think this
3 necessarily refers to that same issue. It's on
4 -- it's on the matrix --

5 **DR. MAURO:** It's on the matrix.

6 **MR. GRIFFON:** -- for Fernald anyway. Right?

7 **DR. MAURO:** Yes, it is, absolutely.

8 **MR. GRIFFON:** And I don't think thi-- this is
9 really questioning -- given that this person
10 was in one location, maybe they shouldn't have
11 -- apply at all. Right?

12 **MR. HINNEFELD:** Maybe we shouldn't have used
13 the site average --

14 **MR. GRIFFON:** You were more conservative than
15 they -- that --

16 **MR. HINNEFELD:** Yeah, maybe shouldn't have used
17 the site average, maybe should have used what
18 was published for the ambient for that
19 location.

20 **MR. GRIFFON:** So I don't think it's a follow-up
21 site profile. I think it's a no -- no action.

22 **MS. BEHLING:** Right.

23 **MR. GRIFFON:** Let's close out as many as we
24 can.

25 **MS. MUNN:** Let's do, please.

1 **MR. HINNEFELD:** Okay, that takes us to number
2 95, which is a Hanford case. 95.1 questions
3 whether we accounted for all the missed neutron
4 dose. Our response here -- our initial
5 response kind of speaks to site practices and
6 identification of, at least in some places, of
7 a work location associated with this person
8 that would indicate it was not a neutron
9 exposure area.

10 **MS. MUNN:** (Unintelligible) unlikely.

11 **MR. HINNEFELD:** So it's a fairly -- I mean this
12 -- this response was just provided, and I don't
13 know, Kathy, did you want time to -- to look at
14 this or --

15 **MS. BEHLING:** Yeah, I have not digested this
16 one yet because we had a number of -- we had
17 four or so reasons that we thought this
18 individual may have been exposed to neutrons --

19 **MR. HINNEFELD:** Yeah.

20 **MS. BEHLING:** -- and I haven't had a chance to
21 look at -- to assess all of your responses.

22 **MR. HINNEFELD:** I think the response tries to
23 speak to those four.

24 **MS. BEHLING:** To each four, okay -- to each of
25 the four. All right, if I could look at this

1 and get back to you.

2 **MR. HINNEFELD:** Okay.

3 **MR. GRIFFON:** 95.2 (unintelligible) response
4 (unintelligible) ambient. Is that right?

5 **MS. BEHLING:** Yeah, this is the same issue with
6 the Monte Carlo -- applying the Monte Carlo to
7 the onsite ambient.

8 **MR. HINNEFELD:** Okay, so it's okay then?

9 **MS. BEHLING:** It's okay, yes.

10 **MR. GRIFFON:** Can we -- I'm just -- 95.2 is
11 okay.

12 **MS. BEHLING:** Uh-huh.

13 **MR. GRIFFON:** Can we -- Ray's requested a --

14 **MR. HINNEFELD:** Yeah, yeah --

15 **MR. GRIFFON:** -- break here at this point.

16 **MR. HINNEFELD:** -- man, I could use one myself.

17 **MR. ELLIOTT:** We're going to take a -- oh, go
18 ahead, Mark.

19 **MR. GRIFFON:** We're just going to mute you and
20 we'll be back in ten minutes.

21 **MS. BEHLING:** Okay.

22 **MR. GRIFFON:** Right.

23 (Whereupon, a recess was taken from 2:28 p.m.
24 to 2:40 p.m.)

25 **MR. GRIFFON:** Where are -- we're losing people

1 but that's all right. Okay.

2 **MR. ELLIOTT:** We're still with a quorum.

3 **MR. GRIFFON:** All right. Kathy and Hans?
4 You're probably the only two with us, but are
5 you back on? Kathy or Hans?

6 **MS. MUNN:** Anybody?

7 **MS. BEHLING:** I'm here.

8 **MR. GRIFFON:** We're ready to reconvene here.
9 We're almost through the matrix, though.
10 That's good.

11 **MS. BEHLING:** Okay. Now can I start out with a
12 comment?

13 **MR. GRIFFON:** Sure.

14 **MS. BEHLING:** I have to clear Hans's name.
15 During your break --

16 **MR. ELLIOTT:** You had a sidebar during the
17 break.

18 **MS. BEHLING:** Yes. If we go back to finding
19 93.2 that we were discussing these lumbar spine
20 radiographs at Fernald, we did go back and
21 Hans's comment -- I -- I -- that he made and I
22 misunderstood it, he indicated the fact that if
23 the site profile actually has values for a
24 lumbar spine, then it would indicate that they
25 have a lumbar -- that they have a program for

1 screening. And we looked at the site profile
2 and there is a statement in here that states
3 that it was also noted in reviewing claimant
4 files that lumbar spine X-rays were taken
5 primarily for construction workers and
6 laborers. So it -- it -- so we're going to
7 have to reassess these lumbar spine cases.

8 **MR. HINNEFELD:** Okay, we -- I think we took an
9 action to make sure that we were confident in
10 our determinations. So we will provide --

11 **MR. GRIFFON:** So that is -- that is an action?

12 **MR. HINNEFELD:** Yeah.

13 **MS. BEHLING:** Okay. But I -- I wrongly accused
14 him so I apologize.

15 **MS. MUNN:** So both NIOSH and SC&A are going
16 to...

17 **MR. HINNEFELD:** Well, we -- certainly we will.
18 We'll go back and assess our (unintelligible).

19 **MS. MUNN:** (Unintelligible) --

20 **MR. GRIFFON:** Yeah.

21 **MS. MUNN:** -- working for.

22 **MR. GRIFFON:** Okay, so now we're back up to
23 96.1. Right?

24 **MS. BEHLING:** Yes.

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

1 **MS. BEHLING:** And John, I -- is John still
2 there?

3 **DR. MAURO:** Yes, I am.

4 **MS. BEHLING:** John Mauro? Okay. John, you can
5 maybe help me out on this one a little bit. I
6 looked closely -- I believe that you -- you
7 worked on this case.

8 **DR. MAURO:** Which -- which -- which site is
9 this?

10 **MR. HINNEFELD:** Portsmouth.

11 **MS. BEHLING:** Portsmouth.

12 **DR. MAURO:** Portsmouth?

13 **MS. BEHLING:** Portsmouth.

14 **DR. MAURO:** Okay.

15 **MS. BEHLING:** So you can look through this.

16 **MR. HINNEFELD:** Okay, 9--

17 **MS. BEHLING:** Go ahead.

18 **MR. HINNEFELD:** You want me to start again?

19 **MS. BEHLING:** Yes, please do.

20 **MR. HINNEFELD:** 96.1 is failure to properly
21 convert recorded photon dose to organ dose.
22 Let me make sure I read the finding here.
23 Okay, the finding questions the use of the --
24 the photon -- or the exposure to organ dose,
25 DCF value, as I read this. That the DCF that

1 was used is the one that related to AP 30 to
2 250 keV photons and that the -- and the DCF
3 that's cited is the one that converts exposure
4 to organ dose, when in fact the site's
5 dosimetry records reports the dose in rem or
6 dose -- well, implying that you could not -- if
7 that were the measured value, then it would be
8 a different DCF. It would be the dose
9 equivalent or --

10 **DR. MAURO:** HP-10.

11 **MR. HINNEFELD:** -- HP-10 to organ dose DCF.

12 **DR. MAURO:** That was the concern.

13 **MR. HINNEFELD:** I guess our view was, even
14 though it's convention for a number of sites to
15 report those doses in rem, if it was measured
16 with a film badge -- based on the use of the
17 film badge and likely calibration operations at
18 that time -- you should use the Roentgen or
19 exposure to organ dose conversion, despite the
20 fact that they would say in their records it
21 was a rem because people -- people expect --

22 **DR. MAURO:** It was really a Roentgen.

23 **MR. HINNEFELD:** -- it was really a Roentgen as
24 measured, and they called it a rem 'cause it
25 was a convention -- a rem's a Roentgen when

1 you're working at the site --

2 **DR. MAURO:** Okay.

3 **MR. HINNEFELD:** -- and so people expected their
4 doses to be in rem, and so that's why it's
5 reported that way. That's why it's reported
6 that way, but we believe -- see, being that it
7 was measured with film, Roentgen is the
8 appropriate DCF to use -- and it is higher.
9 The Roentgen DCF is higher than the rem.

10 **DR. MAURO:** (Unintelligible)

11 **MS. BEHLING:** And I do agree with that.

12 **DR. MAURO:** Yeah.

13 **MS. BEHLING:** With NIOSH's response.

14 **MR. HINNEFELD:** Okay.

15 **MR. GRIFFON:** Okay.

16 **MR. HINNEFELD:** Okay, 96.2 as to do with
17 inappropriate methods used for derived recorded
18 skin dose.

19 **MS. BEHLING:** I guess in this particular case,
20 if I can interject here, what we felt would be
21 the correct method -- method for calculating
22 the skin dose, at least based on the external
23 implementation guide, is since the shallow dose
24 in this case was reported, that you just take
25 the shallow dose and that becomes your skin

1 dose and you do a DCF of one -- and that is in
2 Appendix B of the implementation guide. The
3 only thing that I see that -- now that I
4 reassess this case, I believe we were incorrect
5 in assuming that there should have been a
6 calibration adjustment factor of 1.165 added to
7 this. If you go into the site profile, which I
8 did in preparation for this, it indicates that
9 that 1.165 calibration factor should be --
10 adjustment factor should be applied to deep
11 dose and not the shallow dose. So we were
12 incorrect in assuming that the calibration
13 adjustment factor should have been applied.
14 However, we did question the method that was
15 used for calculated skin dose. Ultimately
16 NIOSH did arrive at a higher dose than we would
17 have. We were just questioning their methods.
18 **MR. HINNEFELD:** Okay. I know you've just seen
19 our response, but in -- in -- with relation to
20 our response and what we've described here in
21 response, does that answer the question or is
22 there more information to be generated, or do
23 you want to -- need time to look -- evaluate
24 the response in terms of the finding or --
25 where are we at on that?

1 **MS. BEHLING:** Maybe I'll just look at this
2 response again, because I'm just questioning is
3 the -- is -- is this an approach that is
4 typically used by NIOSH, which we do often see.
5 And like I said, it is inappropriate based on
6 the implementation guide and the fact that once
7 you do have shallow dose reported, just use
8 that dose rather than applying correc-- DCF
9 values to the -- to the -- to the deep dose.
10 Now Hans wants to pick up here because he feels
11 strongly about this issue, too. It's just the
12 method used for calculating your skin dose.

13 **DR. BEHLING:** Yeah, I -- I always, and I think
14 we've repeatedly encountered this. I think in
15 the implementation guide in Appendix B under
16 the skin, there's usually -- there's a footnote
17 there that says if you have a shallow dose, a
18 seven milligram per centimeter square dose, use
19 that and there's no need there for to convert
20 an HP-10 dose into -- by means of a DCF into a
21 skin dose. And -- and I think we've gone
22 through that discussion any number of times.
23 It's probably an insignificant difference, but
24 it's just a protocol that I can't justify in
25 doing, especially when we're talking about

1 efficiency measures, that would then force you
2 to do all kinds of calculations when in fact
3 all one has to do is look at the 7 milligram
4 dose or shallow dose and say that's the skin
5 dose. And -- and I don't recall exactly --
6 maybe Stu can enlighten me and -- and refresh
7 my memory as to why one would not use that
8 approach.

9 **MR. HINNEFELD:** Well, I don't remember if it's
10 applicable to this case in general or not, but
11 as -- as a general rule, for a -- for a skin
12 dose, you would -- the reason that you would
13 divide it into its beta and photon components,
14 particularly if you're using a 30 to 250 keV
15 photon, if that's the energy of the photon, is
16 that the radiation effectiveness factor for
17 that range of photons is higher than the
18 radiation effectiveness factor for -- for beta
19 particles. So that even though you have a
20 shallow dose that's say 480-some millirem,
21 that's 430 millirem comes from the deep or the
22 photon dose and 60 millirem comes from a non-
23 penetrating or beta dose, that if you just used
24 that 490 and applied it as a beta dose, for
25 instance, and the photon exposure was in the 30

1 to 250 range, the REF for your dose will be
2 lower than it would be if you applied the -- if
3 -- if you broke it into the various components.
4 Conversely, if you used the shallow dose and
5 applied -- called it 30 to 250 keV photons, you
6 would use the higher REF for the whole portion
7 as opposed to just using a higher REF for the
8 photon portion and using the lower REF for the
9 beta component. So there is -- there's a --
10 reasons why that shallow dose is -- is broken
11 into the component doses -- I'm looking at
12 Scott and he's not giving me too dirty of a
13 look -- and that's why. I mean despite the
14 fact that yeah, shallow dose is shallow dose,
15 and I guess if you were -- if the -- if the
16 photon dose were from photons greater than 250
17 keV, that -- that REF is in fact equivalent to
18 the beta REF. So in that case it would in fact
19 be -- as -- a meaningless exercise to divide it
20 into those component doses and then put an R--
21 'cause you could just put it in as one or the
22 other and get the same outcome. So that's --
23 that's the reason why frequently a skin dose is
24 broken into a shallow -- or a beta component
25 and --

1 **DR. BEHLING:** Well, I -- I understand and --
2 and I guess if -- if that's the case, then
3 maybe that footnote should be stricken in the
4 implementation guide that suggests that if
5 there is an available recorded shallow dose, a
6 skin dose, for -- for the person to use that
7 because it does become a conflict where you
8 have to understand that there are now multiple
9 options in which this skin dose can be
10 calculated, break them apart or just simply
11 using the shallow dose as it stands.

12 **MR. HINNEFELD:** Okay.

13 **MS. MUNN:** So there we need to change the
14 footnote in the implementation guide.

15 **MR. HINNEFELD:** Right.

16 **MS. MUNN:** Is that what I'm hearing?

17 **MR. HINNEFELD:** That's what I hear.

18 **MS. BEHLING:** Uh-huh.

19 **MR. GRIFFON:** Kathy, did you still want time to
20 review that or -- or --

21 **MS. BEHLING:** No. No, that -- that resolves
22 it.

23 **MR. GRIFFON:** It's just -- okay, that'll
24 resolve it. Good.

25 **MR. HINNEFELD:** Okay, that finishes 96.

1 **MR. GRIFFON:** Can I ask one question? At the
2 bottom of 96 there's a mention of neutrons.
3 What's that all about? Since doses from
4 neutrons...

5 **MS. BEHLING:** I don't know.

6 **MR. HINNEFELD:** I don't know what that -- I
7 don't know what I was thinking.

8 **MR. GRIFFON:** Yeah, I just didn't understand
9 that at all. Did that get cut and pasted some-
10 - inadvertently or...

11 **MR. HINNEFELD:** Oh, I think I know what it is,
12 is -- is 96 a greater than -- greater than 50
13 percenter?

14 **DR. MAURO:** Oh, you didn't bother
15 (unintelligible).

16 **MS. BEHLING:** It is greater than 50 percent.

17 **MR. HINNEFELD:** Okay. So if there is in fact a
18 mistake here and our dose was higher than what
19 it should have been, there's a component of the
20 dose that was not included, so that since it
21 was an underestimate we don't feel like it
22 would be necessary (unintelligible) to go back
23 and (unintelligible) compensated, we
24 (unintelligible) go look at it anyway, we
25 wouldn't necessarily pull it back.

1 **MR. GRIFFON:** All right.

2 **MR. HINNEFELD:** That's -- that's why I put that
3 in there.

4 97 and 98 are my favorite numbers in this -- in
5 the set because there are no findings.

6 **MR. GRIFFON:** Can you do those quickly?

7 **MR. HINNEFELD:** 97, in case anybody's
8 interested, was Lawrence Livermore and 98 was
9 the Elk River Reactor Site.

10 99 is Pantex. Okay, 99.1 is our favorite OTIB-
11 8 finding. Correct?

12 **MS. BEHLING:** That's correct.

13 **MR. HINNEFELD:** Okay. We've addressed that
14 several times. OTIB-8 has in fact been revised
15 --

16 **MR. GRIFFON:** Could -- is that --

17 **MR. HINNEFELD:** -- since that time.

18 **MR. GRIFFON:** Yeah, OTIB-8's been revised. Did
19 that result in any PER or -- or...

20 **MR. HINNEFELD:** Well, no, because this was a --
21 this was a clarity issue and it was
22 consistently -- the -- it was consistently used
23 higher, the dose was consistently higher --

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

25 **MR. HINNEFELD:** -- than the -- what I believe

1 the correct reading of it should have been.

2 **MS. BEHLING:** That's correct.

3 **MR. GRIFFON:** (Unintelligible) a refresher on
4 that. Okay.

5 **MR. HINNEFELD:** And 99.2 is that same category.

6 **MS. BEHLING:** That's right.

7 **MR. GRIFFON:** So no -- no further action on
8 these?

9 **MS. BEHLING:** No.

10 **MS. MUNN:** (Unintelligible)

11 **MS. BEHLING:** In fact what I've been doing on
12 our dose reconstruction reports is putting an
13 asterisk in and identifying the fact that this
14 is an issue that's being -- these are issues
15 that have been resolved.

16 **MR. GRIFFON:** Resolved, right. Yeah.

17 **MR. HINNEFELD:** 99.3 is improper organ dose
18 selected for estimating occupational medical
19 dose. Yes, that's true. The dose
20 reconstruction notes that it was an intentional
21 overestimate. And granted, it's hard to say
22 that it's more efficient to choose one rather
23 than another. We have since instructed our
24 contractor and adopted the approach that
25 overestimates are -- should be used only when

1 it provides clear efficiency, not just because
2 you can. (Unintelligible) the findings we've
3 been through as well.

4 99.4 is the use of improper hypothetical intake
5 model. Again, I believe this is -- yeah, goes
6 to the colon was used rather than the actual
7 target organ. That -- that's the same -- we've
8 addressed that a number of times. That
9 finishes 99.

10 100 is from Oak Ridge National Laboratory.

11 Number -- findings number one and .2 are the
12 OTIB-8 findings again, same -- like 99.1.

13 Finding 100.3 is the same improper selection of
14 organ dose for occupational medical, the same
15 issue that was raised in 99.3.

16 100.4, reviewer questions whether NIOSH
17 properly addressed CATI-identified dose limit
18 issue. And here we have a bit of an involved
19 response. It has to do with the investigation
20 -- site investigations that were done. And I
21 guess I'm a little bit at a loss here on the
22 specifics of this case, so I'm a little bit at
23 a loss as to what exactly the CATI said and --

24 **MS. BEHLING:** Yeah, and I didn't get a chance
25 to go back to the CATI report on this one,

1 either.

2 **MR. GRIFFON:** (Unintelligible) pocket
3 dosimeters or...

4 **MR. HINNEFELD:** Well, NIOSH -- did NIOSH
5 properly handle the issue related to
6 potentially reaching a dose limit as described
7 below. There are numerous dosimetry records
8 that lack dates and dose results. Due to this
9 lack of information on the data provided, SC&A
10 also questions whether DOE has provided all the
11 available dose data. In addition, there are
12 records in the file indicating that meters were
13 lost or not turned in. The doses -- meters in
14 question mark or in paren-- quotations. The
15 doses associated with these events were
16 assessed as zero. However, no explanation for
17 this assessment is included. Based on these
18 questionable dosimetry records and
19 identification of missing dosimeters, SC&A is
20 recommending that NIOSH attempt to collect
21 additional dosimetry data that may help to
22 clarify the state-- claimant's statement.

23 **MR. GRIFFON:** There wa-- di...

24 **MR. HINNEFELD:** Well --

25 **MR. GRIFFON:** I mean is this an early time

1 frame for this employee?

2 **MR. HINNEFELD:** I think this is a pretty early
3 one. Let's see --

4 **MR. GRIFFON:** 'Cause I know -- I know for sure
5 in the early years there were a lot of
6 questions about pocket dosimetry and the
7 results at X-10 in the locked -- they were --
8 at least from interviews I did down there,
9 there was a lot of accounts of wearing pocket
10 dosimeters but not having a -- a badge on at
11 the time and the pocket dosimetries were logged
12 but they never became part of their permanent
13 record (unintelligible) -- I know that
14 allegation's been out there and this might be
15 related.

16 **MR. SHARFI:** This person -- this person --

17 **UNIDENTIFIED:** (Unintelligible) coworker issue
18 --

19 **MR. GRIFFON:** I don't know. It says meters,
20 though. I don't know what meters means.

21 **MS. MUNN:** (Unintelligible) too, but --

22 **MR. HINNEFELD:** This person didn't start till
23 1975.

24 **MS. MUNN:** (Unintelligible) --

25 **MR. GRIFFON:** Oh, '75, no, that's -- that's

1 after that --

2 **MR. HINNEFELD:** I think meter -- meter, to me -
3 - I think at Oak Ridge, meter was a
4 colloquialism for the badge, for film badge or
5 whatever badge you were wearing.

6 **MS. MUNN:** (Unintelligible) '70s?

7 **MR. HINNEFELD:** Yeah, good ol' boys down there.
8 They -- as I understand it, the -- the
9 instances of the -- the badge not returned or
10 meter not returned or meter loss were instances
11 that were investigated. As I understand the
12 situation, there were investigation reports in
13 the -- in the file from ORNL about how they
14 arrived at suggested dose. And if in fact they
15 -- they recommended a zero be put in places, it
16 was probably due to whatever they considered in
17 their investigation, which may have been
18 previous and post months exposures or previous
19 months' exposures and similar work -- you know,
20 however people do dosimetry investigation. So
21 I believe, though, that the missing or not
22 returned issues were investigated. At the Oak
23 Ridge sites as a general rule, if we have -- if
24 we've sent them the right Social Security
25 number, we generally get what they had. And

1 additional requests later on, especially if we
2 get anything, we generally get a complete
3 response. That's kind of --

4 **MR. GRIFFON:** Kathy --

5 **MR. HINNEFELD:** -- been our experience at --

6 **MR. GRIFFON:** Kathy, it sounds like you may
7 have to look at this a little closer and see if
8 there's -- come -- maybe come back with
9 specifics if --

10 **MS. BEHLING:** Okay, I can do that.

11 **MR. GRIFFON:** -- if there is -- if there's
12 times when they had these quote, unquote, lost
13 meters and you can't -- can or cannot identify
14 investigation reports in the -- in the file,
15 maybe can -- you can come back with specifics
16 on that.

17 **MS. BEHLING:** Okay, I'll do that.

18 **MR. GRIFFON:** Otherwise, it sounds like a
19 reasonable response, but we should --

20 **MS. BEHLING:** I -- I think so, too.

21 **MR. GRIFFON:** -- take it -- take it to ground,
22 yeah.

23 **MR. HINNEFELD:** Yeah.

24 **MR. GRIFFON:** Yeah.

25 **MS. BEHLING:** No, I agree with that. And like

1 Stu indicated, the individual did work -- start
2 working in the '70s and so -- but I -- but I'll
3 look at this a little bit closer.

4 **MR. GRIFFON:** And that's the end of the matrix.

5 **DR INSTRUCTIONS**

6 We have one -- one more agenda item. I
7 -- I don't think it'll be a -- I really just
8 wanted to get a preliminary discussion on this
9 and I don't know if, Mike or Wanda, if you have
10 these things with you, but Stu did mail out
11 some -- some examples of these -- I don't think
12 -- calling them everything, dose -- dose -- DR
13 instructions, DR guides. I think they -- they
14 have various notes, depending on the site -- or
15 various titles, depending on the site. So the
16 -- I guess the -- the reason I -- I raise this
17 as an issue for the subcommittee and for the
18 Board is that I -- I found some of these on the
19 O drive and -- when we were looking at Rocky
20 Flats, actually, it really came to my attention
21 that they were very instructive on -- on --
22 instead of trying to -- to guess what the dose
23 reconstructioner (sic) thought process was, you
24 actually sort of have this template there.
25 It's not -- it's not completely prescriptive --

1 correct me if I'm wrong. It's not completely
2 prescriptive, but it does give you a sense of
3 if you have this, then you have these options;
4 if you have this, then you have these options.
5 And it -- in some cases it steps you through
6 what TIBs or what -- and -- and it might even
7 give sort of a sense of the hierarchy to -- to
8 --

9 **MR. HINNEFELD:** Yeah, to be honest, I am not
10 very familiar with them at all. Maybe --

11 **MR. GRIFFON:** Right.

12 **MR. HINNEFELD:** -- Scott might have some
13 familiarity with them.

14 **MS. MUNN:** Well, when did you send those out?

15 **MR. GRIFFON:** Yeah, yeah, so I -- I just
16 wondered if -- if these were used as part of
17 the dose reconstruction, my sense would be that
18 -- that -- and what -- from what I heard from
19 Mutty Shafi (sic) at the Rocky meeting, and he
20 was saying -- and I think Jim's saying, also,
21 that these aren't procedures necessarily.

22 These are -- these are updated on conference
23 calls sometimes with the dose reconstructors
24 and you might have several versions of them in
25 -- you know, real-time corrections to these

1 things, and they're really used in-house. The
2 on-- and I wouldn't suggest that we need to
3 review them as procedures by the Advisory
4 Board. But what I was thinking is -- is why --
5 why aren't they part -- it would be nice if
6 they were part of the claimant file.

7 **DR. MAURO:** Absolutely.

8 **MR. GRIFFON:** That way there's none of this --
9 'cause sometimes I think we run into these
10 cases where we have sort of a gray line. I
11 mean I even -- and this is nothing against any
12 of the work we're doing here, but you know,
13 sometimes we're -- we're looking at these and
14 we're saying well, we think the dose
15 reconstructioner (sic) might have been doing
16 this or might -- you know, and -- and it seems
17 consistent with the earlier protocols. Well,
18 if we had this in there, I think we -- it might
19 still not be a black and white -- it might not
20 be a sharp line, but it's a sharper line, I
21 think, to --

22 **MS. MUNN:** Yeah.

23 **MR. GRIFFON:** -- sort of evaluate the --

24 **MR. ELLIOTT:** It gives you a better
25 understanding --

1 **MR. GRIFFON:** -- the cases.

2 **MR. ELLIOTT:** -- of the thought --

3 **MR. GRIFFON:** Yeah.

4 **MR. ELLIOTT:** -- process that the reconstructor
5 used, but I've --

6 **MR. GRIFFON:** Well --

7 **MR. ELLIOTT:** -- already cautioned you that
8 these came about in the -- that evolution and
9 development relatively recently. The first and
10 second set of claims that you guys reviewed
11 probably didn't have any of those --

12 **MR. GRIFFON:** Right, that's fine.

13 **MR. ELLIOTT:** -- kind of guidelines or
14 instructions. They probably dealt with the
15 site profiles, Technical Basis Documents and
16 whatever training occurred --

17 **MR. GRIFFON:** Yeah.

18 **MR. ELLIOTT:** -- to implement the use of those.
19 So just keep those in mind that if you pick
20 from the pool of claims --

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

22 **MR. ELLIOTT:** -- randomly, you may find some
23 that --

24 **MR. GRIFFON:** Well, I gue-- I --

25 **MR. ELLIOTT:** But you're point's well taken.

1 **MR. GRIFFON:** I guess that.

2 **MR. ELLIOTT:** Maybe we should put that into the

3 --

4 **MR. GRIFFON:** Yeah.

5 **MR. ELLIOTT:** -- to the -- to the file that you
6 folks --

7 **MR. GRIFFON:** I guess --

8 **MR. ELLIOTT:** -- are reviewing and see how it
9 goes.

10 **MR. GRIFFON:** I guess there were two questions
11 I had, and one was -- one thing I think is a
12 lot easier for us to offer as a recommendation
13 for the -- for the full Board to -- to give to
14 NIOSH, which would be to recommend that -- that
15 for all cases going forward, that these things
16 be added to the -- to the claim file.

17 The second one's a little more -- a little more
18 labor, and may not be doable, and that would be
19 to do it retro-- retroactively. And that would
20 be probably complicated. I'm not sure --

21 **MR. ELLIOTT:** I would be a little reluctant to
22 --

23 **MR. GRIFFON:** I'm not sure if you can do it,
24 right.

25 **MR. ELLIOTT:** -- agree to take that on.

1 **MR. GRIFFON:** Right.

2 **DR. MAURO:** Well, this goes back to a while
3 ago, one of the points we made was the road map
4 --

5 **MR. GRIFFON:** Yeah.

6 **DR. MAURO:** -- whereby one of the first
7 challenges we encountered was my god, we can't
8 figure out -- and it was taking us a lot of
9 time --

10 **MR. GRIFFON:** Right.

11 **DR. MAURO:** -- to figure it out.

12 **MS. MUNN:** (Unintelligible)

13 **DR. MAURO:** Yeah, and -- and to the extent to
14 which your folks now -- of course the ones
15 they're doing right now could get -- insert
16 that road map, but --

17 **MR. GRIFFON:** Right.

18 **DR. MAURO:** -- with an eye toward oh, there's
19 going to be people looking at this, who are
20 going to try to reproduce the numbers.

21 **MR. GRIFFON:** Yeah.

22 **DR. MAURO:** Also the extent to which the cases
23 are being assembled at this time, the next set
24 of 32, for example, which will be coming down
25 the pipeline. I don't know how difficult it

1 would be for someone to say okay, did we really
2 tell the story or did we leave a lot to the
3 imagination.

4 **MR. HINNEFELD:** Okay.

5 **DR. MAURO:** I know that -- I know that our
6 folks -- I work with them all the time.
7 Someone's saying my god, I've been working on
8 this thing for three days, I can't figure out
9 what they did. And -- and in fact, I could --
10 I posed this question to the Board, is there
11 any problem with our people calling up your
12 dose reconstructors and say listen, what did
13 you do here?

14 **MR. ELLIOTT:** You need to go through us to do
15 that.

16 **DR. MAURO:** Need to go through -- but I think
17 that would -- that might be a fix. That might
18 --

19 **MR. ELLIOTT:** I think we should look at this
20 and get back to you on --

21 **MR. GRIFFON:** Yeah, yeah, I'm not --

22 **MR. ELLIOTT:** -- what -- what it's going to
23 take --

24 **MR. GRIFFON:** -- asking for an answer today,
25 but --

1 **MR. ELLIOTT:** -- what it's going to take for us
2 to make sure that, as we go forward in the
3 review of dose reconstructions that have been
4 completed, we add that thing to it. Whether or
5 not we need to -- we should look at also
6 whether we -- it would make sense to -- any
7 claim that gets completed from this point on,
8 we should --

9 **MR. GRIFFON:** Right.

10 **MR. ELLIOTT:** -- include that in there, the --

11 **MR. GRIFFON:** That -- that recommendation --

12 **MR. ELLIOTT:** -- the analysis record. I don't
13 know.

14 **MR. GRIFFON:** -- seems a lot easier, obviously,
15 in the -- yeah.

16 **MR. ELLIOTT:** Let us look at that and we'll get
17 back to you.

18 **DR. MAURO:** Early on --

19 **MR. GRIFFON:** Wanda, and then --

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

21 **MS. MUNN:** I just -- just wanted to make sure
22 that I'm looking at the same thing I think
23 you're talking about.

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

25 **MS. MUNN:** March 15 --

1 **MR. GRIFFON:** A zip file.

2 **MS. MUNN:** -- a zip drive -- a zip file. It
3 started off with dose reconstruction notes
4 (unintelligible) Mound and --

5 **MR. GRIFFON:** (Unintelligible)

6 **MS. MUNN:** -- then basic guidelines, Amchitka
7 guidelines, FMPC dose reconstruction notes --
8 that's it?

9 **MR. GRIFFON:** That sounds like the one, yeah.
10 Yeah, sorry.

11 **MS. MUNN:** That's all right, I just wanted to
12 make sure I had that.

13 **MR. ELLIOTT:** Those are examples.

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

15 **MR. ELLIOTT:** They're not to be considered --

16 **MR. GRIFFON:** Exhaustive.

17 **MR. ELLIOTT:** -- all-inclusive or exhaustive
18 type of guidance or --

19 **MR. HINNEFELD:** I -- I don't know for sure.

20 **MR. ELLIOTT:** (Unintelligible)

21 **MR. GRIFFON:** No, no, they're not exhaustive.
22 Okay? I didn't expect it to be. I wanted to
23 examine it just to (unintelligible) --

24 **MR. ELLIOTT:** They're relevant to those --

25 **MR. GRIFFON:** Yeah.

1 **MR. ELLIOTT:** -- case situations.

2 **MS. MUNN:** Those specific cases, yeah.

3 **MR. GRIFFON:** Right.

4 **MS. MUNN:** That's what I had interpreted at the
5 time I read them, that they were
6 (unintelligible).

7 **MR. GRIFFON:** Yeah, so I think if -- if -- I --
8 I don't think we need to take the discussion
9 much fur-- I just wanted people to understand
10 what these things were, have a couple of
11 examples to kind of look at and say oh, yeah, I
12 see what -- you know, I see what these -- how
13 these could help in the audit process. I mean
14 I think it -- I think it would actually
15 expedite some of our -- you know, our review
16 process.

17 **MR. ELLIOTT:** I think it would minimize
18 confusion.

19 **MR. GRIFFON:** Right, exactly. Exactly. So I'm
20 not...

21 **MR. HINNEFELD:** Well, how about --

22 **MR. GRIFFON:** But to do it retroactively, I
23 think, Larry, you're right. You need to
24 examine that 'cause I -- I'm sure it would be
25 difficult. I'm not even sure it's achievable.

1 You know, I -- I know Muttu said that they
2 don't -- they don't, as a course of practice,
3 keep revisions of these things. They just
4 update them. So it might be really hard to
5 figure out, for different time frames, which
6 ones were used, you know. And I don't know
7 that we need to go there, but --

8 **MS. MUNN:** Seems unlikely that we could do
9 that.

10 **MR. GRIFFON:** But going forward, I think it
11 would be nice to have them added, so -- so
12 we'll hold off and maybe hear --

13 **MR. HINNEFELD:** So we're talking about going --

14 **MR. GRIFFON:** Can you give us somewhat of a
15 report at the morning meeting in May -- May --

16 **MR. ELLIOTT:** I think we can do that.

17 **MR. GRIFFON:** -- at the subcommittee in May --

18 **MR. HINNEFELD:** In terms of the do-ability of
19 this or in terms of cases --

20 **MR. ELLIOTT:** Going forward. Not looking back,
21 but going forward.

22 **MR. HINNEFELD:** Not even back to the seventh
23 set, but the last set --

24 **DR. MAURO:** Just going -- just move forward.

25 **MR. HINNEFELD:** Just go with the eighth.

1 **DR. MAURO:** Yeah, we're already
2 (unintelligible) --
3 **MR. ELLIOTT:** On the eighth set --
4 **DR. MAURO:** Although we're --
5 **MR. ELLIOTT:** -- that we deliver and any
6 completed dose reconstructions --
7 **MR. GRIFFON:** Yeah.
8 **MR. ELLIOTT:** -- from this point on.
9 **MR. GRIFFON:** Right.
10 **DR. MAURO:** Or I would point --
11 **MR. ELLIOTT:** What would it take to put -- put
12 this into the --
13 **MR. HINNEFELD:** Into the AR, the analysis
14 record?
15 **MR. GRIFFON:** Yeah, the AR, right.
16 **MR. HINNEFELD:** Yeah, I'll have to get back
17 with you.
18 **MR. GRIFFON:** So for all cases going forward --
19 **MS. HOMOKI-TITUS:** (Unintelligible) the actual
20 dose --
21 **MR. GRIFFON:** -- but just for the selected
22 cases --
23 **MS. HOMOKI-TITUS:** -- record, I'm a little
24 concerned about --
25 **MR. ELLIOTT:** Not in the dose report.

1 **MS. HOMOKI-TITUS:** Okay.

2 **MR. ELLIOTT:** But in the --

3 **MS. HOMOKI-TITUS:** But don't you send the dose
4 record overall to DOL as well?

5 **MR. ELLIOTT:** Yeah.

6 **MS. HOMOKI-TITUS:** I want to talk about that
7 'cause I'm concerned about internal documents
8 that don't normally be made public all of a
9 sudden becoming...

10 **MS. MUNN:** Yeah, I --

11 **MR. ELLIOTT:** Okay.

12 **MR. GRIFFON:** Okay, (unintelligible).

13 **MS. MUNN:** -- I haven't absorbed all the stuff
14 that's in here. I just glanced at them when
15 they came in and -- and I have some concern as
16 to how you would do that in a way that would be
17 helpful to anyone other than probably --

18 **MR. ELLIOTT:** Our people.

19 **MS. MUNN:** -- your people, yeah.

20 **DR. MAURO:** The reality is --

21 **MS. MUNN:** As long as you had access to --

22 **MR. GRIFFON:** But we don't, that's the point --

23 **MS. MUNN:** Yeah, yeah --

24 **MR. GRIFFON:** -- so, you know, yeah, yeah.

25 **MS. MUNN:** -- but if you had access to this

1 information --

2 **MR. GRIFFON:** Right, so how do we keep -- I
3 didn't think about (unintelligible) --

4 **MR. ELLIOTT:** Well, maybe we don't do it for
5 the analysis record but we do it for what gets
6 rolled up for your review.

7 **MS. MUNN:** Right, yeah.

8 **MR. ELLIOTT:** Whatever gets put on the CDs for
9 your review, let's -- that's where
10 (unintelligible) --

11 **MR. GRIFFON:** Yeah, I didn't think about this -
12 - this factor of -- of being in the public
13 realm, but yeah, you're right, Liz, so...

14 **MS. MUNN:** Yeah, internally and in terms of --

15 **MR. GRIFFON:** Yeah, I -- I don't think anyone
16 outside the process --

17 **MS. MUNN:** (Unintelligible) review --

18 **DR. MAURO:** I mean in a way right now we have a
19 process whereby, for example, site profile
20 reviews, we do have steps in the process where
21 after our folks read the site profile we
22 collect some questions, we inter-- interact
23 with you folks, clear up a lot of things, makes
24 life real simple and we zero in on the places
25 where -- to me it's -- on a mini-scale, maybe

1 we should be doing a little bit -- I mean maybe
2 the easiest way is just sort -- allow for this
3 kind of interaction. I know our dose
4 reconstructors (unintelligible) especially some
5 of the newer folks, the ones that haven't
6 benefited from three years of experience, you
7 know, they're -- we're coming up to speed, but
8 the extent to which -- if they could pick up
9 the phone, say I don't understand, for example,
10 you know, why you did this here but you didn't
11 do this here -- I don't know if that's --
12 **MR. ELLIOTT:** Well, you can bring that to us.
13 **DR. MAURO:** We'll bring that to you.
14 **MR. ELLIOTT:** These are our dose
15 reconstructions. I mean I don't want to slight
16 Scott --
17 **DR. MAURO:** No -- no, I understand.
18 **MR. ELLIOTT:** -- and the ORAU team, but you
19 know, OCAS and --
20 **DR. MAURO:** Sure.
21 **MR. ELLIOTT:** -- NIOSH folks sign off on these.
22 We should be able to answer your questions. If
23 not, we should be able to turn to our
24 contractor and get a -- get informed response
25 to answer --

1 **MR. GRIFFON:** I also think there's a benefit to
2 staying a step away, you know, 'cause if you
3 start --

4 **DR. MAURO:** Getting too close.

5 **MR. GRIFFON:** -- having those discussions --

6 **DR. MAURO:** Yeah. Yeah, that's true.

7 **MR. GRIFFON:** -- you know, and you're -- you
8 can start to not think outside the box and not
9 ask questions that you -- you know, so I -- but
10 at least to know -- I think this is kind of the
11 template that -- that would help us to be able
12 to audit the case better. And I agree, it's
13 not much -- not much benefit to other people.
14 But for the internal people reviewing the cases
15 --

16 **MS. MUNN:** Well, and being able to reduce the
17 number of items that --

18 **MR. GRIFFON:** Right.

19 **MS. MUNN:** -- actually appear on the matrix is
20 beneficial to all of us.

21 **MR. GRIFFON:** Exactly.

22 **DR. MAURO:** Could I make a suggestion? We're
23 in the process of doing the -- the seventh set
24 -- okay? We're going to be done -- we're going
25 to get to the point where we have our draft

1 material assembled, then we're going to go on
2 to the one-on-one discussions we have with each
3 of the two-group -- at that point we have sort
4 of come to where we are on it and have gotten
5 some feedback from you folks. If at that point
6 collectively we say, you know, there are still
7 like several items related to this case or that
8 case that we're really not quite sure and
9 almost -- so it's almost a collective thing.
10 Perhaps we could just simply feed back to you,
11 say listen, we're at this point in the process,
12 we notice that we have about four or five
13 questions on this collection that maybe we
14 could move them out easy, and maybe at that --
15 then you could make a judgment at that time,
16 yeah, perhaps setting up a quick conference
17 call with the right people and we could clean
18 up those (unintelligible).

19 **MR. ELLIOTT:** It's okay with us if it's okay
20 with the working group.

21 **MR. GRIFFON:** Yeah, as long as you -- you know,
22 we have to be -- I mean I think -- I don't want
23 to speak for the whole Board, either. I mean
24 there's a reason that we have these on the
25 record --

1 **DR. MAURO:** Yeah.

2 **MR. GRIFFON:** -- in the public forum, so --

3 **DR. MAURO:** Yeah.

4 **MR. GRIFFON:** -- I think we -- we've certainly
5 -- I think we all certainly understand the need
6 to -- to sort of expedite some technical
7 issues, but we don't -- you know, we don't want
8 to -- you know, we have to -- to keep the
9 discussions in the public, as well, yeah, yeah,
10 so --

11 **MS. MUNN:** That's certainly understandable,
12 what you're saying. But by the same token,
13 it's very clear from this seat that the
14 technical issues often could be resolved very
15 easily by one or two phone calls by --

16 **MR. GRIFFON:** Yeah, and I -- I think --

17 **MS. MUNN:** -- the people who are looking
18 specifically at the technical issues.

19 **MR. GRIFFON:** And I think a way to alleviate
20 it, and we've done this in some of the site
21 profile reviews -- I mean we're -- we're doing
22 this with Rocky on an ongoing basis. If we
23 have a technical phone call, we -- we just ask
24 that the parties keep min-- and John, you've
25 been good at this, that you -- you say I -- I

1 talked with -- or our people talked with their
2 people and here's what we discussed and here's
3 what we came out with, and you put that on --
4 you bring that back to the subcommittee and
5 that's fine, so --

6 **MS. MUNN:** A brief memo, the working group has
7 it, it's on the record, yeah.

8 **MR. GRIFFON:** Yeah, I think we could do this
9 and I think --

10 **DR. MAURO:** It could even be -- it could even
11 be -- 'cause my guess is that by the end of
12 that process it may be just a limited number of
13 things that we could probably clean up pretty
14 easily --

15 **MR. GRIFFON:** But I think --

16 **DR. MAURO:** -- we could actually send it to
17 you. We say listen, here's some questions that
18 we -- that we think if we can get some quick
19 answers to, it would help us resolve -- and not
20 only -- you know, 'cause they're -- you notice
21 they repeat. You know, we have this initiative
22 (unintelligible) --

23 (Whereupon, multiple participants spoke
24 simultaneously, rendering transcription of
25 individual comments impossible.)

1 **DR. MAURO:** Might use it to sweep those away.
2 Perhaps a memo -- I mean it'll all be on the
3 record, say here's some issues that we're
4 concerned with, we put them out to the working
5 group and it may be beneficial to air these out
6 and it'll all be in the sunshine.

7 **MR. GRIFFON:** Yeah. And I -- and I think --
8 yeah, I think -- I think we should encourage
9 that. I think also use your judgment on --

10 **DR. MAURO:** Yeah.

11 **MR. GRIFFON:** -- when you think well, wait a
12 second, this is -- this is a little bigger and
13 I think we need to bring it to the full
14 subcommittee or Board, whatever, you know --

15 **DR. MAURO:** Yeah.

16 **MR. GRIFFON:** -- so -- but I think we need to
17 encourage that -- a dialogue, you know.

18 **MS. BEHLING:** Mark, at this point in time I
19 wouldn't anticipate that we would need to have
20 too many discussions with the dose
21 reconstructors, and I know when we started this
22 process we had asked that question and we were
23 discouraged from doing that. And quite
24 honestly, I think that it has helped us in our
25 auditing process because we also, by not being

1 able to just run to the dose reconstructor or
2 run to somebody to get answers, it also has
3 brought to our attention that maybe there's
4 some deficiencies in some of the procedures or
5 maybe things are not clearly spelled out in the
6 dose reconstruction report. So I think there's
7 been some benefit from having to work through
8 some of these issues on our own. And so at
9 this stage in the game, I personally do not
10 feel I would need to -- hopefully would not
11 want to discuss details -- possibly some
12 technical issues, but I -- I wouldn't -- I
13 wouldn't make a point of calling them on a
14 routine basis, I can assure you of that.

15 **MR. GRIFFON:** That's sort of my point I made a
16 few minutes ago is that --

17 **MS. BEHLING:** But -- but what I --

18 **MR. GRIFFON:** -- keeping -- keeping a little
19 independence and separation there I think is
20 useful because it makes you -- it makes SC&A
21 maybe -- maybe you're coming at an issue from a
22 little different perspective and if -- if
23 somebody steps you right through you say oh,
24 yeah, that makes sense, you know. But if you
25 come at -- you might see something different

1 (unintelligible) --

2 **MS. BEHLING:** Absolutely.

3 **MR. GRIFFON:** -- yeah, I think that's useful
4 for the (unintelligible).

5 **MS. BEHLING:** I agree, but what I do feel would
6 be very beneficial is these notes that walk you
7 through the -- as you said, if you don't have
8 this information or if you do have this, follow
9 this TIB or follow that TIB. That I think
10 would be very useful for us.

11 **MR. GRIFFON:** Okay. We're going to --

12 **MR. ELLIOTT:** So if I can -- can I sum this up
13 so we can make sure we're all -- with the same
14 understanding.

15 We would be receptive to technical discussions,
16 if you come up with an issue or so that seems
17 to be thematic or that maybe is not thematic
18 but you just don't have a clear understanding
19 of what we did, how we did it, what we meant or
20 whatever, and you think that maybe you -- just
21 hearing from us will -- will elucidate that and
22 clarify it, we're welcome -- we're receptive to
23 that. We'll accommodate that. However you
24 want to work that out, that's fine.

25 **MR. GRIFFON:** And I -- I think that -- I think

1 we should work that out in a way that --

2 **MR. ELLIOTT:** But the intent here is to make
3 sure that we keep as much of this in the
4 public's view as possible --

5 **MR. GRIFFON:** Just keep a record -- if you have
6 that kind of discussion, just give us a record
7 of it and bring it back to (unintelligible)
8 that, you know, we -- in between meetings we
9 had this dialogue with the -- you know. I
10 think that's fine. Wanda, do you...

11 **MS. MUNN:** I think that'll probably do it. I
12 just -- you know, looking through these
13 documents again, I can see how it would have
14 illuminated SC&A's process enormously to have
15 had access to this information and -- but I
16 also agree that Larry's absolutely correct in
17 his position that the request needs to come
18 through NIOSH. It's a NIOSH decision. I think
19 your statement about keeping arm's length
20 between the parties is quite reasonable. You
21 know, I think you've got it, Larry.

22 **MR. GRIFFON:** All right. And then as far as --
23 as a report back for the -- I keep saying May
24 4th, is it May 2nd or --

25 (Whereupon, multiple participants spoke

1 simultaneously, rendering transcription of
2 individual comments impossible.)

3 **MR. ELLIOTT:** The next meeting of the
4 subcommittee, Lew wanted to make sure I did
5 this little dance for him, is scheduled for May
6 2nd --

7 **MR. GRIFFON:** Right.

8 **MR. ELLIOTT:** -- 2007 in Denver from 9:00 a.m.
9 to 11:30 a.m. --

10 **MR. GRIFFON:** Right.

11 **MR. ELLIOTT:** -- before the real -- full Board
12 meeting starts.

13 **MR. GRIFFON:** So maybe a -- at that -- Stu, if
14 possible -- at least give us an update, even if
15 it's not a complete evaluation, but you know,
16 just of the feasibility of providing these for
17 the --

18 **MR. HINNEFELD:** Eighth set.

19 **MR. GRIFFON:** -- eighth set of cases, you know,
20 can you -- can you include it and incorporate
21 these DR guides if -- if they're available.
22 They may not be for some cases. And then the
23 feasibility of -- of including them -- well, I
24 guess -- I guess --

25 **MR. ELLIOTT:** That answers it.

1 **MR. GRIFFON:** I guess that's it.

2 **MR. GRIFFON:** If we can do it for the eighth,
3 we can do it for the 10th --

4 **MR. GRIFFON:** Yeah, I was --

5 **MR. ELLIOTT:** -- or the ninth.

6 **MR. GRIFFON:** -- just saying including them on
7 all cases, but that gets into Liz's issue, so I
8 guess -- I guess we're just saying for all
9 reviewed cases.

10 **MR. ELLIOTT:** I think that's where we ended up
11 a minute ago.

12 **MR. GRIFFON:** Yeah.

13 **MR. HINNEFELD:** Speculating here --

14 **MR. GRIFFON:** So just the feasibility of that,
15 yeah.

16 **MR. HINNEFELD:** -- it will probably be -- can
17 we do it will probably be case-specific, that
18 when a case is selected for review, at that
19 point we will know if we have, you know, a --
20 an instruction or a guide that was utilized in
21 the development of that.

22 **MR. ELLIOTT:** For that time frame.

23 **MR. GRIFFON:** For that time frame.

24 **MR. ELLIOTT:** That (unintelligible).

25 **MR. GRIFFON:** That's the hard part.

1 **MR. HINNEFELD:** Yeah, for -- for that -- what
2 was utilized for that case, will we have it, I
3 don't think we'll know until the case is
4 selected from this point forward, you know.

5 **DR. MAURO:** (Unintelligible)

6 **MR. HINNEFELD:** So it'll be case-specific, but
7 I will -- I think that, but as -- that's
8 largely speculation, so let me speak to the
9 ORAU team in the meantime and make sure that --
10 that, you know, there is nothing that I don't
11 foresee -- you know, anything that I don't see
12 here that would interfere with the ability to
13 do that.

14 **MR. GRIFFON:** Okay. So we'll just get an
15 update on it when you check with ORAU to make
16 sure -- you know.

17 **MR. HINNEFELD:** Yeah.

18 **MR. GRIFFON:** And it may -- it's probably going
19 to be case-specific, but --

20 **MR. HINNEFELD:** Yeah.

21 **MR. GRIFFON:** -- you know, the indication seems
22 to be that you -- you can do that, it's just
23 the -- that some cases may not be able to find
24 either one for that case because there was --
25 there weren't any, or -- or you can't nar-- you

1 can't find one for that time frame.

2 **MR. HINNEFELD:** For that time frame.

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

4 **MR. SIEBERT:** That's the biggest issue.

5 **MR. GRIFFON:** Yeah, that -- I think that's the
6 biggest issue. Right. Yeah.

7 **MR. HINNEFELD:** The -- I don't know if you want
8 to get into this, Mark, of -- there was
9 discussion about the selection of the eighth
10 case -- the eighth set of DRs.

11 **MR. GRIFFON:** Yeah, I think we just -- we
12 talked before, I think we're -- Stu and I
13 talked about the selection of the eighth case
14 and what we were -- what I was proposing is use
15 the same criteria as we did for the seventh
16 set, which is that Stu is going to generate a
17 list of the best-estimate cases, bring them
18 back to us for the May meeting, and then we can
19 do a preliminary selection and then he's going
20 to go find that refined criteria and come back
21 with a -- for those selected cases, you're
22 going to come back with that more detailed
23 information --

24 **MR. HINNEFELD:** (Unintelligible)

25 **MR. GRIFFON:** -- that we had asked about.

1 Right?

2 **MR. HINNEFELD:** Right.

3 **MR. GRIFFON:** So do that same two-step process,
4 and I think that's okay. Right?

5 **MR. ELLIOTT:** And the number being 40 or --

6 **MR. HINNEFELD:** 38.

7 **MR. ELLIOTT:** -- 38?

8 **MR. HINNEFELD:** 38.

9 **DR. MAURO:** That's what I was going to say --

10 **MR. HINNEFELD:** Or 32.

11 **DR. MAURO:** -- 38 -- 30-- I'm sorry, 32, 'cause
12 28 was the last batch --

13 **MR. HINNEFELD:** 28 were selected for the
14 seventh.

15 **DR. MAURO:** -- and -- and then -- right.

16 **MR. GRIFFON:** So 32 cases for the eighth set --

17 **DR. MAURO:** So 32 will do it, and that will
18 close out our fiscal year 2007 --

19 **MR. GRIFFON:** Okay.

20 **DR. MAURO:** -- obligations.

21 **MR. ELLIOTT:** So from 32 you're going to
22 select...

23 **DR. MAURO:** Well, from -- from the batch --

24 **MR. HINNEFELD:** From -- from some 400 or 500
25 best estimates --

1 DR. MAURO: Picked in --

2 MR. HINNEFELD: -- they will select --

3 MR. ELLIOTT: And these are all best estimates.

4 MR. HINNEFELD: -- somewhat more than 32 --

5 DR. MAURO: Yeah.

6 MR. HINNEFELD: -- in order to get --

7 MR. ELLIOTT: Down to --

8 MR. HINNEFELD: -- more detailed information on
9 that subset of -- and then from that subset, 32
10 will be selected.

11 DR. MAURO: And delivered to us, that's --
12 we're looking to get -- receive CDs with 32 on
13 them.

14 MR. ELLIOTT: All best estimates.

15 MR. HINNEFELD: Well, my proposal was to start
16 by running all of the best est-- full internal
17 and external and -- and come up with that
18 population 'cause I suspect it may be -- come
19 up with 400 or 500 by now.

20 MR. ELLIOTT: Okay.

21 MR. HINNEFELD: And from that, my thought was
22 we should --

23 MR. ELLIOTT: (Unintelligible) be 1,000.

24 MR. HINNEFELD: -- be able to find a subset of
25 -- we should be able to find a subset that is

1 robust enough and big enough to get the
2 additional information that we can select 32.

3 **MR. GRIFFON:** So you think you're up to 400 or
4 500 (unintelligible)?

5 **MR. HINNEFELD:** I'm thinking we must be. I
6 think it was over -- it was over 200 last time
7 we ran it, and --

8 **MR. GRIFFON:** The only thing i--

9 **MR. ELLIOTT:** And we're talking adjudicated
10 cases, too, so you've got to --

11 **MR. GRIFFON:** Yeah.

12 **MR. HINNEFELD:** Well, that's right, we're
13 talking adjudicated cases.

14 **MR. ELLIOTT:** -- screen that down a little
15 further.

16 **MR. HINNEFELD:** Yeah.

17 **MR. ELLIOTT:** And at the last Board meeting, I
18 -- I'm trying to recall the slide I presented
19 on the different approaches to dose
20 reconstruction and what the percentages was on
21 the best estimates internal/external. I -- I
22 don't know that I -- well, I don't -- I don't
23 want to say.

24 **UNIDENTIFIED:** We may not be at 400.

25 **MR. HINNEFELD:** What -- what I will do -- what

1 I can do --

2 **MR. ELLIOTT:** It's definitely not going to be
3 (unintelligible) analysis --

4 **MR. GRIFFON:** The only thing I was going to say
5 is --

6 **MR. ELLIOTT:** -- (unintelligible) 400 or --

7 **MR. GRIFFON:** What I was going to say is --

8 **MR. HINNEFELD:** What I can do is --

9 **MR. GRIFFON:** -- sort randomly, too.

10 **MR. HINNEFELD:** All those lists -- all that
11 list and provide that list to the -- to the
12 subcommittee members ahead of time, and --

13 **MR. ELLIOTT:** I think that's a good idea.

14 **MR. HINNEFELD:** -- and then you guys can
15 converse however you want and decide --

16 **MR. GRIFFON:** 'Cause my -- one --

17 **MR. HINNEFELD:** -- do we think we have enough
18 here or do we want to get some randomly-
19 selected cases as well.

20 **MR. GRIFFON:** 'Cause one concern we might have,
21 even if you have a lot of cases, if they're all
22 from Savannah River and Hanford, you know, we -

23 -

24 **MR. HINNEFELD:** Uh-huh.

25 **MR. GRIFFON:** -- we might have to say no --

1 **MR. HINNEFELD:** Right.

2 **MR. GRIFFON:** -- we can't do these -- more of
3 these, you know, or whatever.

4 **MR. HINNEFELD:** So I think --

5 **MR. GRIFFON:** So we might -- if we -- if you
6 get these out to us early enough, we can maybe
7 -- via e-mail, let you know and come to the
8 Board meeting with a selection of random, too -
9 -

10 **MR. HINNEFELD:** Yeah, and however many --

11 **MR. GRIFFON:** -- to see --

12 **MR. HINNEFELD:** -- however many randomly-
13 selected you want.

14 **MR. GRIFFON:** And I think we can do that by e-
15 mail --

16 **MS. MUNN:** I think so.

17 **MR. GRIFFON:** -- with the four subcommittee
18 members, you know.

19 **MS. MUNN:** Yeah. You up for that, Mike?

20 **MR. GIBSON:** Uh-huh, yeah.

21 **MR. ELLIOTT:** For -- for planning purposes and
22 -- and speaking of timing, your ninth -- ninth
23 round, tenth round selections -- you might want
24 to consider different kinds or different types
25 of -- of reconstructed cases. We'll have more

1 partials, as far as classes added and non-
2 presumptive cases being done with a partial.
3 You're going to -- you're going to have -- at
4 some point in time I think you're going to see
5 more AWEs treated like the set of Battelle
6 cases where we've asked for a Technical Basis
7 Document to be developed with an appendix
8 specific to a type of process. Those are --
9 they're starting to come through now, so these
10 are just some of the other things I -- I would
11 alert you to that you might want to think
12 through about, you know, your case selection
13 strategy.

14 I don't know, is there other categories like
15 that, Stu, than those two?

16 **MR. GRIFFON:** Do you -- can you tell us -- not
17 right now, but provide us that list of AWEs
18 that would have that appendix -- process-
19 specific appendix?

20 **MR. ELLIOTT:** There were originally about 1,400
21 claims that we carved off, representing a
22 number of sites. And I don't know -- you know,
23 they're just now starting to come through, so
24 they may be not the tenth round or eleventh
25 round, but it might be the 12th round you might

1 want to think...

2 **MR. HINNEFELD:** I -- I don't -- I don't know
3 the number of either of those categories. I
4 can't think of any others that would be
5 noteworthy, but you're right, those are two
6 categories that --

7 **MR. GRIFFON:** But maybe --

8 **MR. HINNEFELD:** -- just thinking out loud, the
9 full internal and external will not capture
10 partial dose reconstructions from people who
11 (unintelligible) --

12 **MR. GRIFFON:** Right.

13 **MR. HINNEFELD:** -- in the SEC class, I don't
14 believe.

15 **MR. GRIFFON:** (Unintelligible)

16 **MR. HINNEFELD:** So -- I mean we could query
17 that population specifically. We could do
18 that.

19 **MR. GRIFFON:** I think let's stick with best
20 estimate for now.

21 **MR. HINNEFELD:** Stick with what we're doing for
22 now.

23 **MR. GRIFFON:** But -- yeah.

24 **MR. HINNEFELD:** Yeah, 'cause you're
25 (unintelligible) --

1 **MR. ELLIOTT:** That -- that one staged up sooner
2 -- that -- that you were just talking about,
3 that staged up sooner -- if we look at
4 Mallinckrodt, Iowa and the early year classes
5 that have been added, you know, we started
6 doing some of those non-presumptive partial
7 dose reconstructions. But -- and this other
8 category that I'm talking about about the --
9 the lot of AWE claims --

10 **MR. GRIFFON:** Right.

11 **MR. ELLIOTT:** -- that's -- that's a little
12 further down the --

13 **MR. HINNEFELD:** Yeah.

14 **MR. ELLIOTT:** -- down the (unintelligible).

15 **MR. GRIFFON:** Well, all I was saying is that
16 these -- might be bet-- second population
17 sounds interesting, can --

18 **MR. ELLIOTT:** Yeah, 'cause it's done under a
19 whole different --

20 **MR. GRIFFON:** Yeah.

21 **MR. ELLIOTT:** -- somewhat different, I'm
22 (unintelligible) --

23 **MR. GRIFFON:** In the future can you give us a
24 listing of those sites that would be covered by
25 the (unintelligible)?

1
2
3
4

(Whereupon, the meeting was concluded at 3:28
p.m.)

1

CERTIFICATE OF COURT REPORTER**STATE OF GEORGIA****COUNTY OF FULTON**

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of April 11, 2007; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 16th day of August, 2007.

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

2

3