THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

convenes

MEETING 3

SUBCOMMITTEE FOR DOSE RECONSTRUCTION

REVIEWS

The verbatim transcript of the 3rd

Meeting of the Subcommittee for Dose Reconstruction

Reviews held in Cincinnati, Ohio on April 11, 2007.

STEVEN RAY GREEN AND ASSOCIATES
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C O N T E N T S

April 11, 2007

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BEHLING, KATHY, SC&A
BRACKETT, LIZ, ORAU
ELLIOTT, LARRY, NIOSH
HINNEFELD, STUART, NIOSH
HOMOKI-TITUS, LIZ, HHS
HOWELL, EMILY, HHS
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MAURO, JOHN, SC&A
SIEBERT, SCOTT, ORAU

APRIL 11, 2007

9:30 a.m.

P R O C E E D I N G S

WELCOME AND OPENING COMMENTS

DR. WADE: This is the workgroup conference room. This is Lew Wade and I, as always, have the privilege of serving as the Designated Federal Official for the Advisory Board. This is a meeting of the subcommittee of the Advisory Board, the only subcommittee currently of the Advisory Board, and it's the subcommittee on dose reconstruction. The subcommittee is chaired by Mark Griffon; members Mike Gibson, Dr. Poston, Wanda Munn, with alternates Clawson and Presley.

In the room we have Mark, Dr. Poston and Ms. Munn. Might I ask other Board members on the line to identify themselves?

(No responses)

Do we have any other Board members on the line?

(No responses)

Okay, that's fine.

MR. GRIFFON: They might have assumed we'd be late.

DR. WADE: Yeah, that's fine. But we have --

we have a quorum of the subcommittee. We can -- we can do business. What I'd like to do is do introductions here around the table, and then go out into telephone land and have NIOSH/ORAU team members identify themselves, SC&A team members identify themselves, other feds, workers, worker reps, members of Congress or their staff, anyone else who would like to identify. Then we'll have my usual lecture on phone etiquette -- and we've been very good about that recently -- and then we'll start the business of the subcommittee.

Again, this is Lew Wade. I serve the subcommittee and work for NIOSH.

MR. ELLIOTT: Larry Elliott, NIOSH.

MR. HINNEFELD: Stu Hinnefeld, technical program manager for NIOSH/OCAS.

MR. GRIFFON: Mark Griffon with the Advisory Board.

DR. WADE: Liz Homoki-Titus is not at the table at the moment, but will be. We were to introduce her. She's assisting in getting the paperwork necessary to make this meeting flow right in everyone's hands, so thank you to Liz.

MS. BRACKETT: Liz Brackett, the principal

internal dosimetrist for the ORAU team.

MR. SIEBERT: Scott Siebert, dosimetrist for the ORAU team.

MR. ALLEN: Dave Allen with NIOSH.

DR. MAURO: John Mauro with SC&A.

DR. POSTON: John Poston with the work-- with the subcommittee.

MS. MUNN: Wanda Munn, subcommittee/Board.

DR. WADE: Before we go out, I should say Dave Allen looks particularly dapper today. We should get that on the record.

MS. MUNN: Yes, we should.

DR. WADE: Thank you for being here. Now might we have other members of the NIOSH/ORAU team identify themselves?

(No responses)

Other NIOSH or ORAU folks on the telephone line?

(No responses)

We have everyone here. Other members of the SC&A team on the telephone line?

MS. BEHLING: Kathy Behling from SC&A.

DR. WADE: Good morning, Kathy.

MS. BEHLING: Morning.

DR. BEHLING: Hans Behling, SC&A.

DR. WADE: Good morning, Hans.
DR. BEHLING: Morning.
DR. WADE: Other SC&A members?
(No responses)
What about other federal employees here by virtue of their federal -- working today?
MS. HOWELL: Emily Howell, HHS.
DR. WADE: Welcome, Emily. Other feds? Don't be shy.
Workers or worker reps, members of Congress or their staff on the line?
MR. KEY*: Jim Key, safety and health rep, United Steel Workers, Paducah.
DR. WADE: Welcome. Thank you for joining us. Anyone else on the line who wishes to be identified?
(No responses)
Okay. Again, this is a mem-- this is a meeting of the subcommittee on dose reconstruction. Might I ask again if there are any Board members on the -- on the telephone?
(No responses)
Board members on the telephone?
(No responses)
Okay. Very briefly, I mean think about phone

etiquette as you do your business, particularly on the telephone. Mute the instrument you're using when you're not speaking. If you are speaking, speak into a handset. Don't use a speakerphone. That allows all kinds of distractions to enter in. And be mindful of background noises in the place where you are because while they might be routine to you, we hear them and they can be very distracting. All right. So again, we appreciate the demonstrated etiquette we're going to see today. And Mark, it's all yours.

INTRODUCTION BY CHAIR

MR. GRIFFON: Okay. Just to -- we're going to do -- and at this type of subcommittee meeting usually what we are more successful in doing than at the subcommittee meetings at the full Board meetings, we -- we get down to some of the more detailed work at these meetings 'cause it's usually a smaller group. And with that in mind, I think -- initially we were going to do the fourth set of ca-- some -- some written materials that we expected did not come from NIOSH and instead of actually going through the -- a -- a review of some of these findings and

discussions, I think we are going to ask NIOSH and -- and the ORAU team to give us an update on some of these actions and -- and I guess the only sort of discussion of the tes-- technical aspects of any of this is going to be focused on -- on clarifying the task. So -- so Kathy and Hans -- I know I talked to you, Kathy, this morning. You know, we won't get into the technical discussion 'cause we haven't had the materials. You -- you just got my e-mail stuff this morning on -- on this listing where -- we are going to go through a listing which Liz just gave us copies of, which is -- is some of the -- for some of the findings in this matrix, particularly a few Savannah River cases and one Hanford case, NIOSH committed to giving us some written backup materials to clarify -- shed some light on -- on their response, and we haven't got those so we're not going to get into the details, but we do want to clarify the actions and make sure that, you know, what NIOSH is going to deliver is what we're asking for. So Kathy and Hans, I hope -- that's the spirit of the discussion on those items that I want to have this morning. So we're -- we're

going to do that first.
And then after that, I'd like to go through the fifth set and just do at least our first preliminary review of the fifth set. We have -- and I think everyone has a copy of the fifth set matrix, and in that we have NIOSH's response now so we can go through the NIOSH response to the finding and at least get a preliminary path forward on those. And I think a lot of those, in -- in looking at them, my sense is that a lot of them are findings we've seen before. So although it's 40-some pages -- or 39 pages, I think we can probably get through a lot of them quickly. Certainly some we'll have to -- some will take a little more time, but I wanted to -- my hope is to get through that in a preliminary fashion today.
And then lastly is a -- an initial discussion on these DR guidelines or DR notes that -- that are sort of the -- I guess templates, for lack of a better word, for the dose reconstructors for certain sites. And at least initially I think this is kind of a -- a fact-finding discussion. We want to hear from NIOSH, you know, how are these used; are they used -- it

looks like they're used only for the larger sites, but it -- you know, maybe just a clarification for the Board on what -- what role these things play in the dose reconstruction process, and then some discussion around that. But that -- that's last on our agenda.

We are hoping probably to get out around 2:00 p.m. today if people want to think about their schedule, and I think we can get all this in by 2:00 p.m.

So with that in mind, any questions on the agenda? Did -- there is one other thing that I think that we mentioned at the Advisory Board last time that I wanted to discuss further, but I'm not prepared really to discuss it today, and that's the -- sort of the -- the update on our protocols for the reviews, including blind reviews. And I think we wanted to come back to the full Board with a better sense of how we're going to conduct blind reviews. And we even talked about maybe selecting a few of those for the eighth set. And -- and also the -- what I called the advanced reviews in the initial protocol, and I asked everyone to go back and

look at our original protocol and maybe come prepared for some discussion and I -- I neglected to do that, so I would propose to put that on the agenda for the May 2nd -- is it May 2nd? -- May 2nd subcommittee meeting, if we could.

DR. WADE: And just for clar-- to clarify, I recently tried to put out an agenda for the Board meeting on May 2nd that would start in the morning. That's not going to succeed, so the Board meeting will start at 12:30, so the morning of the 2nd is available for subcommittee if you would like, for your planning purposes.

MR. GRIFFON: Right, and I think we would like at least a couple of hours, yeah.

DR. WADE: Okay.

MATRIX

MR. GRIFFON: Okay. So this -- this listing I got from Stu, I think last Friday, I'm -- along with an updated matrix for the fourth set. And -- and the matrix is not really modified that significantly, from what I can see, but I did -- I didn't send it out to everyone yet. I asked SC&A, and they just got it this morning,

if they could review it and make sure they agree with the resolution, and then I'll circulate it to everyone, but -- so we're not going to go through the full matrix, but -- but out of the full matrix, Stu lifted these -- this listing, which is I think the major items where we were asking -- the work-- or the subcommittee and SC&A was asking for sort of written backup materials to support their -- their response, or to clarify their responses. And I think what I'd like to do right now is kind of go through and let -- let NIOSH take the lead and go through these and -- and get some understanding of what they perceive the action to be, and make sure SC&A is in agreement with that action --

DR. BEHLING: Mark, can I interrupt for a second --

MR. GRIFFON: Yeah, sure, Hans --

DR. BEHLING: -- before we do that?

MR. GRIFFON: Sure.

DR. BEHLING: I think it's important to make a comment here. That is, it was only really the beginning at -- with the fourth set that we encountered for the first time dose

reconstructions that were bona fide best estimate dose reconstructions. And -- and one of the things that we observed in the fourth set was several dose reconstructions where the best estimate ended up with a POC that came very close to the pivotal point of 50 percent POC. And in a couple of instances, I believe those cases were 67, I believe, and 68, or whichever ones, we came extremely close to the point where we looked at certain deficiencies that might make enough of a difference where the revised dose estimates, if these errors or deficiencies area corrected, might just bring the person over the 50 percent value. And -- and what we had hoped to do was to have NIOSH address these deficiencies or -- or findings, I'm not going to say deficiencies -- findings that we identified, and then provide us with a full explanation that includes a dose reconstruction that says we have at this point addressed your -- your findings and -- and we have rerun the entire dose reconstruction in -- in -- in terms of accommodating those findings and determined whether or not the new POC does in fact bring you over the 50 percent value, so

that what we were hoping to do is not necessary (sic) address each of the findings in -- in isolation, but in context with the entire dose reconstruction, because in the end there's no point in addressing a finding without determining how that finding affects the POC and the compensability of that claim. And so what it is that we're asking here is to resolve the findings, rerun the entire dose calculation and determine whether or not this new POC is going to end up over the 50 percent value and -- and convert a non-compensable case to a compensable case.

DR. WADE: I think we have to talk about this, clearly. Liz to start and also --

MR. GRIFFON: Yeah, you're getting a little ahead of me, Hans, but I was going to ask -- 'cause initially one of our -- one of the resolution columns said "rework entire case" --

DR. BEHLING: Yes.

MR. GRIFFON: -- and I was going to ask NIOSH that -- it -- it seems like they're -- they're slightly modifying that action and I wanted to understand what -- you know, the nature of that action. Maybe Liz can...

MS. HOMOKI-TITUS: No, I just need --
MR. GRIFFON: Oh.
MS. HOMOKI-TITUS: -- to remind the Board that you are not an appeals board --
MR. GRIFFON: Right, right.
MS. HOMOKI-TITUS: -- and it is not SC&A's job to bring cases forward individually for rework. That would be up to NIOSH if they want to rework the case based on information that you bring, but the Board is supposed to be bringing forward summarized responses, not individual case responses.
MR. GRIFFON: And I thought there might have been some heartburn with that -- with that -- that term, rework, has -- has different meanings, depending on who's using it. So I think --
DR. WADE: It's very important that roles are understood in terms of SC&A's role, what it is and what it is not. I mean SC&A is not in a position to ask NIOSH to redo dose reconstructions, and we have to be very careful about how we move down this path. And the subcommittee needs to decide what it wants, and the subcommittee needs to be careful as well

about its role, given the Board's charter.

MS. HOMOKI-TITUS: Right, 'cause the Department of Labor has already adjudicated these cases, and we would have to get them involved if the Board, for some reason, is recommending that cases need to be redone because the outcome is going to change. That was never the charge of the Board, and I believe if you look back at the transcripts, the Board agreed that they would not be bringing forward --

MR. GRIFFON: Right.

MS. HOMOKI-TITUS: -- comments to -- on individual dose reconstructions. They would be bringing forward summaries. So I'm very concerned about this path forward that SC&A is asking for.

DR. WADE: Right. Now remember, that doesn't mean that there's not opportunity to see the right things done right. I mean if, in the course of the Board's scientific review, issues are to be raised, and then NIOSH agrees that indeed there could be a change in their scientific methodology, then NIOSH would take the action of reworking those cases and issuing a -- and I always get the letters wrong, a --

MR. HINNEFELD: PER, Program Evaluation Review.
DR. WADE: -- PE-- so there is a path forward, but we have to be very careful about who's taking what action.
MR. ELLIOTT: And we have done that. We have heard and seen, from the reviews, issues that we have addressed that way.
MR. HINNEFELD: Yeah, the -- just so we're -- we're clear --
MR. GRIFFON: I think part of the confusion was the initial responses that we had in the -- in our resolution was to rework the cases.
MR. HINNEFELD: And -- and -- and we have to on some of these cases, the reason being that -- first the -- at least the Savannah River cases, they were worked originally with a calculational tool that used the entire range of triangular DCFs rather than the AP range of DCFs, and so that is one of our existing PERs that we know we have to do, and so this case will be reworked.
In the meantime, though, there are a number of findings that we have not really resolved or come to closure on, on 67, 68 and 69, many having to do with the internal dosimetry

calculation, that if we were to -- you know, when we rework these cases for PER, we make all corrections and all changes that have made since that time. We just don't correct one thing, if there are other changes been made in the meantime. I know that in one of these cases there was at least some work in a glovebox for one of these employees, and so there will be a glovebox adjustment added to the rework during that -- during that time. And if I'm not mistaken, there might be a construction worker in this crowd, and so there would be the construction worker dose reconstruction approach would be -- would be included in the PE-- when we redo this as a PER, so we address more than one PER when we do these -- you know, when we do a case. We just rework it once with all the open PERs, you know, incorporated into it.

So rather than -- I don't think it's timely to deliver the reworked case, though, until we have some agreement that -- of the resolution of the findings. Because if we rework the case at this point and have not resolved the internal dose -- I'll call them the internal

dose findings; there may be some other findings -- then -- and the resolution later on causes an additional change in the internal dosimetry approach, then we're facing redoing the case yet again. So I believe it'll be timely to rework it when we have a resolution on -- on the issues on these cases and provide it at that time. That's when I think it would be the timely ti-- and it's part of the PER process, Liz. It's not -- we're not doing this because the Board has asked us to rework these cases. It's because there have been technical approaches identified that we would -- as a normal practice when there's a change in a technical approach, we go back and evaluate cases that might change because of that change (unintelligible) --

MS. HOMOKI-TITUS: Okay, I'm just concerned because what I heard from SC&A was that they wanted to see the cases back here to the Board and that kind of stuff, and that's not --

MR. HINNEFELD: Okay.

MS. HOMOKI-TITUS: -- the Board's role and that's not SC&A's role.

DR. WADE: And I heard the same thing.

MR. ELLIOTT: If the Board is interested in looking at claims that have been evaluated under Program Evaluation Review, you could get at that by -- one of two ways, perhaps. You can do that through the -- a review of the Program Evaluation Reports that have been completed, and you're going to see a sampling -- a subset, if you will -- of change. Or you could ask for us to present to you a number of claims once they have been -- gone through the PER process and, you know, we could put a number of claims on the table that you could pick up and -- and look up that way. But that would have to mean they would be already through the -- you know, the adjudication --

MR. GRIFFON: Well, that may be --

MR. ELLIOTT: -- process again.

MR. GRIFFON: That may be a wa-- I mean that's -- that's not really necessarily relevant to our fourth set here, but it may be another thing when we -- we talk about tracking some of our findings and sometimes, like the AP geometry comes up a lot and it is a PER. If it's tagged to a PER, maybe then when -- when they're complete we can review that report and

that -- that closes it out (unintelligible).

DR. WADE: There are two things the Board has been discussing that relates directly to this. One is tracking findings through to closure, and you just described that perfectly. And the other is looking at all the work products, PER being one of those work products. So I do think it's important that the Board has its mind around the review function to closure -- to ground, so to speak. But again, we have to watch how it comes about and where the driving force is for that.

MR. ELLIOTT: My comments are not to persuade the Board one way or the other, but I would suggest to you if you look hard at looking at this through an evaluation of the PERs, and Dave Allen is cringing when I say this 'cause he's the principal party leading that effort right now and we have a lot of these. But what is valuable to understand out of a Program Evaluation Report is which way the claims swung after the change was made, which way did the PC go, and some of these drive it both ways. So that I think gives you a basis of -- of context to start looking at -- at what's happened here,

so -- in other words, it's already -- a screening effort's been done and you're seeing the product of that.

MR. GRIFFON: Wanda's dying to say something.

MS. MUNN: Yeah, I'm -- I'm really concerned about -- about this whole direction. I think the Board made it eminently clear, time and time again, that we would not assume any function that was -- could be conceived as being an appeals function. And even though the cases we're looking at here were chosen randomized, if this -- if the actions that we take can be perceived by anyone as the back door to redoing some cases for any reason, then I think we're on a dangerous precipice. I would not want that to happen. It's not our function. We need to be very careful that, in trying to assure ourselves that the best science is being used, we're not getting into the level of detail that is inappropriate for the Board. We just --

MR. GRIFFON: Well, but -- yeah --

MS. MUNN: -- have to watch that.

MR. GRIFFON: Yeah, I -- two things I think. One is I think we should probably pursue what

Larry's talking about, but I think it's maybe a separate task, different than what -- what -- than this fourth set questions here. And I certainly agree we're not -- that we're not into this appeals business. For sure, we don't want to lead anybody to believe that at all. On the other -- but -- but the one thing I think we want to -- or SC&A wants to be in a position to do is say, you know, would these findings -- 'cause these cases, as Hans described, were these borderline cases, and I think all of us at the Board want to know, you know, would -- would these findings together, 'cause you have maybe several PERs in one case and maybe some issues different than -- than -- than have been assessed in PERs previously, would these findings together likely trip the case -- you know, could it likely affect the outcome of the case, 'cause we --

DR. WADE: I think that's something the board needs to discuss.

MR. GRIFFON: -- 'cause we've constantly had fin-- you know, findings that, you know, that -- the finding unlikely to affect the outcome of the -- the POC. And I think here we're in a

situation where SC&A is saying you know what, so far we see that -- that it may affect, you know -- and I think they're trying to -- to find out, one way or the other, so they can make either a stronger finding in that regard or -- or say, you know, no, we're convinced it's not going to --

DR. WADE: I think this is something the Board needs to discuss. I think the Board was fairly clear when it set up its review function for DRs that it didn't want to go to the issue of compensability. I mean it really wants to conduct a scientific review of the product --

MR. GRIFFON: Right, right.

DR. WADE: -- and I think that's what really needs to be focused on.

MR. GRIFFON: Yeah.

DR. WADE: I think it perfectly reasonable, when that review is complete, if the chair of the subcommittee or the chair of the Board wants to say to NIOSH what did you do with this result -- there's a result here that in our mind raises a question as to whether or not there needs to be a rework of this case, what have you done; tell us about that. I think

that's quite reasonable.

MR. GRIFFON: I think we were care-- I -- I think we -- we should re-examine the -- the way we phrase it 'cause I think we were careful this -- to talk -- we didn't want to talk about POCs necessarily, but you know, I -- I also remember very vividly many comments on the Board after the first several sets were done that, bottom line, you know, none of these cases would have been changed as far as the decision (unintelligible), you know, so -- so --

DR. WADE: And if it happened --

MR. GRIFFON: -- you know, and -- and here we're in possibly a different scenario. I'm not saying, you know, that -- that we are, you know, but, you know, these are ones that may be affected so I think we need to at least explore the science enough to know --

DR. WADE: All right, but I don't think it's SC&A's role to offer an opinion on that.

MS. BEHLING: Excuse me, Mark, this is Kathy Behling. I'm sorry if I'm interrupting. I -- I do have to add a little bit here because at the end of all three of my presentations to the

Board on I guess maybe the first three sets, the final question was as Mark is indicating, so have any of the findings had enough of an impact to overturn any cases. So I guess that always was something that was asked of me at the end of the presentations.

DR. WADE: Wait for it to be asked -- wait for it to be asked of you again and answer it when it's asked.

MS. BEHLING: Okay.

MS. HOMOKI-TITUS: And that's a generalized question. That's not a discussion on specific cases, which is what's being proposed here and which is what I'm concerned about.

MS. MUNN: Yes.

MS. HOMOKI-TITUS: Could you pass (unintelligible)?

MS. MUNN: Of course --

MR. GRIFFON: But -- but these -- these were -- yeah, yeah, you know.

MS. MUNN: I mean the questions really are the general questions with respect to is this -- is the science that's being applied to these cases, as shown by the ones that we have reviewed, adequate science.

DR. WADE: That's all the Board is tasked to do is review the quality of the science, and that's really what you need to do. Once that's done, I think it's quite reasonable for the Board as a whole, or the subcommittee, to say what are the impacts then of this; we'd like NIOSH to speak to that. And that would be fine.

MR. GRIFFON: I -- I think it's more than the ade-- adequacy of the science. I think it's did they get it right, you know, and that doesn't necessarily mean the POC. Did they do the dose reconstruction correctly. I mean with the best estimate, I think that's --

DR. WADE: We'd have to go -- I don't have the charter in front of me.

MR. GRIFFON: Yeah.

DR. WADE: Does anyone have the Board charter with them? We just need to look at the charter of the Board and what the Board is tasked to do. I don't think it precludes your wanting to do anything you want to do, but I think it's very --

MR. GRIFFON: Right, right, right, and as far as identifying individual cases, I think that's

why we don't have case numbers on these.

MS. HOMOKI-TITUS: Right, but if we go to litigation --

MR. GRIFFON: I mean we're not talk--

MS. HOMOKI-TITUS: -- and this is pulled up --

MR. GRIFFON: Yeah.

MS. HOMOKI-TITUS: -- in discovery --

MR. GRIFFON: I understand.

MS. HOMOKI-TITUS: -- that's individual cases that you all have basically taken as an appeal.

MR. GRIFFON: Right, right, right.

MS. HOMOKI-TITUS: And that's my concern and I can assure you that's going to be the Department of Labor's concern if you get into this.

DR. WADE: I think it's important the Board read its charter, I think it's important SC&A read its contract, and that everyone behaves consistent with that.

DR. MAURO: It's important -- we haven't had this conversation before.

MR. GRIFFON: Right, right.

DR. MAURO: This is an important conversation. One of the things that we do in every one of our reports is we have this checklist. In the

checklist we try to give a level of importance. Ultimately that level of importance goes toward two issues, I believe, and Kathy certainly could help me with this, is -- one is, you know, is this of such -- of a scientific nature that is -- that has -- is important that may have cross-cutting effects relative to many, many cases and therefore it's important. It may not necessarily be important in this particular case --

MR. GRIFFON: Right, right.

DR. MAURO: -- but we think it's important. But second, I also believe that when we give it a high importance it's because we're concerned that we're starting to knock on the door and because we're starting off with a POC of some high number 'cause we always report the POC in the checklist and we are -- we identified what we perceive to be a finding that might be important here because we're knocking on the door of the -- the POC. Now, if that -- in light of this conversation, it sounds like that's something we should not be doing. I'm starting to think that our -- we -- we are just one element that's making certain observations

regarding dose reconstructions, which is feeding into a system where you folks have your own internal process that feeds in. So in other words, there's a process where there's multiple for-- quality assurance checks going on all the time, feeding into a machinery that -- that -- that kicks you into a PER or not, the material we provide in our checklist is just one of those, so that's -- so perhaps -- well, I guess I'll put this on the table for the Board to consider. Perhaps the checklist, in terms of trying to give level of importance for particular findings for a particular case may start to move in on this area of adjudicatory issues that maybe should not be here. I -- I guess I'm going to put that on the table.

MR. GRIFFON: Well, we -- and -- and we did clarify -- I'm just pulling up the matrix 'cause we -- I think initially -- and we have these two differing columns that we've reported on. We have case impact and program impact --

DR. MAURO: Right.

MR. GRIFFON: -- and oftentimes we as the workgroup or subcommittee have tried to weigh

in on that program impact column and -- and SC&A's focused on the case-specific impact. And in the -- in that -- when you have low, medium and high --

DR. MAURO: Uh-huh.

MR. GRIFFON: -- the rankings, if I remember correctly -- Kathy, correct me if I'm wrong, but I think initially we had some language related to the POC in there and we modified that to say that it -- a low means that the deficiency has only a marginal impact on dose, so --

MS. BEHLING: That's correct.

MR. GRIFFON: -- we're looking at dose reconstruction. We're not looking at --

DR. MAURO: Okay, that's --

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

MR. GRIFFON: Right, so that -- that's okay. I think where we're going to have to stop is --

DR. MAURO: Okay.

MR. GRIFFON: -- is that the finding -- you know, if it's a high finding, then -- now -- now I guess we can't stop that questioning of

Kathy after the --

MR. ELLIOTT: But that -- that questioning should come to NIOSH. The questioning about has the audit findings impacted the program in a way that -- that dose reconstructions changed to the point they become compensable, was -- was there a shift in -- in the outcome, that should come to us. We should be able to -- to respond --

DR. WADE: I think this is all clear and I think it's important that we reflect on what's been done. I'm well aware of your two columns, John, and I find both columns appropriate. One column was "was there a broad impact" and the other "was there a likely impact upon dose in this case". You say high, medium, whatever and you move on. But now to say SC&A thinks that this case would go to compensable, that's a whole different place now.

DR. MAURO: That's good. No, then we're okay. I just want to make sure.

MS. HOMOKI-TITUS: And I -- I'm concerned with the second. I'm okay with your (unintelligible).

DR. WADE: Okay, everything we've done to this

point has been fine. That's why I've been stressing on the last calls to the Board that the Board needs to have mechanisms in place to track these things through to -- to final impact, which might be the PER, but you've got to watch how it's done. I mean we're not trying to avoid that final test, it just has to be done very carefully because now we're into legal grounds, and also the rights of -- of claimants.

MR. GRIFFON: Okay. Well, Kathy and Hans, what I -- what I propose is we just -- we -- we go through this action list, we see where -- you know, and -- and we'll just see what the -- NIOSH is proposing to give us in writing and we'll move these cases as -- as far as we can.

DR. BEHLING: Mark, let me just make a final comment here. I -- first, I do withdraw my comments made earlier. I stand corrected in -- in -- in being told that we cannot ask for a rework, and I will, however, say that my comments earlier were prompted by the most recent Board conference meeting that we had a couple weeks ago where -- where we were basically trying to understand how to somehow

or other track certain things that -- that have a history of -- of not being resolved and -- and so I -- I just want to justify my comments. On the other hand, I withdraw my comments that I made earlier. I -- I realize now, in -- in -- in comments made by the legal people, that -- that I should not have said those things.

DR. WADE: Well, Hans, we applaud your desire to help the process through to completion. We applaud that, we welcome it. It's just important that we do it just right and --

DR. BEHLING: I understand.

MR. GRIFFON: Okay, then I -- I -- then let's let NIOSH start with this listing and then we'll go from there.

MR. HINNEFELD: Okay. This is Stu Hinnefeld, for those of you on the phone. The -- the table that I distributed to Mark late last week, and I believe he then sent to the subcommittee members that no one has really had time to look at, I compiled from reviewing the findings matrix for the fourth set and identifying findings where I felt it would be helpful to deliver written material for consideration in advance of a technical

discussion, and hadn't done this earlier because it -- it hasn-- you know, candidly, it hasn't been the practice of the subcommittee on dose reconstructions to exchange that, while it has been on the site profile reviews and other various workgroups. So to my detriment, I didn't realize it would be a good idea to exchange this ahead of time. So -- but I -- once Mark and I talked about or exchanged e-mails about the issue then -- or about the exchange of information, I began to look -- well, there are certain items that lend themselves -- certain findings lend themselves to that and -- and certain findings that either -- that -- that I think essentially have been dispositional. You know, that's kind of how I selected these cases.

And so I can start down the list that's been distributed to the people here in the room of what I called additional analysis for fourth set of DRs, the first item being from case number 65, finding number four, which comments on the ingestion intake used in that claim not -- maybe not being claimant favorable. This is -- case number 65 was a Chapman Valve case, and

in reality -- I mean there is -- that is an outstanding, you know, overarching technical issue that's on the table already is ingestion approach, and that description is being prepared outside this subcommittee. So I mean there is going to be a generic ingestion approach presented as part of the overarching issues resolution. So I think it's probably -- you know, I wasn't going out on a limb by offering to submit written information for that. The rest of them maybe I -- I did a little bit.

Moving on to the second -- actually the next three items relate to case number 67, which is a Savannah River case. And -- and these relate to how internal doses of various natures were incorporated in the dose reconstruction, and -- and they followed, essentially, the technical approach that NIOSH has adopted for the Savannah River internal dosimetry, you know, dose reconstructions. So these do in fact -- you know, they would relate to very many claims, you know, these issues and the resolution of these issues. So I -- I've brought in the internal dosimetry folk-- we

thought -- you know, I thought originally we'd be discussing, but I don't think it would -- I guess we won't go into a significant technical discussion about that, but if we have a brief discussion or somebody give us a -- you know, Dave or somebody give us a brief description of what -- what the basis is for each of these approaches, then that might be able to shape what product we would want to bring when we bring the written material.

DR. WADE: Good.

MR. HINNEFELD: So Dave, the first one is about failure to account for all internal doses from fission products. And if you give me a second, I can actually read -- you know, the finding won't say much more than that, but there'll be a description in here that says more. It says for missed fission product internal doses, NIOSH's doses, which were limited to barium-140 and lanthanum-140, are incomplete. On the basis of MDA values, NIOSH needs to determine the internal doses in behalf of all other fission products and activation products that showed net positive counts, as well as strontium and yttrium-90, and perhaps others

that (unintelligible) reasonably be assumed have been internalized. So that's the basis of the finding is that a single nuclide was selected for the dose calculation when there were -- clearly you don't get one fission product if you get a fission product, so -- Dave, did you want to -- can you talk about that a little bit or --

MR. ALLEN: Yeah, I think there's actually several issues and that's one reason we didn't want to try to guess and supply some sort of information. We needed to have a conversation with -- Hans I guess is probably the commenter here.

The first issue is that when you have fission products you don't have simply one. You're going to have a whole mixture of fission products, and that is a struggle as to what group of fission products do you account for and how do you account for them. The whole body counter tends to grab or detect gamma emitters and at various MDAs depending on the yield, the energy, et cetera. And you can -- for example, cesium is fairly easily detected and you can pretty much count on cesium --

cesium-137 always being there, so the technical approach would -- the best technical approach would be to determine how much cesium you have and the ratio all the other possible fission products off of that, which gets to be an overwhelming problem very quickly with all the potential fission products.

What we did early on and in these cases was to use a chooser program to where we took the worst fission product we can come up with as far as detectability -- and by worst I mean based on the MDA and the dose consequences of that isotope -- and we assumed all the fission products would come from that worst one and that -- emphasis on that one, didn't -- not accounting for all the other potential fission products there. Based on some preliminary calculations, we were thinking this was an -- a favorable approach and the best one we had at the time.

Currently we're working on more detailed analysis for that and getting it into an OTIB where we're assessing various reactor burn-up rates and decay times since the reactor fuels come out for reactor operators or people

working around a reactor, as well as the canyons or dissolving fuel later, you know, depending on how much time since the fuels come out of the reactor, the ratios will change, you know, based on all those situations. And we've got it narrowed down to a handful of categories that would seem -- that we believe are bounding, what the ratios of those are, and that will allow us to more accurately determine a dose reconstruction from fission products for the various sites, the various exposure scenarios.

That's not quite complete yet. It's a very -- as you can imagine, it's a very complicated situation. It has been discussed, I believe in Hanford TBD or SEC, one or the other -- it's an overarching issue. It's not going to just affect Savannah River. It's not going to just affect this case. And personally, I'm thinking we're better off saying this is an overarching issue. It's already being discussed in another working group and -- and let it all be a -- very consistent across the --

MR. GRIFFON: Which --

MR. ALLEN: -- complex.

MR. GRIFFON: Is it in the Hanford working group being discussed, or where is it --
MR. ALLEN: One of the Hanford working groups, I'm not sure which one. There's a TBD and an SEC we're --
MR. HINNEFELD: Yeah, but isn't it the same working group on both?
DR. WADE: Yes.
MR. HINNEFELD: It's the same working group on -- for both.
MR. ALLEN: It's definitely being discussed there and I don't know if it's being discussed in the -- is there a Savannah River working group now?
MR. HINNEFELD: There is a Savannah River working group --
MR. GRIFFON: Yeah, I think they --
MR. HINNEFELD: -- but I don't think it's on the -- on their --
MR. GRIFFON: I don't think we got it on there yet.
MR. ALLEN: But it's clearly a complex-wide type of issue that --
MR. ELLIOTT: Is this on Jim's list of overarching issues, though?

MR. ALLEN: I don't believe it is, but I -- I'm kind of proposing here we take it out of, you know, individual dose reconstruction and put it on that -- that realm so it's consistent, rather than trying to deal with this case-by-case type of thing.

DR. BEHLING: Dave, this is Hans. I just want to make a comment, and I -- let me just preface the thing that is most important by saying that we fully understand that fission products and -- and so when we talk about -- I'm very familiar with whole body counting, their -- their level of sensitivity for gamma emitters, and -- and we also recognize that the likely contribution of doses from fission products that are at the MDA level, or even modestly above, are not really significant. I -- I think the only reason I really mentioned it because of -- I -- in recognizing the triviality of doses was that it's technically incorrect because the way it's always stated is that we have basically taken cerium-144 as the limiting radionuclide and -- and used that as an assessment and that's claimant favorable. The truth is while you've taken cerium-144 and

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

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

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

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

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

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

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

MS. BEHLING: Can I interject one -- one thing here? This is Kathy. I -- I think that everything that you described, David, it sounds like an appropriate approach to -- in fact, it may be going overboard on -- although I won't necessarily say that because you're certainly going at this particular problem the correct way and I think we agree with the fact that you are -- you are looking at this and you're going to consider all of the fission products. And this is a little bit contrary to what Hans just said. Now let me ask if I understand this correctly. I assume that since this will

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

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

MS. BEHLING: Okay. Okay, very good.

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

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

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

MR. GRIFFON: Right.

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

MR. GRIFFON: Right, right, right.

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

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

MR. GRIFFON: Okay.

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

MS. MUNN: That's great.

MR. GRIFFON: We have a big parking lot here.

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

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

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

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

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

MR. GRIFFON: Are we --

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

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

MR. ALLEN: This particular --

MR. GRIFFON: And I --

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

MR. GRIFFON: Other things --

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

MR. HINNEFELD: (Unintelligible)

MR. ALLEN: And -- I mean if it were to -- (unintelligible) is going to kill me here -- I

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

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

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

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

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

MR. GRIFFON: Okay.

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

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

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

MR. GRIFFON: Yeah, we get your written analysis and understand that this is one of those global things that's going to be followed up in the TIB and the Hanford workgroup. That's the notes I have. Okay. All right. Next one, Stu?

MR. HINNEFELD: Okay --

MR. GRIFFON: Moving right along.

MR. HINNEFELD: Yeah, 67 --

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

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

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

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

MR. HINNEFELD: 67.11 addresses the uranium -- addresses the --

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

MR. HINNEFELD: That was a different finding.

MR. GRIFFON: Does it include that one?

MR. HINNEFELD: It was a different finding.

MR. GRIFFON: (Unintelligible)

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

finding that occurs later on.

MR. GRIFFON: All right.

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

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

MR. HINNEFELD: Yes.

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

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

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

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

MR. GRIFFON: Says that, too? Okay.

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

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

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

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

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

MR. GRIFFON: Right.
DR. BEHLING: -- for the fifth set, so maybe we should just try to minimize the discussion.
MR. GRIFFON: Did you -- I know Liz -- maybe Liz has one comment --
(Whereupon, multiple participants spoke simultaneously, rendering transcription of individual comments impossible.)
MS. BRACKETT: I have -- I have two comments. First --
MR. GRIFFON: She's come all the way from Connecticut, we've got to get her on the record.
MS. BRACKETT: First, I -- I -- first, I do agree with you. I constantly lecture people and I think I was ranting to Dave about this yesterday, that I -- I try to make the dose reconstructors understand that it's not appropriate to assign every intake the day before a -- a positive result.
On the other hand, there -- it's not necessarily -- well, compelling evidence can also be looking at the other bioassay results. It sometimes simply is -- it's just very difficult to fit the results. If you used a

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

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

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

MR. GRIFFON: Go ahead, Kathy.

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

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

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

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

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

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

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

MR. GRIFFON: I'm not sure.

MS. BRACKETT: -- in detail.

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

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

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

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

MS. BEHLING: I understand.

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

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

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

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

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

of individual sites with geometric adjustments. I know Mallinckrodt (unintelligible) this done. But I think Jim told me that this is sort of an overarching issue of dealing with that, that particular issue. I think one thing to keep in mind when we talk about -- about dosimeter uncertainty and -- and how it's accounted for is that the uncertainty becomes a factor in our program at the annual level, because you have a line on the IREP input sheet which is annual dose of a particular time and -- and uncertainty associated with that, in -- in many cases. And so that's where it becomes important. And so the important thing to under-- you know, to get right is have we bracketed or correctly specified the uncertainty in the annual dose measurement rather than any specific dosimeter reading measurement, because the uncertainty -- or the relative uncertainty will converge as you combine say 12 -- 12 (unintelligible) --

DR. MAURO: But not if you're systematically using a generic approach which is -- for example, assumes direct as opposed to angular exposure. In other words, imbedded in the

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

MR. HINNEFELD: Rather -- rather than (unintelligible).

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

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

DR. MAURO: Right, I got it.

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

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

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

DR. MAURO: Uh-huh.

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

DR. MAURO: That's correct.

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

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

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

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

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

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

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

MR. HINNEFELD: (Unintelligible)

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

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

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

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

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

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

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

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

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

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

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

DR. POSTON: That works for me.

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

MS. MUNN: Accepted, okay. Right?

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

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

MR. HINNEFELD: Right.

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

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

MR. HINNEFELD: Right.

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

MR. HINNEFELD: All right.

MR. GRIFFON: -- they just received them, but --

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

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

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

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

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

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

MR. GRIFFON: 68.4, right?

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Okay.

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

owing something on that, I believe. Right?
MR. SIEBERT: Yeah, we're working on that. But it -- the other thing is the original assessment did not take into account in-growth for the americium-241 from plutonium-241. I know we're not getting technical here, but it is very claimant-favorable that way. Once you take that into account, you start over-predicting the chest counts when you go from urine, and we're -- we'll -- we'll show that in our -- our response.
MR. ALLEN: Yeah, I think most of these IMBA runs in general that we talk about today basically just show that if you just looked at one bioassay, similar to the comment in here, you find out that you're inconsistent with the remaining data, and we strove all along to be consistent with all the data that we have for the individual. Once you do that, I think you come back to where we started, so we'll -- we'll produce some IMBA analysis --
MR. GRIFFON: I'm not --
MR. ALLEN: -- to -- to show that.
MR. GRIFFON: Okay. The only confusion I have with -- with your statement is that if -- if

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

MR. HINNEFELD: Yeah, the --

MR. GRIFFON: I mean --

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

MR. GRIFFON: Yeah.

MR. HINNEFELD: -- dose reconstructions where the --

MR. GRIFFON: Right.

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

MR. GRIFFON: Okay, so any time --

MR. HINNEFELD: That's what --

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

MR. HINNEFELD: -- that kind of --

MR. GRIFFON: All right.

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

MR. GRIFFON: So there may still --

MR. HINNEFELD: -- the fact --

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

MR. HINNEFELD: There may be overestimates.
MR. GRIFFON: -- overestimating, okay --
MR. HINNEFELD: It may be an overestimate to the internal fit --
MR. GRIFFON: All right.
MR. HINNEFELD: -- so yeah.
MR. GRIFFON: But you can -- you can show that in the write-up in the IMBA, and that's fine. Good. All right.
MR. HINNEFELD: Okay, 68.5 is -- again, is -- we believe an IMBA analysis showing the -- the uranium intakes and how they would fit the bioassay data best would be the best way to explain the selection of intake dates, so the IMBA analysis is another -- I mean I think we should provide that there.
And 68.7 I believe is the same as 67.8.
UNIDENTIFIED: Yes.
MR. HINNEFELD: Okay, I believe 68 -- case 68 (unintelligible). Case 69 is --
MR. GRIFFON: This is still Savannah River. Right? 69 on (unintelligible) --
MR. HINNEFELD: Still Savannah River.
MR. GRIFFON: Yeah.
MR. HINNEFELD: Finding 69 dash 2 -- I think I

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

(Pause)

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

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

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

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

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

MR. HINNEFELD: (Unintelligible)

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

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

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

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

MR. GRIFFON: All right.

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

MR. GRIFFON: Right, right, right.

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

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

MR. HINNEFELD: Once you start worrying -- once

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

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

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

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

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

DR. MAURO: Uh-huh.

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

MS. MUNN: (Unintelligible) totally improbable.

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

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

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

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

DR. BEHLING: Uh-huh.

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

DR. BEHLING: Yes.

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

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

UNIDENTIFIED: Uh-huh.

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

DR. BEHLING: I agree, I agree.

MR. GRIFFON: Right.

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

MR. GRIFFON: All right.

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

DR. MAURO: Correct.

MR. HINNEFELD: This is a different

radionuclide, I believe, or a different bioassay scheme.

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

DR. MAURO: You're talking 70.2?

MR. HINNEFELD: 70.2.

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

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

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

DR. MAURO: As opposed to an uncertainty issue.

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

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

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

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

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

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

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

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

MR. GRIFFON: Incorporating appropriate

uncertainty in recorded dose, recalculating dose?

MR. HINNEFELD: We could --

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

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

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

MR. GRIFFON: Impact, yeah. Okay.

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

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

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

MR. GRIFFON: The only --

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

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

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

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

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

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

MS. BEHLING: Right.

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

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

MR. HINNEFELD: (Unintelligible)

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

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

MR. GRIFFON: Yeah.

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

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

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

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

MS. BEHLING: That's fine.

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

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

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

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

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

(No responses)

No.

DR. WADE: Okay.

MR. GRIFFON: Okay, we're -- we're ready to reconvene, for those on the telephone. Hans and Kathy, I assume you're there?

MS. BEHLING: I'm here. Hans is going to --

MR. GRIFFON: Okay.

MS. BEHLING: We're walking on -- working on something else right now, so I'll be on.

MR. GRIFFON: Okay, we're -- we're going to start the fifth set, so I think this is kind of our preliminary run-through, and I think that we have a lot of issues that we've seen before, so we might be able to -- to go through some of these fairly quickly, but other ones I'm sure will take a little time. So -- and -- and I don't know -- well, we'll -- we'll do our normal thing here. We'll let SC&A and NIOSH go back and forth, I guess, on -- on -- we'll go through the findings one by one.

MS. BEHLING: Okay. Mark, can I just -- I'm going to start off by saying in this fifth set we had -- I believe there were about ten AWE cases, and I put all of these AWEs up front in our report, and then I do all the DOEs thereafter, so -- John did the AWEs so initially I was going to suggest that maybe

we'd do an AWE and then a DOE, but I -- I won't add that level of confusion, but --

MR. GRIFFON: No, I think we'll just run through them in order and John's here to take the lead on the AWEs. Right?

MS. BEHLING: Right, and I'm just going to make a suggestion here, and I -- and this is obviously your call. One of the things, to -- to just remind everyone, when we do look at these AWEs is we approach them a little bit different than we do with the DOE facilities. And with the AWEs, when we see an exposure matrix that has been used, we also not only evaluate the case, but we try to evaluate that exposure matrix and -- and look at, again, maybe some global type issues that don't always apply to -- specifically to this particular case. And as we've been talking all along about tracking these items, I believe with -- when we come across these particular cases where we do have an exposure matrix issue, often we will push things off into a site profile when we have these issues come up with the DOE facilities, but might I suggest that we may want to consider making sure that they

don't get -- fall through the cracks and that they are followed through maybe on this Task IV matrix and that we do follow through with any exposure matrix issue within Task IV. It's just a suggestion. It's something we'll have to think about as we go through these AWEs.

MR. GRIFFON: (Unintelligible) and -- and I had the same no-- and I think it -- if -- if folks remember, I think part of our selection process sometimes -- one of our criteria was that, you know, well, we -- we've -- haven't done any on this small little AWE site and probably likely only do one case from that site, so in effect it's sort of the site profile review, in a nutshell, is the way we were kind of looking at it, so I agree, Kathy. And with that, we'll let -- either one, I don't care what order we go in. If NIOSH wants to describe their response or --

MR. HINNEFELD: That will work for me, yeah.

DR. MAURO: Well, I would like a 30-second sound bite on each one because I know that these AWEs are special because each one has their own -- in essence, in a 30-second sound bite -- a story to be told. And I think within

that story and understanding of the context within which we're working, then -- I think then the -- the NIOSH responses come to life. I think by just looking at the comment and the response --

MR. GRIFFON: Yeah, okay.

DR. MAURO: -- it's -- it's very -- doesn't really give the richness of -- of -- the importance and its relevance. So -- so on each one, maybe if I can just give a 30-second piece and then I -- then I can turn it over so I can sort of set the stage as I -- I see it.

MR. GRIFFON: Let me -- let me understand. You're going to do a 30-second --

DR. MAURO: A 30-second sound bite --

MR. GRIFFON: Okay.

DR. MAURO: -- of what I think the essence of the problem is, because these are --

MR. GRIFFON: I was laughing at the 30-second aspect of that. If you can do it in 30 seconds, I'll be very happy to give you that, John.

DR. POSTON: He's Italian.

DR. MAURO: I'm Italian. It's impossible.

MR. GRIFFON: I know. We know,

(unintelligible) going.

DR. WADE: (Unintelligible) won't be able to talk at all.

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

MR. GRIFFON: No, but if you can keep it succinct, all teasing aside -- all right.

DR. MAURO: Bridgeport -- Bridgeport Brass, first one, what we have is uranium handling and extrusion facility. Okay? The approach taken in reconstructing the doses here was using OTIB-4. And one of the important issues that arose, and we've talked about this before, is that it was -- it was used and it was used to compensate. Okay? It was our understanding early on, and it may have changed, that the use of OTIB-4 as a generic procedure that applies to all AWE sites across the board. When you don't have site-specific information, you go to OTIB-4, which is sort of like the universal fix, and it -- and by the way, in our opinion, OTIB-4 is a very good universal fix for AWE facilities in terms of placing an upper bound on what the exposures might have been, so I

mean -- so we're okay --

MR. ELLIOTT: For uranium facilities.

DR. MAURO: For uranium facilities, for uranium facilities, that's what it's for. And -- but we -- our big concern with that, we -- it was our understanding that because it was sort of a very -- a pretty bounding approach, that -- and -- and given the introductory words that go along (unintelligible), we interpret it as being something that was used for -- for -- only for denial, but (unintelligible) ran across a case that was compensated.

In addition, we ran across -- we found out that subsequent to this dose reconstruction there actually was an exposure matrix -- a site profile -- issued for this site, Bridgeport Brass. So we find ourselves in an interesting situation. We have a person who has been reconstructed, granted, but then along comes a site profile and then -- and we had the benefit of that, of course. By the time we received the audit review, that site profile was out. So what we did is we reviewed the case using the site profile for Bri-- and we come in with substantially lower doses.

So in essence -- 30 seconds, not bad --

MR. GRIFFON: Not bad.

DR. MAURO: -- we -- our problem is, what do you do when you have this situation? And -- and with that, I guess we could -- I could turn it over to you folks.

MR. HINNEFELD: Well, in response to that question, what we do is nothing unless DOL asks us to. DOL is aware of these cases. I mean we -- we discussed these. These are -- some of these were on the fourth set and we talked about it. (Unintelligible) some of them down here was October or something, we talked about these at some length is that, you know, this -- this approach was used for a short period of time, I think 2005, at the urging of -- push to get cases done. It was applied more broadly than it should have been applied and DOL is aware of the cases that were done in this fashion. If they want us to do something about it, they'll reopen the case and send it back. And if they don't reopen it and send it back, then we won't do anything about it.

DR. MAURO: For the benefit of the Board, the difference in the doses are extremely large --

MR. HINNEFELD: Yeah.
DR. MAURO: -- a 30-fold difference in the internal dose, and I don't -- and I'm not quite -- I'm quite sure what the external dose differences are, but they're -- it's not that they're small differences --
MR. HINNEFELD: Right.
DR. MAURO: -- between the realistic and the OTIB-4.
MR. HINNEFELD: Yeah.
DR. MAURO: Okay?
MR. GRIFFON: All right, let's go into the findings on (unintelligible) --
DR. MAURO: All right, we'll go on to the findings, sure.
MR. HINNEFELD: Number one is exactly that, is -- you know, use of OTIB-4 is inappropriate for compensable claims and that's true, it was used more broadly (unintelligible) was modified even to say this approach is also acceptable if you can't do any better, we can do the bounding dose. It wasn't modified to say that and it also was applied more broadly than it should have been (unintelligible) claimant (unintelligible). You know, I kind of -- kind

of (unintelligible) mea culpa on this (unintelligible) and -- and covered it and repeated essentially what we've talked about these cases before in that response, the NIOSH response to number one.

Finding number two has to do with the -- not being able to reproduce the external -- the model external photon doses that were in the version -- Rev. 2 of OTIB-4. We couldn't, either. So -- but Revision 3 has been issued in the interim. Revision 3 no longer includes that same table. It includes a different calculation technique. We've also described in here the description that Revision 3, since it uses the correct (unintelligible) and uses some different -- actually it uses like (unintelligible) and 30 to 250 and things like that, the total change from going from Rev. 2 to Rev. 3 was a change downward somewhat and so there was no need to go back and rework or reconsider cases that were done with Rev. 2.

DR. MAURO: We -- by the way, we have also independently calculated the extent of doses using MCMP and agree with you; that is, the doses go down.

MR. HINNEFELD: Okay.
MR. GRIFFON: Can we -- can we go back to 81.1 just for a second?
MR. HINNEFELD: Sure.
MR. GRIFFON: In the middle of your response it says the bounding estimates would become the best estimate. At -- at what point do you -- I mean do -- do you at any point have to evaluate whether there's sufficient data to do individual dose reconstructions for that site? Does it become sort of a question of, you know, self-identifying SEC situation if you evaluate --
MR. HINNEFELD: Well, I mean, yeah. I mean --
MR. GRIFFON: Well, you can establish plausible upper bounds for all workers? I mean it --
MR. HINNEFELD: I guess --
MR. GRIFFON: -- does it get into that realm or...
MR. HINNEFELD: -- our going in -- I guess our position is that TIB-4 is broadly applicable as a bounding dose for uranium operations. And if a site falls into that category, the uranium operation fits within the scope of OTIB-4, that OTIB-4 provides a bounding estimate. So I

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

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

MR. HINNEFELD: Well -- 81.3?

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

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

MR. GRIFFON: Okay.

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

--

MR. GRIFFON: Right, right.

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

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

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

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

DR. MAURO: (Unintelligible) try again (unintelligible).

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

DR. MAURO: Right.

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

DR. MAURO: Whether they belong --

MR. GRIFFON: Yeah, yeah.

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

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

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

MR. HINNEFELD: Yeah, we would use that.

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

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

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

MR. HINNEFELD: I can't remember.

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

DR. MAURO: Is this --

MR. GRIFFON: I'll check these things.

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

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

out one, but --

DR. MAURO: Okay, we --

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

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

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

DR. MAURO: It's the fourth --

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

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

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

DR. MAURO: Okay.

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

DR. MAURO: I don't know.

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

MR. HINNEFELD: Oh, good. Thank you.

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

UNIDENTIFIED: Always.

UNIDENTIFIED: Always. Constantly.

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

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

MR. HINNEFELD: Okay.

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

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

DR. MAURO: Yeah.

MR. HINNEFELD: That was your finding.

DR. MAURO: Yeah.

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

DR. MAURO: Okay.

MR. HINNEFELD: So --

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

MR. HINNEFELD: Yeah.

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

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

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

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

MS. MUNN: My memory (unintelligible).

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

MR. HINNEFELD: Yes.

MR. GRIFFON: -- than 81.2.

MR. HINNEFELD: Yes.

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

MR. HINNEFELD: We don't think so.

MR. GRIFFON: John?

DR. MAURO: I'm sorry?

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

DR. MAURO: Yeah, if that's -- that's what you would like to do.
MR. GRIFFON: No, for 81 2 I'm asking if you agree with NIOSH's response.
MS. BEHLING: We agree.
DR. MAURO: Thank you, Kathy.
MR. GRIFFON: Thanks, Kathy.
DR. MAURO: Thank you, Kathy.
MR. GRIFFON: Okay. Then 81.3, I was asking if there's like a PER number -- you say there's -- there's --
MR. HINNEFELD: Well, I mean there is an AP geometry PER --
MR. GRIFFON: Okay.
MR. HINNEFELD: -- that -- and I don't have the number handy, but it's -- again, this was -- you know, this is a TIB-4 case and it's already a significant overestimate the way it's done --
MR. GRIFFON: Yeah.
MR. HINNEFELD: -- so it's not clear whether this change is going to be significant enough to warrant.
MR. GRIFFON: And it was compensated, as well. Right?
MR. HINNEFELD: Yeah, this case would be

considered (unintelligible).

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

MR. HINNEFELD: Okay.

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

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

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

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

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

MR. HINNEFELD: Right.

MR. GRIFFON: Okay.
MR. HINNEFELD: 81.4 and 81.5 in the findings were about the use of OTIB-4 for this case, and we agree; 81.1 is essentially our -- our response to that -- that use. So that completes case number 81.
MR. GRIFFON: I want to make sure about 81 5. I just wasn't clear if they were asking about the data used for reconstruction -- reconstructing dose is adequate for -- again, for determining POC. But I mean it -- it -- why -- I don't understa-- can you --
DR. MAURO: It's the same thing. It's the sa-- it's -- it's the same issue there, is can you use OTIB-4 for compensation --
MR. GRIFFON: Oh, okay, for comp-- for a compensable case --
DR. MAURO: For a compensable case.
MR. GRIFFON: -- not for -- I thought you were talking about --
DR. MAURO: No, not --
MR. GRIFFON: -- for that site, was it appropriate for Bridgeport.
DR. MAURO: No, no, no, just in general across the board.

MR. GRIFFON: For compensable cla-- okay, okay.
DR. MAURO: Right.
MR. GRIFFON: So it is the same as 81.1.
DR. MAURO: It's the same exactly as --
MR. GRIFFON: Gotcha, so no further action. Okay, 82 --
MR. HINNEFELD: John, you want to do your 30 seconds?
DR. MAURO: Okay.
MR. GRIFFON: 30 seconds.
DR. MAURO: Harshaw Chemical, we have -- again it's case, compensated. And in this they also used OTIB-4 with (unintelligible) assumptions we described and the person was compensated. There is no site profile, as I understand it, for Harshaw -- at least the last time we checked.
MR. HINNEFELD: Not yet.
DR. MAURO: At least not yet. So it's not like the previous one where you do have a site profile. I mean it's sort of (unintelligible) dilemma. In this case we have a -- a -- what I would argue -- now the only question I have regarding application of OTIB-4 to a Harshaw case is keep in mind that the -- OTIB-4 is

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

MR. HINNEFELD: Yeah.

DR. MAURO: Is that right?

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

MR. ELLIOTT: (Unintelligible) cancer is esophageal.

MR. HINNEFELD: Yeah.

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

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

MR. ALLEN: It used to be --

MR. HINNEFELD: It used to be uranium metal.

MR. ALLEN: No --

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

DR. MAURO: Uh-huh.

MR. HINNEFELD: -- it was not strictly applied

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

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

MR. GRIFFON: Yeah, yeah.

DR. WADE: Tracked and fixed.

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

MR. HINNEFELD: Right, right.

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

exposure, work very well.
The inhalation part, 100 MAC, when I look at all the dat-- the records, even -- even for sites that handled -- you know, was processing uranium, not just grinding it --
MR. HINNEFELD: Right.
DR. MAURO: -- 100 MAC is up there.
MR. HINNEFELD: Yeah.
DR. MAURO: It ain't bad. So -- but nevertheless, there are cir-- some circumstances where you do go above 100 MAC, so it sounds like your latest version is going to limit it -- I guess, am I correct, to --
MR. GRIFFON: To metal handling.
MR. HINNEFELD: I've lost track.
MR. ALLEN: That is where it's at right now.
DR. MAURO: Only metal.
MR. HINNEFELD: All right.
MR. GRIFFON: Now what -- 82 was which site again?
MR. HINNEFELD: Harshaw.
DR. MAURO: 82 was -- the one we just did was Harshaw.
MR. GRIFFON: It is Harshaw. So the question I had was -- you said it was -- was it only

uranium, or was it --

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

MR. GRIFFON: All different forms, right.

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

MR. GRIFFON: Right, right.

DR. MAURO: Yeah, everything's there.

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Right.

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

MR. GRIFFON: SEC, right.

MR. ALLEN: -- (unintelligible).

MR. HINNEFELD: 83.14.

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

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

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

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

MR. GRIFFON: Yeah.

DR. MAURO: Right, so --

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

MR. GRIFFON: Okay.

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

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

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

MR. HINNEFELD: Uh-huh.

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

MR. GRIFFON: So is this an overarching issue --

DR. MAURO: This is --

MR. GRIFFON: -- that Jim volunteered --

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

MR. GRIFFON: So that covers 82.5. Right? That's the one you're (unintelligible)?
DR. MAURO: Yes, yes, I...
MR. GRIFFON: We're -- we're tracking that with that global --
DR. MAURO: Global.
MR. GRIFFON: -- pol-- now that's not been issued yet, has it, or -- you said you'd read something and you're happy with it, I didn't understand --
DR. MAURO: Well, no, yeah, I --
MR. ELLIOTT: You've seen it in the Bethlehem Steel revised Technical Basis Document, and Jim --
MR. HINNEFELD: That might be Bethlehem Steel-specific.
MR. ELLIOTT: It is Bethlehem Steel-specific, but the concept I think is what Jim's going to --
MR. GRIFFON: Right.
MR. ELLIOTT: -- develop, and -- and you will hear this -- I believe it's on his science agenda items for the May meeting. He's prepared to present the white paper on this to you and -- so if we can get that -- get your

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

MR. HINNEFELD: I like that, applicably.

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

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

MR. GRIFFON: Right.

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

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

-- we understand your concerns. Okay?

MR. HINNEFELD: Uh-huh.

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

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Right.

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

MR. HINNEFELD: Yeah, and -- and we don't say -- we don't claim it will, because --
MR. GRIFFON: What I've heard is that we'll look at this generic paper Jim will present and if -- you know, if it's accepted -- or, you know, after review, I guess NIOSH would say okay, let's reflect on that and does it affect any of our TIBs and we'll make the changes if we need to.
MR. HINNEFELD: Yeah.
MR. GRIFFON: So I think that's the way we state it here. I don't think there's any case-specific action --
MS. MUNN: No, I don't.
MR. GRIFFON: -- on that.
MS. MUNN: All the issues that have been raised are being covered elsewhere.
MR. GRIFFON: Yeah, yeah.
DR. MAURO: That's the reason why I --
MR. GRIFFON: Is 82 6 --
DR. MAURO: -- (unintelligible) 30-second so you could get the picture.
MS. MUNN: (Unintelligible)
MR. HINNEFELD: 82.7 is, again, the use of TIB-4.

MS. MUNN: Yeah.
MR. HINNEFELD: That's what that is.
MS. MUNN: It still (unintelligible) --
MR. GRIFFON: I was just stopping at 82.6. Is there --
MR. HINNEFELD: I think the only action would be that it's the generic ingestion issue.
MR. GRIFFON: Generic -- right, okay. Yeah, got it. Okay.
MR. HINNEFELD: That takes us to 83, 83 is Herring Hall.
UNIDENTIFIED: Herring Hall?
DR. MAURO: Herring Hall, early years, machined uranium, used OTIB-4 and the person was compensated. And as I see it, it's the same old story, you know, OTIB-4 was used. I don't -- now I don't believe there is a -- there might be -- site profile for Herring Hall?
MR. HINNEFELD: Not yet.
DR. MAURO: Not yet? Now when -- when -- when and if that does come out, we're going to have a very similar situation as we did for Bridgeport Brass. That is, you have a more realistic treatment.
MR. HINNEFELD: Yeah.

MR. GRIFFON: I think we're okay through 83 -- I mean I'm looking at them. They're the same findings, basically --

DR. MAURO: It's the same thing.

MR. GRIFFON: -- yeah.

DR. MAURO: Right.

MR. GRIFFON: So on to 84.

DR. MAURO: Okay.

MR. GRIFFON: See, we always gain steam in these meetings.

MR. HINNEFELD: 84 is Huntington Pilot Plant.

DR. MAURO: Hunt-- okay, yeah. Okay, Hunting-- Huntington Pilot Plant -- or let me just go to 84 and get myself fresh on this, what they did there.

(Pause)

Oh, this was the nickel facility, okay, got it. Yeah, this did not use OTIB-4. Okay? They actually have a -- an exposure matrix. Now here's a case where I think that you may have commented there well, this is a site profile issue and it would be -- and as a result, we will review it at that time. Quite frankly, as we had mentioned earlier, I think it's -- I think -- ought to review it here. You know,

it's --

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

DR. MAURO: Huntington --

MR. GRIFFON: Huntington (unintelligible).

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

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

MS. MUNN: Yes.

DR. MAURO: Okay. Now --

DR. POSTON: The birdcages are large.

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

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

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

Internal, we had no serious problems. The way we saw it was the -- this person's working the early years and he's inhaling this material.

Now think of it like this. Is this -- they have data where they measured the activity, airborne radioactivity, and they have the data for different time periods and different work activities. Okay? So in other words, we have a lot of data, so have lots of good data.

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

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

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

And we had a third problem, you used the data collectively and didn't make a distinction between breathing zone versus general air and you -- you know, from previous experience, if you look at the breathing zone data, then generally you get a little higher exposure.

So in the end, we think that -- that you probably could have been a little bit more claimant favorable, and that's my -- so now I'll try to paint the picture.

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

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

MR. ELLIOTT: Okay.
DR. MAURO: -- that -- that would have been --
MR. ELLIOTT: I understand. That helps me to understand --
DR. MAURO: Yeah, yeah --
MR. ELLIOTT: -- where you're coming from.
DR. MAURO: -- yeah, the -- I think that in -- for this particular worker, given when he worked and his job description, it seemed to us that he may not have been like the average. He may have been really a person that may have been off to the higher range.
MR. ELLIOTT: Understood.
UNIDENTIFIED: (Off microphone) What process was used to take the uranium (unintelligible)?
DR. MAURO: Well, they had their carbon (unintelligible) process, they called it, or carbon --
MR. HINNEFELD: Carbon (unintelligible).
DR. MAURO: -- carbon -- I believe the word was carbon (unintelligible), and it was a special chemical process that separated the uranium from the --
UNIDENTIFIED: (Off microphone) So it was a liquid?

MR. HINNEFELD: I think it was a gas.
DR. MAURO: I don't know.
MR. HINNEFELD: I think it was a gas, yeah.
UNIDENTIFIED: (Off microphone) That's why I'm asking.
MR. HINNEFELD: Yeah, I think --
UNIDENTIFIED: (Off microphone) If it was liquid, (unintelligible).
MR. ELLIOTT: It didn't destroy the barrier, it just pulled the stuff out of the barrier. Right? That's my understanding. And then they reused the bar-- they retooled the barrier and reused it.
DR. MAURO: They had --
UNIDENTIFIED: (Off microphone) (Unintelligible)
MR. GRIFFON: Do we -- this gets into a site profile question while you're looking (unintelligible) there, but has a site profile been issued on this yet or is it --
MR. HINNEFELD: (Unintelligible) there was -- there's been a site profile (unintelligible) --
DR. MAURO: This is -- yeah, this is --
(Whereupon, multiple participants spoke simultaneously, rendering transcription of

individual comments impossible.)

MR. HINNEFELD: And it's in revision.

MR. GRIFFON: Oh, revision.

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

MR. GRIFFON: Right, right.

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

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

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

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

nickel --

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

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

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

MR. HINNEFELD: Yeah, they measured airborne nickel.

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

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

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Right.

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

MR. GRIFFON: Surrogate, maybe.

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

One last point --

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

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

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

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

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

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

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

DR. MAURO: Yeah, right --

MR. HINNEFELD: Their contribution would be less --

DR. MAURO: Less than --

MR. HINNEFELD: -- if you --

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

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

transuranics, which are (unintelligible) --
DR. MAURO: I -- I -- I mean we're coming -- we're walking away with this thinking the internal dose may have been underestimated by more than a hundred-fold --
MR. HINNEFELD: Internal or external?
DR. MAURO: -- so we're not talk-- the internal, for the reasons I've --
MR. HINNEFELD: Oh, based on the air sampling, not the --
MR. GRIFFON: Right.
DR. MAURO: For the reasons I've --
MR. GRIFFON: Not on this issue that we're just talking about.
DR. MAURO: No, no, no, I'm sorry, no. But I mean -- I'm just trying to say that this is not a small thing.
MR. GRIFFON: Yeah.
DR. MAURO: We're not talking 20, 30 percent.
MR. GRIFFON: Well, now that we have sort of a big picture, why don't we go through -- you want to go through one by one or --
DR. MAURO: Sure.
MR. HINNEFELD: Well, I mean --
MR. GRIFFON: A lot of it -- a lot of it is

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

MR. HINNEFELD: Yes, site profile is being revised.

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

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

MR. GRIFFON: Yeah.

MR. HINNEFELD: Yeah.

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

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Right.

MR. HINNEFELD: -- we're looking at --
MR. GRIFFON: Right.
MR. HINNEFELD: -- the revised profile would be a key element to this --
MR. GRIFFON: Yeah, yeah.
MR. HINNEFELD: -- (unintelligible) comment.
MR. GRIFFON: Yeah, yeah, yeah.
DR. MAURO: So it is a parking lot issue? That is --
MR. HINNEFELD: No -- no, we'll -- we'll --
MR. GRIFFON: It's in this parking lot, though.
MR. HINNEFELD: -- we'll -- we owe a revised --
DR. MAURO: Okay.
MR. HINNEFELD: -- site profile.
MR. GRIFFON: Right.
MR. HINNEFELD: And either incorporation comments or, you know, a resolution attempt at the comments -- at each of the comments. Now there are at least two Huntington Pilot Plant cases that have been reviewed, so a resolution of all the comments from both those reviews has to accompany that -- you know, has to be part of the revised (unintelligible).
DR. WADE: NIOSH will provide the revised site profile. The subcommittee can decide if it

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

MR. GRIFFON: Yeah.

MR. HINNEFELD: Yeah.

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

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

MR. GRIFFON: Yeah.

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

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

UNIDENTIFIED: A little more than 30 seconds.

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

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

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

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

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

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

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

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

MR. GRIFFON: Right.

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

MR. GRIFFON: Right, right.

MR. HINNEFELD: -- site profile review priority --

MR. GRIFFON: Exactly.

MR. HINNEFELD: -- task.

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

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

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

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

MR. HINNEFELD: Yes.

MR. GRIFFON: Yeah, yeah, yeah.

MS. MUNN: If changes are made.

MR. HINNEFELD: Yes.

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

MS. MUNN: Yes.

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

MR. ELLIOTT: I don't think so.

MR. GRIFFON: The use or treatment of those

samples? No? Maybe I'm wrong.

DR. MAURO: We do have precedent --

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

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

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

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Right.

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

MR. GRIFFON: General.
DR. MAURO: -- general, so -- and --
MR. GRIFFON: So they added a factor, yeah.
DR. MAURO: -- so they added a factor in there and that --
MR. GRIFFON: But then I thought Jim off-- offered that they might look at this as a generic issue --
DR. MAURO: Maybe a generic --
MR. GRIFFON: -- but maybe I'm wrong, I --
MR. ELLIOTT: Well, I don't think it's on the list. I'm not saying it shouldn't be or not saying it shouldn't be looked at, I just don't think it's on the list that he's --
MR. GRIFFON: Well, we -- we can always --
MR. ELLIOTT: -- reporting --
MR. GRIFFON: -- bring that up in the discussion with Jim at the next meeting.
DR. WADE: When Jim presents in May, you can raise this issue.
MR. GRIFFON: All right. Good enough for now. Okay then, I think -- let's -- if everybody is set, pencil it off at 85 and we'll pick it up after lunch.
DR. WADE: Just a little bit of housekeeping.

So you're going to break for lunch now, back at 1:00 o'clock, is that the plan?

MR. GRIFFON: Yeah, yeah.

DR. WADE: Now I know that there's one subcommittee member who will leave this afternoon. I assume that, Mark, you will be here; Wanda, you'll be here; Mike, you'll be here this afternoon? So there will be a quorum of the subcommittee for you to work. Liz, either you or some representative needs to be here on the phone. And either Larry and I -- or I will be here as DFO.

So we're going to break now till 1:00 and we'll be back. We'll break the line now for those people on the line, and we'll reestablish the call at 1:00. Thank you.

(Whereupon, a recess was taken from 12:00 p.m. to 1:00 p.m.)

DR. WADE: Okay, we're back in session. Let me ask if there are any Board members on the call.

(No responses)

Okay, let's begin.

MR. GRIFFON: Okay, I -- we're back on the fifth set of cases, starting with 80 -- case number 85 is where we left off. I think we'll

continue there. John, 30-second synopsis?

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

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

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

second sound bite.

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

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

MR. HINNEFELD: Okay.

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

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Right.

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

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

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

of two.

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

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

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

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

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

MR. HINNEFELD: Right.

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

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Yeah.

DR. MAURO: -- time of exposure, proximity, dimensions --

MR. HINNEFELD: Right.

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

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Uh-huh.

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

MR. HINNEFELD: Okay.

DR. MAURO: -- might be the answer.

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

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

MR. HINNEFELD: Yeah.

DR. MAURO: Yeah.

MR. GRIFFON: There is a site profile?

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

MR. GRIFFON: And then this description of the

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

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

MR. GRIFFON: Yeah.

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

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

DR. MAURO: A model.

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

DR. MAURO: Okay.

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

DR. MAURO: Okay.

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

supporting information that illustrates, for uranium handling plants --

DR. MAURO: Okay.

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

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

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

MR. HINNEFELD: Yeah.

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

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

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

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

MR. HINNEFELD: Right.

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

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

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

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

MR. GRIFFON: -- written response.

MR. HINNEFELD: 85.2 is a dose due to resuspension.

DR. MAURO: Uh-huh.

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

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

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

MR. HINNEFELD: Uh-huh, yeah.

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

MR. HINNEFELD: Dose rate (unintelligible), okay.

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

MR. HINNEFELD: Uh-huh.

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

MR. HINNEFELD: Okay.

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

MR. HINNEFELD: Okay.

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

MR. HINNEFELD: Okay.

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

MR. HINNEFELD: Right.

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

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

DR. MAURO: Yeah --

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

DR. MAURO: Yeah.

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

DR. MAURO: Would be a better --

MR. HINNEFELD: -- would be more contributive --

MR. GRIFFON: Seems more appropriate, yeah, yeah.

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

MR. GRIFFON: Right, then --

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

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

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

DR. MAURO: Oh, was that -- that's --

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

MR. GRIFFON: So you have site data? Okay.
DR. MAURO: Oh, yeah, that was what --
MR. HINNEFELD: Yeah, this is one of the AWEs where there is pretty health site data.
DR. MAURO: Oh, yeah, absolutely.
MR. GRIFFON: So you don't have film badge data, but you have some --
MR. HINNEFELD: I guess not. I don't -- you know, there's not --
DR. MAURO: (Unintelligible) survey meter.
MR. GRIFFON: Okay.
MR. HINNEFELD: (Unintelligible) dose rate (unintelligible) --
MR. GRIFFON: I'm assuming from 85 1 that you don't have any --
MR. HINNEFELD: It sounds like we don't have -- don't have film badge records like we have -- like at Chapman Valve.
MR. GRIFFON: But you have a lot of maybe survey data or something like that.
MR. HINNEFELD: You know, I'm not very familiar with --
MR. GRIFFON: Okay, (unintelligible).
DR. MAURO: Yeah, there's (unintelligible).
MR. GRIFFON: It sounds like we're okay. I was

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

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

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

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

MR. HINNEFELD: Yeah.

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

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

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

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

MR. HINNEFELD: Okay. I mean --

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

DR. MAURO: Oh, yeah --

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

DR. MAURO: -- DTRA -- DTRA --

MR. GRIFFON: -- this come up before.

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

MR. GRIFFON: Outdoors.

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

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

MR. HINNEFELD: Yeah.

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

MR. HINNEFELD: Okay.

MR. GRIFFON: And then --

DR. MAURO: I felt that --

MR. GRIFFON: -- I would propose --

DR. MAURO: -- you were too low.

MR. GRIFFON: -- that that be done in that generic --

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

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

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

MR. GRIFFON: Yeah --

MR. HINNEFELD: -- issues and --

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

MR. HINNEFELD: -- so is --

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

MR. HINNEFELD: So we can --
MR. GRIFFON: Handle that that way.
MR. HINNEFELD: -- handle that there, probably. Okay.
MR. GRIFFON: Now as far -- and John, you're comfortable with the -- the use of the site data, though? Seems like they're using -- it's not really a median, but with a high GSD, you know.
DR. MAURO: From the swipes --
MR. GRIFFON: Yeah.
DR. MAURO: -- what the -- I thought you took the high end. I -- I'm not sure.
MR. HINNEFELD: I don't recall, sitting here. I -- I'm just not familiar with Superior Steel.
DR. MAURO: My recollection is you picked a high value for the swipe data, not the -- let -- let -- maybe (unintelligible) --
MR. HINNEFELD: Do you guys know?
MR. SIEBERT: I believe that's correct, yeah.
DR. MAURO: You did use the high value. Right? Or did you use the median?
MR. SIEBERT: It was -- no, I believe we used the max removable contamination.
DR. MAURO: That's what I remember, too, yeah.

Okay. It's -- it's written up in here and (unintelligible) --

MR. GRIFFON: Yeah, it says -- it says using the max removable --

DR. MAURO: Yeah.

MR. GRIFFON: -- contamination level reported during the available operation surveys, not the median.

DR. MAURO: Right, good.

MR. GRIFFON: Yeah. And a high GSD.

DR. MAURO: Yeah.

MR. GRIFFON: But I just was -- so you're comfortable with that? I mean I don't know how much data they had there, if it's five swipes or if it's -- you know, thousands or --

DR. MAURO: Quite frankly, I'm not sure whether this is an important contributor to the dose, either.

MR. GRIFFON: No, it may not be.

MR. HINNEFELD: Right, I'd be (unintelligible).

DR. MAURO: In fact, we could tell, according to this record -- hold on (unintelligible) tables summarizing...

(Pause)

That's -- no, we're talking about

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

MR. GRIFFON: Probably not much.

DR. MAURO: Zero.

MR. GRIFFON: Zero, there you go.

DR. MAURO: (Unintelligible) off to zero.

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

DR. MAURO: (Unintelligible)

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

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

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

MR. HINNEFELD: -- sure.

MR. GRIFFON: Okay.

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

DR. MAURO: Yeah.

MR. GRIFFON: Right.

DR. MAURO: Yeah, (unintelligible).

MR. HINNEFELD: And 85.5 is -- questions the

basis for the plutonium-239 and 237 activity fractions, and I didn't put an initial response in here, I think in large part because it's hard for me to believe that they have (unintelligible). We don't have evidence that there was recycled uranium sent to this place. The reason it's included in the site profile is that the Department of Energy didn't really track in particular their uranium as recycled or not recycled, so when they would have a contractor provide uranium to an AWE, it's a --

DR. MAURO: Well, I think you did include --

MR. HINNEFELD: We included some.

DR. MAURO: -- included it, and without any reference to why the particular --

MR. HINNEFELD: Those values were chosen?

DR. MAURO: -- (unintelligible) --

MR. GRIFFON: Right, where'd you --

MR. HINNEFELD: I can -- I suppose I could find those -- those references, and I -- I ga-- I think I ran out of time is why I --

MR. GRIFFON: Yeah.

MR. HINNEFELD: -- didn't actually get in--

DR. MAURO: We -- we -- we -- I didn't tur-- we -- in theory, I could have asked some of -- you

know, we did look at recycled uranium for Y-12.
MR. GRIFFON: Right, right, right.
DR. MAURO: In theory I could have turned some folks on to take a look, are these good numbers. I didn't do that. I just simply said, you know, you gave the percentages or --
MR. GRIFFON: Yeah.
DR. MAURO: -- parts per million you used --
MR. GRIFFON: Where did these come from, yeah.
DR. MAURO: -- with-- without giving a reference.
MR. GRIFFON: Yeah.
MR. HINNEFELD: Okay.
MR. GRIFFON: That's all we -- that's all we need.
MR. HINNEFELD: Well, we should be able to provide the source information.
MR. GRIFFON: Yeah.
MR. HINNEFELD: Okay, then -- that's it for 85 -- 86 is a Linde Ceramics case.
MR. GRIFFON: John, you're on.
DR. MAURO: Okay. Ah, this was an interesting one, and I think that this is a -- what we have here is a worker that worked at Linde -- there's an exposure matrix for Linde so it's

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

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

MR. HINNEFELD: Well, I --

DR. POSTON: I would assume --

DR. MAURO: I don't know.

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

UNIDENTIFIED: Yeah.
DR. POSTON: Welders don't do radiography.
DR. MAURO: And the wel-- and the welder would have been -- yeah. But there was something in the CATI to that effect --
MR. HINNEFELD: Well --
DR. MAURO: -- and that's why we brought it up.
MR. HINNEFELD: -- I took a -- I took brief read of the CATI and I guess I could have missed something. I didn't see anything that would indicate to me that he was routinely engaged in radiographic examination of welds. I know a lot of welds are done without radiographic examination.
In addition to -- the point that -- since he was hired in during the cleanup period, when they were cleaning up the uranium work, a welding activity in a cleanup -- in my experience, a welding activity in a cleanup experience is to cut the metal (unintelligible) --
DR. MAURO: Cut the metal and you don't -- and you're not putting it back together.
MR. HINNEFELD: -- and you're not putting it back together and you're not worried about the

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

DR. MAURO: Yeah.

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

UNIDENTIFIED: (Unintelligible) year.

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

UNIDENTIFIED: Uh-huh.

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

DR. MAURO: It wasn't on this.

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

part --

DR. MAURO: Okay.

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

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

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

MS. BRACKETT: Tonawanda.

MR. HINNEFELD: -- Tonawanda. This is -- Linde Ceramic is the Tonawanda site. It was the site that did in fact do --

MR. GRIFFON: And I thought the other one was the one that went to gas as -- I -- I may be wrong (unintelligible).

MR. HINNEFELD: I thought -- I thought both did. Am I wrong on that?

MS. BRACKETT: I'm not certain. I think it's a very large company, so I don't know --

MR. HINNEFELD: It was a division of Union Carbide at that time.

DR. MAURO: It was -- yeah, the ceramics, and Ton-- Tonawanda was more the research arm, I think, and Linde was the production arm. Now (unintelligible) --

MR. HINNEFELD: Well, there was -- there was a -- at Tonawanda there was a sort of a pilot plant --

DR. MAURO: Yeah, (unintelligible).

MR. HINNEFELD: -- and then there was a ceramics plant and -- that -- and they were already -- Linde was already working with uranium as coating -- colors -- you know, colors and glazes --

DR. MAURO: Right.

MR. HINNEFELD: -- during World War II. And so very early on the government relied on Linde as a uranium product-- producer for Manhattan Project. So very early on it was -- it got very quickly involved in the Manhattan Project uranium work. And then -- but that work kind of ended. I think they were done with their uranium work for the government by say about '52 or something, and this person hired in

during the cleanup. There was a -- like a two or three-year cleanup --

DR. MAURO: That's right.

MR. HINNEFELD: -- and then -- and then the site was turned over -- from a government site, it was turned over to Linde for ownership at that point. So this person hired in during the cleanup period and -- and just based on the -- you know, when he was hired, the nature of his -- and -- and the -- what kind of operations would have been going on in the radiological area at that time, they were cleaning it up, we just didn't see that there's, you know, much of an evidence for the --

DR. MAURO: Yeah.

MR. HINNEFELD: -- non-destructive testing.

DR. MAURO: The -- the post-- he was there for post-cleanup operations, and there's -- now there's no doubt that the exposures from the post-- after the cleanup are just negligible.

MR. HINNEFELD: Okay.

DR. MAURO: I mean we may have had some comments here on the methods used. For example, when -- when you folks modeled the post-cleanup portion -- let me see, I -- I

don't believe you included some of the progeny -- you know, the -- see, at Linde, unlike a lot of other sites, you've got the whole litany of radionuclides. You know, you've got the raffinates --

MR. HINNEFELD: Yes, yes, early on.

DR. MAURO: -- you've got -- you've got to have -- you know, it's not just uranium.

MR. HINNEFELD: Yes.

DR. MAURO: And -- okay. All right, let -- let me go -- give -- give me a second here.

(Pause)

We just left the external. Sounds like external -- position being well, listen, he may have done some cutting as a welder, but perhaps they -- he was not involved with any non-destructive testing. That was our only concern.

MR. HINNEFELD: Okay.

DR. MAURO: And if that's the case, that's the case and that's the end of that problem.

MR. HINNEFELD: Okay.

DR. MAURO: With regard to internal, what was done was you assumed this person was exposed chronically to 33 MAC -- 33 MAC is the highest

daily weighted average dust loading observed at Linde amongst a bunch -- a lot of measurements made, absolutely good number. And it also is considered to be representative of the breathing zone, and it also included progeny. So -- let me see, so 33 MAC, that's -- that's a good number. We have -- we're fully supportive of using 33 MAC as your default value for (unintelligible) as a -- as a plausible (unintelligible). And including the progeny. No -- the only thing -- I guess the only criticism we had regarding the -- that portion -- that is, during the cleanup and the 33 MAC -- I think you were silent regarding raffinates and any exposures he may have experienced from raffinates.

MR. HINNEFELD: Okay.

DR. MAURO: So it may be worth exploring that but (unintelligible) that could have contributed -- 'cause this person was denied, and our experience from other sites is that sites like this where there are -- there's a lot of processing going on, there are raffinates, and very often the thorium and the radium are separated, concentrated, and could

be an important contributor to exp-- intake. So there's no doubt that the 33 MAC was up there for uranium, but I think that may be -- I believe you're silent in this one on -- regarding raffinates.

MR. HINNEFELD: Okay.

MR. GRIFFON: Is this the Linde that's currently in site profile review, or is it the other Linde?

MR. HINNEFELD: This is the one site profile (unintelligible).

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

MR. GRIFFON: 'Cause I'm wondering if that could be taken --

DR. MAURO: Oh, yeah.

MR. GRIFFON: -- up there or --

DR. MAURO: Yeah -- yeah -- yeah, that -- that was one of our findings in the --

MR. GRIFFON: Would be appropriate. Right?

DR. MAURO: That's -- that's an issue, yes. You could -- this could -- this issue --

MR. GRIFFON: There's a wor-- there's a workgroup established on Linde -- right? -- and there's a -- is there actually -- is there an SEC?

MR. HINNEFELD: There is an SEC for early years at Linde.
DR. MAURO: Early years.
MR. GRIFFON: Oh, for early years.
DR. MAURO: And I believe that there --
MR. HINNEFELD: Internal monitoring at Linde started about '47 --
MR. GRIFFON: Oh, okay.
MR. HINNEFELD: -- or '48, so up until then, the earlier work is (unintelligible).
DR. MAURO: Yeah, this case --
MR. GRIFFON: The workgroup's covering the site profile and the SEC period, I think.
MR. HINNEFELD: I haven't been to the -- I haven't -- I think so.
MR. ELLIOTT: It's a site profile at this point.
MR. HINNEFELD: Yeah.
MR. GRIFFON: Site profile at this point, okay.
DR. MAURO: Okay, this employee worked at Linde from -- oh, early years, starting in '52 -- I won't give all the dates -- starting in '52. The -- the SEC that's -- that was gr-- there was an SEC granted on Linde.
MR. GRIFFON: Right.

DR. MAURO: That was -- it --
MR. HINNEFELD: It only goes up through about '47 or '48.
DR. MAURO: Oh, so -- so -- okay, if he's in a time period where he's not covered by the SEC --
MR. GRIFFON: Right.
DR. MAURO: -- I guess that's important, too.
MR. GRIFFON: But there is a workgroup reviewing the site profile --
DR. MAURO: The site profile.
MR. GRIFFON: -- so -- so we could probably --
DR. MAURO: Yes.
MR. GRIFFON: -- incorporate that in that review? Does that make sense?
DR. MAURO: That would be -- that would be -- that would make sense.
MR. GRIFFON: I hate to put it in other parking lots, but I think it -- it's --
DR. MAURO: Well, it makes sense because in a sense --
MR. GRIFFON: -- it's a question of whether there's other -- other nuclides of interest --
DR. MAURO: Right.
MR. GRIFFON: -- that, you know, could

contribute poten-- you know, significantly to their exposures. That's...

DR. MAURO: Yeah, in effect, what we have here is -- this is a good example. This is one of the places where an exposure matrix was used for an AWE facility. But as it turns out, this particular exposure matrix is on the table for review --

MR. HINNEFELD: Right.

DR. MAURO: -- by SC&A and is being reviewed, unlike a lot of the others, like Huntington and -- where -- where it really would be inappropriate to take --

MR. GRIFFON: This one we can defer. Right?

DR. MAURO: We can defer this (unintelligible) --

MR. GRIFFON: Right, right.

DR. MAURO: We can (unintelligible).

MR. GRIFFON: And 86.3 says this question -- NIOSH's response says this question is under review, so I think the site profile review makes sense to --

DR. MAURO: Good.

MR. GRIFFON: -- to close that out in that process. Right, Wanda?

MS. MUNN: Yeah, I -- I think probably so. But I guess there's some question in my mind whether the raffinate issue would be one that would be really applicable to a welder --

MR. GRIFFON: A welder, yeah.

MS. MUNN: -- in this --

MR. GRIFFON: I had that same -- yeah.

MS. MUNN: You know, why would -- I can understand in other parts of the plant --

MR. GRIFFON: Like a chemical operator or something.

MS. MUNN: -- where you might -- yeah, you might be concerned about that, but --

MR. GRIFFON: Well --

MS. MUNN: -- it seems to me (unintelligible) --

MR. HINNEFELD: I guess theoretically, to the extent that a welder may in fact have been involved in the cleanup where they would be likely burning and, you know, cutting metal pieces to remove, and if they were cutting piping and so on that carried the material -- sitting here now, it would be hard for me to say that there's no way that that welder could have been exposed to contamination due to

raffinate or, you know, product or intervening products, whatever might have been held up in the pipes during the work, so it's a little hard to say that (unintelligible) definitely that they wouldn't have been as a welder. Now if they were welding new stock, then they wouldn't have been. But welders are -- are sometimes used to take things apart in demolition.

MS. MUNN: And cut, too.

MR. HINNEFELD: So...

MR. GRIFFON: Yeah, yeah.

DR. MAURO: Yeah, which goes to this first issue. That is if, as a welder, and he was cutting up part of -- dismantlement of -- of a component of this -- piping systems that were -- had some residual contamination, I guess the -- begs the question, is he in a situation where -- and -- and he -- the per-- the type of cancer -- I don't know if I should mention the cancer --

MR. ELLIOTT: Huh-uh.

DR. MAURO: No -- were such that being up close and personal is -- if -- and -- if he was up close and personal to the sources of external

exposure, that means the average external exposures may not apply to him.

MR. HINNEFELD: Okay.

DR. MAURO: And that was my first finding.

MR. HINNEFELD: Okay. Well, I mean we can -- well, the second issue, about the -- the treatment of raffinate or non-uranium progeny, are -- I believe is on the Linde site profile.

DR. MAURO: It is on, absolutely, that's (unintelligible).

MR. HINNEFELD: The second question of what types -- is it appropriate to assign median level doses and --

DR. MAURO: That's -- that's legit for here.

MR. HINNEFELD: That -- that one -- okay. So then we would need some sort of -- something in writing about --

MR. GRIFFON: Is that on 86.2 or --

MR. HINNEFELD: -- whether we believe -- that would be 86 -- that's 86.1, I believe --

MR. GRIFFON: Or is it --

MR. HINNEFELD: Wait a minute.

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

MR. HINNEFELD: No, 86 --
DR. MAURO: Yeah, they're -- the difference between 1 and 2, I think in 1 we're talking about whether he might have got -- been exposed to radiographic examinations --
MR. GRIFFON: Right.
DR. MAURO: -- and the argument --
MR. GRIFFON: And 2 is process --
DR. MAURO: And 2 is being up close and personal to the pipe.
MR. GRIFFON: Right.
MS. MUNN: And first -- number one seems unlikely.
MR. GRIFFON: I think number one we disposed of. Right? You -- you would agree with NIOSH's --
DR. MAURO: I'm -- I mean I'm not -- yeah. I don't -- I don't -- (unintelligible), yeah. So the --
MR. GRIFFON: So two you're saying you want some more --
MR. HINNEFELD: We can provide a written product on number two.
MR. GRIFFON: Written product, okay. Written response.

MR. ELLIOTT: While there's a lull, I'd just like to caution all of us to make sure that when we're talking about these cases we don't go too far into too much detail, maybe use a -- apply a rule of three. If you give three particular characteristics about the claim -- for these AWE sites in particular where we only have a small number of claims -- you tend to narrow it down, and we want to be careful that we don't have too much redacted out of your transcript here today.

MR. GRIFFON: (Unintelligible) caution, yeah. Okay.

MR. HINNEFELD: 86.4 I believe related, again, to the welding question, if I'm not mistaken. Is that right, welding and potential (unintelligible)?

DR. MAURO: Right, that was the CATI question, yeah.

MR. HINNEFELD: Yeah, potential for non-destructive examination, X-ray examination on that, so I believe that fits with number one.

DR. MAURO: Yeah.

MR. GRIFFON: I -- I had a second sort of little comment here on 86 4. This goes back to

one of our old findings, not only whether -- and I didn't know exactly what was said in the CATI, but we've always had this question of was it -- was it addressed in the DR report.

DR. MAURO: Uh-huh.

MR. GRIFFON: You know, even if -- even if there wasn't additional exposures, we like to -- you know, we've -- and you've agreed to this, Stu, that the DR report should at least say -- at least acknowledge the comments made by the -- by the individual interviewed.

MR. HINNEFELD: Well, we -- we do try to say --

MR. GRIFFON: And (unintelligible) say that our technique addresses it or whatever, so I didn't know if this finding was related to the DR report --

DR. MAURO: Yes.

MR. GRIFFON: -- or the actual numb-- you know.

MR. HINNEFELD: Well, it's -- it's related to the -- the fact that the CATI talked about him being a welder --

DR. MAURO: Welder, exactly.

MR. HINNEFELD: -- and working on that.

MR. GRIFFON: Oh, so just welding in general, okay.

MR. HINNEFELD: And so it -- it --
DR. MAURO: That's all. Yeah, you're right, we've -- very --
MR. GRIFFON: It wasn't about his speci-- you know, that he specifically said he was exposed to these --
DR. MAURO: X-ray.
MR. GRIFFON: -- X-rays during --
DR. MAURO: No.
MR. GRIFFON: -- the welding.
DR. MAURO: No, no, no, it was my --
MR. GRIFFON: All right, that's fine.
DR. MAURO: -- leaping to -- when I heard welder --
MR. GRIFFON: Yeah.
DR. MAURO: -- I think non-destructive testing.
MS. MUNN: Yeah.
MR. GRIFFON: So no further action on that one. Okay.
MR. HINNEFELD: Okay, claim number 87 is from MIT.
DR. MAURO: MIT, let me just get to that. Okay, this was an OTIB-4, no -- no site profile. Whether one's in the making or not, I don't know. This particular -- this is one of

the cases where someone was granted. He was -- the cancer was granted, so it is again that issue of using OTIB-4 for granting. And I don't think there's anything else that I'm looking at here that is --

MR. GRIFFON: Anything new. Right?

DR. MAURO: -- anything new. It's just --

MR. GRIFFON: Yeah.

DR. MAURO: -- everything else about this is really -- the thing -- this is almost a classic example. You used OTIB-4 to grant it, and -- and all of the commentaries we have regarding OTIB-4 apply here also.

MR. GRIFFON: Okay.

MR. HINNEFELD: Yeah.

DR. MAURO: No need to go into (unintelligible).

MR. GRIFFON: I don't think we need to go into (unintelligible).

DR. MAURO: Exactly.

MR. HINNEFELD: Okay.

MR. GRIFFON: Except one question on that. Is -- is OTIB-4 -- or can you explain to me why OTIB-4 would be applicable to MIT? I don't know that much about what -- what they did at

MIT.

MR. HINNEFELD: Well, chances are -- chances are it wouldn't be. It was part of that group or the application of TIB-4 was broader than -- than it should have been.

MR. GRIFFON: Okay.

DR. MAURO: Yeah.

MR. GRIFFON: Broader, not only in -- in the fact that it was a compensable claim, but also broader in that the facility --

MR. HINNEFELD: The facility was --

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

MR. HINNEFELD: Yeah.

MR. GRIFFON: I was going to say -- okay, 88.

MR. HINNEFELD: 88 is -- NUMEC? Yeah.

DR. MAURO: 88? Yeah, NUMEC. Let's see what we've got here. I believe that -- I think -- I -- did NUMEC use --

MR. HINNEFELD: This case used OTIB-4, again, it was one of the inappropriately utilized -- utilization for --

DR. MAURO: Oh, I'm looking at the wrong page -- 88, got it. Yes --

MR. HINNEFELD: So some of the findings relate to those --

DR. MAURO: -- OTIB-4, granted, (unintelligible) --

MR. HINNEFELD: -- some of the same -- some of the same findings, but there are some additional things, too.

DR. MAURO: Okay. This is a little -- yeah, this is a case where OTIB-4 was used to grant and there's another dimension to it. Perhaps -- and unlike some of the other OTIB applications where it was uranium, maybe uranium and, you know, the various forms of uranium, also --

MR. HINNEFELD: Right.

DR. MAURO: -- not only metal. NUMEC was interesting because they did a lot more than handle uranium, so it's possible whether -- that you would want to use OTIB-4 for this (unintelligible).

MR. HINNEFELD: It wouldn't -- OTIB-4 really doesn't fit NUMEC, that's true. That's one of those --

DR. MAURO: Right.

MR. HINNEFELD: -- inappropriately broad

applications.

DR. MAURO: Yeah, okay. And here's -- and one last point on this one that --

MR. GRIFFON: But it was compensated. Right?

DR. MAURO: I don't -- and this one was compensated. There was some bioassay data available. I'm not quite sure how you deal with this, but in this particular case the records indicated that he had some bioassay data but you elected not to use it.

MR. HINNEFELD: Actually we didn't have it when the dose reconstruction was done.

DR. MAURO: Oh, okay.

MR. GRIFFON: You received after (unintelligible).

MR. HINNEFELD: We received it -- we received it after the dose reconstruction (unintelligible).

DR. MAURO: Oh, okay.

MR. HINNEFELD: And it -- we didn't -- we weren't really expecting to receive any 'cause, you know, DOE doesn't provide us information for -- for NUMEC. We don't have -- we didn't really have a point of contact. We didn't expect to ever get any data, and then we did in

fact find companies that had operated NUMEC before -- you know, and clo-- but something comes and (unintelligible) company that operated beforehand and sold it to the company that closed it, and this data actually came from that company, not the one the closed it but the one that operated it before. They were very forthcoming and (unintelligible) through their records and providing what they could. This happened to be contained in medical records, which they did have some medical record information. They didn't have the exposure records but this was in the medical record.

MS. BRACKETT: We actually have a lot of bioassay data for NUMEC now, there's some mas--

MR. HINNEFELD: Now we do, because the -- the company --

MS. BRACKETT: -- massive data entry (unintelligible).

MR. HINNEFELD: -- the company that closed it, we finally got them to provide the information on the claimants. They did have quite a lot of bioassay information.

MS. MUNN: So this is another one of those

where there's no action unless --

MR. HINNEFELD: Unless DOL --

MS. MUNN: -- unless DOL --

MR. HINNEFELD: -- asks us to do something.

MS. MUNN: -- asks you.

MR. HINNEFELD: Yep.

MR. GRIFFON: Right. I think we're okay to go to 89.

DR. MAURO: That's it for the AWEs, I believe, and so we're going to pass the baton over to you and Kathy.

MR. GRIFFON: Wake up, Kathy.

MS. BEHLING: Right here.

MR. HINNEFELD: Okay, 89 is a Savannah River case. Do you want to do a 30-second rundown, Kathy, like John does, or you want to --

MS. BEHLING: No, I'll skip that.

MR. HINNEFELD: Okay.

MS. BEHLING: We've discussed a lot of these -- as Mark has indicated, we've discussed a lot of these findings before, so let's just dive right in.

MR. HINNEFELD: Okay, 89.1 is the -- the fact that the Savannah River -- Savannah River case used the tool for a while utilized the entire

range of all geometries in the DCF as opposed to just the AP. And as we've stated before, any case that was done like that will be subject to the Program Evaluation Report. And I believe 89.2 is the same, because the missed dose also I believe utilized that broad range -- well, this actually -- with Monte Carlo together, I think you got one number each year that was a combination of the missed and the measured, but it either can-- but it used that full range triangular so it would be part of what's reworked.

MS. BEHLING: Stu, can I ask a question on 89.1, in your response you indicate that the DCFs or distribution parameters complied with the guidance of the time, and I was just curious what guidance that was. Because I guess even when I go back to the implementation guide, I don't ever see where it indicates that you should use a min and a max for the -- for all exposure geometries. I -- even though there's an example in the implementation guide that talks about if you have AP geometry you only use your min and your max for that AP geometry, as opposed to looking at the entire

row and -- and looking at all geometries. So I was just curious as to what guidance they were following back at that time.

MR. HINNEFELD: Well, the implementation guide -- you know, that is one example it gives, but it also describes that -- situations where you may combine geometries, and in which case you would do a particular combination of one plus -- of two geometries or maybe more. And in this case there was -- I don't think there was any particular guidance that specifically directed people to, in certain situations, use a combination of all geometries, min and max of all the geometries. But it was essentially a judgment with -- that was made in the construction of the tool, the SRS tool at the time, that people, you know, could be exposed partly AP, partly rotational, partly isotropic, however. They'd be -- you know, working in the plant, there'd be a variety of geometries. Why not just apply the full range of DCF into the tool and --

MS. BEHLING: Okay.

MR. HINNEFELD: -- and essentially the -- the finding and the resolution of the finding that,

based on how some of the DCFs were generated, we really only have confidence in AP or we want to use AP for doses that were measured by a worn dosimeter -- dosimeter worn by a person, based -- you know, that finding and resolution came after this -- the building of that original Savannah River Site tool --

MS. BEHLING: Right.

MR. HINNEFELD: -- so that's what's meant by that.

MS. BEHLING: And I -- I did recognize that -- yeah, O-- OTIB-12 does correct this.

MR. HINNEFELD: Right.

MR. GRIFFON: Okay.

MR. HINNEFELD: And then 89.2 is the same issue as applied to missed.

Okay, 89.3 has a couple of components. One is that doses less than LOD over two were not counted as -- in the missed dose component but rather were counted just as the measured value. That direction, again, has occurred later -- you know, that resolution and that question occurred after this (unintelligible) was done. And the other had to do with what value to use for -- what was the LOD at Savannah River for

various years. And so we have identified a document here that identifies what -- you know, our -- why we concluded the LOD was a particular thing. It's not -- you know, a particular value. It's not clear to me that the site profile has actually been revised to reflect that. So I'm trying to establish with ORAU if -- if in fact we have values for -- that we have confidence in that are different from the site profile values for LOD, why aren't we revi-- you know, why haven't we revised the LOD or should we get a revision that would be -- to incorporate those values into the site profile, rather than just rely on some other document and you still have the site profile with different values than the ones we intend to use. So -- I mean in terms of product, I guess we could provide a more clear delineation of why our LOD values were different from what SC&A expected to be used, and we could also provide status of a revision to the site profile that incorporates why -- you know, what we believe to be the better value.

MS. BEHLING: I think that would be

appropriate, because I guess the other thing that I read into your response is it looks as if you were indicating that Proc. 6 was used for -- unless I'm misunderstanding this -- for the missed dose. And here again, I guess when I look at these various documents, I sort of assign a hierarchy of documents also and assume that the site profile, when it is available, should be used. And in this particular case, the site profile was available, and I also have a note here that I wasn't sure why the site profile wasn't changed if there was some other document, as you just mentioned, that -- that disputes the -- the LOD values that are identified in the site profile.

MR. HINNEFELD: Yeah. It may not hurt for us to describe, just so it's clear to everyone, if there is in fact a hierarchy in relationships like that. That may be helpful for all of us, I think --

MS. BEHLING: And I believe --

MR. HINNEFELD: -- (unintelligible) that as part -- did you hear me?

MS. BEHLING: Yes, I did. Just excuse me for one second. I believe also, when I went into

the workbook on this particular case, it does identified, under each of the annual tabs, what the LOD value is that's supposed to be used. And I believe I was -- that's where I looked to see if they used -- if they counted missed dose as LOD -- values -- the recorded values of less than LOD over two. So it's also in -- in the workbooks, so any changes would obviously have to be incorporated into the workbooks.

MR. HINNEFELD: Okay.

MR. GRIFFON: To go back to your hierarchy of guidance (unintelligible), is that something that's sometimes in these -- these DR guidelines or DR notes?

MR. HINNEFELD: Well, I think rather than speak to that myself, I think we should -- I should go -- make it a part of the written --

MR. GRIFFON: I agree.

MR. HINNEFELD: -- product and -- and sort of describe the -- the var-- you know, what -- the authority levels of the various instruction things that are provided, rather than say something here that may turn out to be false.

MR. GRIFFON: Right.

MR. HINNEFELD: Okay, 89.4 -- 89.4 is for

neutrons, the -- the AP geometry finding. Is that correct, Kathy?

MS. BEHLING: That's correct, it's the same as I guess 89.1.

MR. HINNEFELD: Okay.

MS. BEHLING: DCFs.

MR. HINNEFELD: Okay, 89.5 -- well, I probably ought to look at the finding. I'm trying to deduce them from the summary here. (Unintelligible) harder than others.

MS. BEHLING: Yeah, and I looked at this response, also, and I wrote a note to myself that I'm going to have to go back and reassess since I didn't have the time to go into this level of detail. But again here I take notice that you've employed -- and I believe it's actually OCAS-TIB-7 -- I believe that first paragraph should say seven as opposed to six -- and site-specific guidance for the Savannah River site. I didn't -- I -- I did look at that today and I do have to -- to re-evaluate this because we were -- we were asking was -- did the -- should they have assigned more missed dose than was assigned. And I guess, again -- not to -- to go back to this, but the

dose reconstruction report did not reference this OTIB-7 -- or this TIB-7, and it's not always one that I quickly go back to. I again use the site profile. But we were questioning a couple of things here. Also the fact that I guess the 200F area was used for -- for various time periods and, based on the records, it didn't really look like he was at that 200F area, and so had he been there, I -- I'm not sure I would have indicated that that neutron was a possibility, but I think the records indicated something different, so I'm going to have to look at this one a little bit closer, also.

MR. HINNEFELD: Okay, 89.6 is inappropriate organ dose uncertainty assigned for onsite ambient dose based on procedural guidance. Well, my reading -- let's see, this is -- has to do with the instructions in the site profile that lognormal distribution should be applied to the values -- the particular set of values, table of values, with a GSD of 1.3. And the dose in the dose reconstruction for ambient was not I believe lognormally distri-- distributed, or at least wasn't lognormally distributed with

a GSD of 1.3. When we -- you know, my reading of the procedure of the -- of the site profile is that lognormally distribution is applied with a GSD of 1.3, the relevant organ dose conversion factor is applied on an isotropic -- isotropic exposure geometry and a photon energy of 30 to 250. So you start with a radiation value that is lognormally distributed, and then you apply the triangular DCF value to that lognormally distributed radiation value, and so the outcome is what the outcome is. There -- you Monte Carlo that, and then the resulting distribution is fit and you choose the best fit of the available distributions for that. So in -- in my reading of the -- of the site profile -- and at least Scott's nodding at me -- it would seem that the -- the dose reconstruction was done in accordance with the directions. It's that the lognormal distribution is -- is -- is to be applied to radiation measurement, but to get to the dose value you still have to apply the DCF as a triangular distribution.

MS. BEHLING: I agree. When -- when you pointed this out and I read through it, I expected to see in the IREP input sheet the

values lognormally distributed. I didn't realize that they were running a Monte Carlo on the DCFs in this particular case. I think this is one of the first cases that I'd seen this. Typically they will just take the value out of the table that exists in the Savannah River site profile and apply the -- use that value, applying the 1.3, along with the DC-- with the central DCF value as opposed to running the Monte Carlo. And I believe now even the workbooks have -- have the Monte Carlo runs incorporated into them. And as you indicated, once they apply that Monte Carlo, it often results in a normal distribution and -- and so I agree and I understand now.

MR. HINNEFELD: Okay.

MS. MUNN: So SC&A accepts NIOSH response.

MS. BEHLING: Yes.

MR. HINNEFELD: 89.7 is about the use of the isotropic exposure geometry, and we talked about that earlier on, about ambient doses and the use of isotropic, and we believe that isotropic is the appropriate geometry for an ambient dose that is not measured with a badge on a person's body but it's measured in a free-

hanging badge or maybe (unintelligible), so we've talked about that already.

MS. BEHLING: Yes, and I believe that we -- we do concede that issue, yes.

MR. GRIFFON: 89.7 that was?

MR. HINNEFELD: That was 89.7. 89.8 is -- addresses -- let's see, failed to properly account for all internal dose from fission products, which is on our additional products list from the fourth round. So our response there should also address the issue associated with this finding. Okay?

MS. BEHLING: Yes.

MR. HINNEFELD: Okay, case number 90 is also a Savannah River case.

MS. MUNN: So we're okay on -- on .8 as well?

MR. HINNEFELD: Well, on -- on .8 --

MR. GRIFFON: 'Cause you (unintelligible) --

MR. HINNEFELD: -- we know -- we know what product on fission product in terms of dosimetry, and so it will be addressed by that product that we've already promised as part of -- of group four, or the fourth set.

MS. MUNN: Right.

MR. HINNEFELD: Okay, 90.1 is, again, a

Savannah River case. I believe it has the same -- the same findings that 89 had, as long as we didn't over look something.

MS. BEHLING: No, it does. Those are a repeat of the 89 findings.

MR. HINNEFELD: And so, to the extent that we owe something, we owe it here.

MR. GRIFFON: Right.

MR. HINNEFELD: Or it will address this, as well.

MR. GRIFFON: And the other ones are closed out. Right? Right. Okay.

MR. HINNEFELD: 91 is a Savannah River case. Okay --

MR. GRIFFON: 91's also Savannah River?

MR. HINNEFELD: Yes.

MS. BEHLING: It is.

MR. HINNEFELD: Yes, it is. 91, from our reading, findings one through four are similar to case 89 findings, and then as we get to finding five... Finding 91.5 questions whether we should have considered assigning missed neutron dose on this claim. And again I'm having trouble reconstructing the findings by reading the summary. When you read enough of

them, it gets a little (unintelligible).

MS. BEHLING: I think this is similar to the previous one, also. And again, here you're referencing this TIB-7 --

MR. HINNEFELD: That's the one you said you wanted to take additional (unintelligible) --

MS. BEHLING: Yes, and I don't mind -- maybe I can look at this one, also.

MR. HINNEFELD: Okay.

DR. MAURO: So let me understand that TIB-7 addresses issues related to work location and where neutron may be an issue and where it may not be an issue?

MR. HINNEFELD: More so occupation than work location.

DR. MAURO: Oh, okay.

MR. HINNEFELD: Yeah.

DR. MAURO: And that's specific to Savannah River?

MR. HINNEFELD: Yes.

MS. BEHLING: It's specific to Savannah River, and it also gives some, I think, interpretation of the records, how you're supposed to interpret the records for various years.

MR. HINNEFELD: 91.6 has to do with not being

able to reproduce the ambient -- on-site ambient dose.

MS. BEHLING: That's the one that we agree with --

MR. HINNEFELD: Yeah.

MS. BEHLING: -- like I said, I didn't realize that you were actually using a Monte Carlo -- I -- it looked that that's what you were doing, but I -- I wanted some confirmation on that.

MR. HINNEFELD: Okay.

MR. GRIFFON: Right.

MR. HINNEFELD: 91.7 is, again, the use of the isotropic exposure geometry for ambient.

MS. BEHLING: Yes.

MR. GRIFFON: Same as 89.

MR. HINNEFELD: Same as earlier.

MR. GRIFFON: Okay.

MR. HINNEFELD: Okay, 91.8 is failed to properly missed tritium dose based on cite-- cited guidance. And cited guidance, section 4.5.4 of the SRS site profile, isn't there anymore. Apparently this was a version that went back quite a ways having included that section. The site profile -- that section in the site profile now essentially ends with the

overestimating approach. You know, it's 4.5.2 or something like that.

MS. BEHLING: I guess, however, for this particular case -- this case was worked under the Rev. 1 of the Savannah River site profile, which was in place back in '03 -- 2003 -- and that section did exist and that's where I was confused. And I'm -- I'm not even necessarily challenging the dose. I was -- I believe what I was con-- there were two guide-- two -- two separate guidance documents and the -- the -- like I say, the Savannah River site profile is the one I thought should be used. And if you use that, I believe that should have been entered as like a triangular distribution and it was entered as a lognormal distribution, and so then I thought well, maybe they used different guidance. So I went to a different guidance document where it did specify to use a lognormal distribution, and if I would have followed that guidance I would not have come up with the 71 millirem. And so it was just some confusion there as to which guidance applied. But in -- in reality, this section 4.5.4 was in place at the time this dose reconstruction was

done under the Savannah River site Rev. 1.

MR. HINNEFELD: Okay. So...

MS. BEHLING: So I believe -- like I said, I'm not necessarily challenging this dose. I was just I guess challenging how it was entered into IREP as what distribution it should be entered as.

MR. HINNEFELD: It -- it might be that the product we've talked about earlier about hierarchy or potential hierarchy of the various --

MS. BEHLING: Yes.

MR. HINNEFELD: -- documents might be helpful and maybe taking another look at what -- what did we follow when we did this kind of approach and it would be a part of that, that discussion of hierarchy of different types of documents.

MS. BEHLING: Yes.

MR. HINNEFELD: Okay. Okay, 92 -- oh, I've finished 91. I just want to catch my breath when I finish one, you know?

MS. MUNN: (Unintelligible)

MS. BEHLING: 92 is also Savannah River Site.

MR. HINNEFELD: Okay. Okay, 91 -- 92.1 I believe is a finding we talked about earlier,

has to do with the treatment of LO-- recorded values less than LOD over two, isn't it?

MS. BEHLING: Yes.

MR. HINNEFELD: And so we will take a look at the impact of you treating those LOD over two cases as part of the missed dose as opposed to part of the recorded dose.

MS. BEHLING: Right.

MR. HINNEFELD: Yeah, something --

MS. BEHLING: And there again, you do cite that that PROC-6 was used here and I'm not sure why PROC-6 would take precedent over the Savannah River site profile.

MR. HINNEFELD: Okay.

MR. GRIFFON: So at the end of your response on 92 1, that last paragraph, Stu...

MR. HINNEFELD: Well, this change is relatively small. I mean you -- what you're going to do is you're going to take -- for a certain number of badge readings you're going to take a very small measured dose and take that to zero, and then you're going to throw in a missed dose that is a lognormal distribution for the mean, slightly higher than what you just took out and it -- you know, a 90-- a 95th percentile it's

twice that. So it's a -- it's a fairly modest -- first of all, the dose number itself will be fairly modest because, you know, the LODs are pretty small. And the change is -- is even -- you know, may -- is quite modest, as well. But then you do have the additional -- the uncertainty aspect thrown into it, and I think I wrote that because the POC on this case was relatively close to 50 percent, so rather than just say -- if it weren't particularly close you might say this change will be very small and so we won't bother about it; we just know from now on we -- we do it correctly and we'd count those cases, those LOD over twos, in the missed dose column -- or less than LOD over two as a missed dose. But in this case, because the POC is close to 50 percent, we don't want to just say well, the effect will be small and we're not going to worry about it, so we will -- we will reconsider.

MR. GRIFFON: I was just going to suggest maybe to rewor-- we -- we can say OCAS will --

MR. HINNEFELD: We ought to (unintelligible) --

MR. GRIFFON: -- instead of re-evaluate this case, I'd say -- I'd say OCAS will re-evaluate

the impact of this finding --

MR. HINNEFELD: Okay.

MR. GRIFFON: -- on the case.

MR. HINNEFELD: Okay.

MR. GRIFFON: Just so we're not --

MR. HINNEFELD: We can just take out --

MR. GRIFFON: We're not suggesting that you're re-evaluating the entire case. We're saying you're re-evaluating the impact of this finding --

MR. HINNEFELD: The impact of this finding.

MR. GRIFFON: -- on the case.

MR. HINNEFELD: Okay.

MR. GRIFFON: Just so we don't (unintelligible).

MR. ELLIOTT: I presume that implies you want a report. You want to hear back whether there was...

MS. BEHLING: I would assume so, just --

MR. GRIFFON: Yeah, I mean this is Stu's (unintelligible) --

MR. HINNEFELD: I think it's part of the resolution (unintelligible) --

MR. GRIFFON: -- response, so yeah. Yeah, yeah.

MS. BEHLING: And there are several other possibly or potentially sig-- significant findings in this case.

MR. HINNEFELD: Okay, 92.2, reviewer questions whether DR properly accounted for all missed neutron doses. Again, we've -- this I think may follow that OTIB-7 look that you wanted to take, Kathy, because it was selection --

MS. BEHLING: Yeah, and I guess the other question I have on this particular case -- and maybe you can clarify something here for me. When I look at the bioassay records on this case, I see under location that the individual worked, the reason that he provided the bioassay was because of location KPC, and when I read that I say -- I assume that those are reactors. And so that's also why I stated that it seemed like there might be some additional missed dose here for certain years where there were bioassays where the location was K, P and C. Am I misinterpreting that location?

MR. HINNEFELD: Well, K and P are reactors. I don't recall right off-hand with C, but I'm pretty confident that K and P location on a Savannah River card would indicate those --

those -- the K reactor or the P reactor.

MS. BEHLING: Okay.

MR. HINNEFELD: So that -- that's correct. I think OTIB-7 may describe a little bit about even at the reactor facilities, based upon the -- the -- the way the reactors were constructed and operated. There are just certain types of job titles, even at the reactor facilities, where neutron exposure was particularly likely. Not everybody who was assigned to the -- was that 100? Was that where the reactors were? Not everybody assigned to the reactors at Savannah River necessarily had a potential -- much potential for neutron exposure. And so I think OTIB-7 gets into that, as well.

MS. BEHLING: Okay.

MR. HINNEFELD: Not OTIB-7 -- TIB-7.

MS. BEHLING: Okay, and I will look at that. But like I said, and particularly the bioassay records did indicate the reactors and so --

MR. HINNEFELD: Yeah.

MS. BEHLING: Okay. I guess, again, when we come back to cases of unknowns, we should give the benefit of the doubt to the claimant, as we all know.

MR. HINNEFELD: So -- okay, so --
MR. GRIFFON: So what's the -- go ahead.
MR. HINNEFELD: Well --
MR. GRIFFON: What's the action on this?
MR. HINNEFELD: I think the action -- the first action on this is -- you know, Kathy has said she wants to go back and look at TIB-7 and -- in terms of -- and what it says about who is potentially neutron-exposed and in what situations to see if that lends sup-- you know, lends support to our discussion or if it raises a different question. I think that was the first action. Isn't that right, Kathy?
MS. BEHLING: That's correct.
MR. GRIFFON: Okay.
DR. MAURO: I'd like to add, though, in terms of parsing job responsibilities, I -- one of the recurring themes when we meet with site experts is that it's one thing that a person has a job title and another thing exactly what they ended up really doing.
MR. HINNEFELD: Yeah.
DR. MAURO: So just -- you know, it's not something -- you know, we're going to be cautious in (unintelligible) --

MR. HINNEFELD: It may be a broad issue for discussion. I mean in terms of, you know, what -- what does TIB-7 -- does it -- you know, I'm not going to speak like I know exactly whether -- but it -- it sounds like it may be subject to --

DR. MAURO: That's --

MR. HINNEFELD: -- discussion.

DR. MAURO: Yeah, we hear that a lot --

MR. HINNEFELD: Yeah.

DR. MAURO: -- you know, from the -- the workers.

MR. HINNEFELD: Okay.

MS. MUNN: Well, we hear it at virtually every Board discussion, too. (Unintelligible) we've heard it about 44 times.

MR. HINNEFELD: Okay, 92.3 is the -- I believe that's the finding we talked about earlier?

MS. BEHLING: It is.

MR. HINNEFELD: Okay. And 92.4 is also a finding we talked about earlier.

MS. BEHLING: Right, and we concede both those two issues.

MR. HINNEFELD: Okay.

MR. GRIFFON: Okay.

MS. BEHLING: And again then, 92.5 is the fission product issue that you're going to provide --

MR. HINNEFELD: Right, there's already a --

UNIDENTIFIED: (Off microphone) A path forward?

MR. HINNEFELD: Yeah.

(Pause)

93, we're already to case number 93.

MR. GRIFFON: See how quickly (unintelligible), we're running through these.

MR. HINNEFELD: Oh, yeah, well --

MS. BEHLING: 'Cause there's a lot of repeats.

MR. HINNEFELD: There's a lot of reasons for that, yeah.

MR. GRIFFON: (Unintelligible) option.

MR. HINNEFELD: 93 is an FMPC, or Fernald, case.

MS. BEHLING: And again, I think this first issue has to do with the missed dose and your counting recorded dose for less than LOD values, same -- same thing.

MR. HINNEFELD: Okay -- now, yeah, the same thing. Now my difference here, though, was that this was an overestimating case. There are a lot of other -- the other dose components

were overestimated, so I'm proposing that we don't really need to go back and reconsider the impact of this small change. Because if in fact it were to move the dose up to 50 percent or thereabouts, we would have -- we would look at the other overestimating approaches and say well, we just can't overestimate to that effect and we'll -- we'll -- it'll be coming out -- and there essentially doesn't seem to be any chance for this finding to affect the outcome of this (unintelligible) --

MR. GRIFFON: So you don't dispute the point, you're just --

MR. HINNEFELD: Don't dispute the --

MR. GRIFFON: -- (unintelligible) affect the outcome.

MR. HINNEFELD: That it's not going to -- it's not going to have an effect. We don't dispute the point. We're doing -- you know, now we are doing dose reconstructions where the LOD over two -- less than LOD over two doses would be included in the missed dose, not in the measured doses, so we just don't see the value of going back and reconsidering this 'cause this won't -- this won't change it.

DR. MAURO: Is that type of clos-- is that closure and that's something that would be written up as sort of a final matrix? How do we -- in other words, in effect --

MR. GRIFFON: Yeah.

DR. MAURO: -- this -- in the final matrix?

MR. HINNEFELD: I would -- I would -- I would think that maybe --

MR. GRIFFON: It's closure to me.

DR. MAURO: That's what that would be, yeah. Okay.

MR. HINNEFELD: Yeah.

MS. MUNN: Small effect --

MR. GRIFFON: NIOSH -- NIOSH agrees; however, it would not impact the --

MR. HINNEFELD: Yeah, we've -- in fact, we've used that (unintelligible) --

MR. GRIFFON: We've used that language (unintelligible).

MS. BEHLING: Okay, yeah, this is overestimating, but the POC was over 47 percent here. How overestimating was this? Because I do see some cases that are marked as overestimating. However when I delve into them a little further, they're not -- they're not

quite as overestimating as we saw in the first three sets. And -- and maybe you're correct here. I'm just curious 'cause now when I look at this and I see we're looking at 47 percent POC, and there are other findings here -- maybe you're correct. I -- I shouldn't -- just something that caught my eye.

MR. HINNEFELD: Well, I mean if you want, I can summarize the various overestimating points. I -- I -- I can't do it right now, but we could do that.

MS. BEHLING: No, I don't think we need to do that. That's okay, I just -- just when I saw 47 percent, it just -- and I don't see that it was a hypothetical internal that as used. They used --

MR. HINNEFELD: That's what I looked at first and it doesn't seem to have been.

MS. BEHLING: It was -- it was a hypothetical?

MR. HINNEFELD: No, it does not seem --

MS. BEHLING: It was not, no.

MR. HINNEFELD: -- based on -- I don't have the reconstruction in front of me, but just based on your review of it, it doesn't seem that it was.

MS. BEHLING: No, and again -- now here your on-site ambient was very high --

MR. GRIFFON: (Unintelligible) Make sure it was an overestimat-- sorry, Kathy, go ahead.

MS. BEHLING: Oh, that's okay. Yeah, it is -- NIOSH did mark this as a maximizing case, but what I'm saying is as I'm looking down my Table 1 in our audit, the only thing that stands out at me, as I said, is the internal dose was not a hypothetical internal. It looks like they did maybe either use OTIB-18 or they used IMBA, I'd have to look at that. And I know that Fernald does have high ambient because the highest dose in here is the ambient of 21 rem. But I just don't know if I'm too quick to say that if we had some significant findings, we wouldn't want to look at this a little closer.

MR. HINNEFELD: Well, I mean the -- the statement was made that we're not going to look at it further was bas-- related to the missed dose, LOD over two not being included in missed dose --

MS. BEHLING: Okay.

MR. HINNEFELD: -- which we believe is a small --

MS. BEHLING: That is small.
MR. HINNEFELD: -- small adjustment.
MR. GRIFFON: Yeah.
MS. BEHLING: Okay. All right, never mind.
DR. MAURO: Kathy, I have a question. When these are reviewed and you find that OTIB-18 -- the OTIB-18/33 was used, is that brought out, because I know that is one of the concerns that -- from a -- I guess in the sixth set was something very important that's going to be aired when we get to the procedure reviews. So I guess we're not -- all I'm saying here is that in any one of the cases that we're looking at, if -- if that case did rely on OTIB-18/33, I think that's an important thing to make note of because that's going to be something that's going to be revisited during the procedure review.
MS. BEHLING: Yes, and I did mark that on the sixth set, but I did not do that 'cause we're just really starting to see the use of OTIB-18 -- we're seeing that much more. And now -- in fact, as I'm going through this particular case, it looks like they did run IMBA here, so OTIB-18 was not used, but I did not make

mention of that in any of the fifth set. That was sort of one of those issues that we identified during the sixth set. But I did go through all of the sixth set and make mention that we did take issue with this OTIB-18.

MR. HINNEFELD: Okay. Yeah, here's -- here's the -- Kathy, I'm afraid you won't have the benefit of this 'cause Scott just pulled it up on his laptop computer, but --

MS. BEHLING: Okay.

MR. HINNEFELD: -- he ha-- we have, and this will be part of what we provide. This is the -- we have the IMBA fit that was utilized to generate the input for this dose reconstruction, and --

MS. BEHLING: Okay.

MR. HINNEFELD: -- and so it shows -- yeah --

MS. BEHLING: I remember --

MR. HINNEFELD: -- you don't have this --

MS. BEHLING: I remember, I remember now. You're right. You're right.

MR. HINNEFELD: It has an excretion pattern that --

MS. BEHLING: Yes.

MR. HINNEFELD: -- lies above -- looks like

every bioassay pattern.

MS. BEHLING: I remember that. Now I clearly remember, yes, bec-- because I ran IMBA and I couldn't understand how -- how you got these values. All right. Okay, never mind. Yes, I agree with that.

MR. HINNEFELD: Okay.

MS. BEHLING: I guess on -- if we can move on to this second finding, this had to do with the occupational medical dose, and I have a question here. I guess your response to this was that there were a lot of -- there were a lot of X-rays in this man's file that were marked as DISP, not routine. Number one, what is -- what is DISP?

MR. HINNEFELD: Probably means dispensary, probably stands for dispensary.

MS. BEHLING: Okay, dispensary, that's what I thought. And I -- I guess -- and there were also five lumbar spine radiographs, and I've got to go back and look to see if they were marked as routine or how they were marked. If an individual is injured at his job and he is told you cannot come back to work until we -- we're sure that you -- that -- that this has

healed or that -- that you're okay, and he needs to have let's say a lumbar spine radiograph because of that, that does not get included in the dose reconstruction. Is that correct or --

MR. HINNEFELD: That -- that --

MS. BEHLING: -- how does that work?

MR. HINNEFELD: That's correct. The thought process behind the medical exposures that are included are that these were exposures or X-rays where there was no medical indication for the X-ray but they were part of a routine screening program that very frequently the DOE sites would require of their workers. And since it was required of the worker without medical indication to -- to do that, it was essentially considered a condition of employment. Someone who's injured on the job, whether they be at a DOE site or any site, is subject to those kinds of medically-indicated X-rays. And so based on that, that was -- that's how we've selected those screening -- routine screening X-rays as being in, but medically-indicated X-rays as not being in.

MS. BEHLING: Okay. Hans just picked up. Do

you want to say something? Because he -- he did this case. See what happens when I turn anything over to him? No.

MR. HINNEFELD: Meetings get longer.

DR. BEHLING: Stu, I guess it's been a long time since I looked at it. Are those lumbar spine associated with an injury that he sustained during his working days or was this part of an employment requirement as are the PR -- PA chest X-rays? I guess I'm -- I don't recall.

MR. HINNEFELD: My -- my understanding is these were medically indicated, that these were probably as a result of a -- of an injury of some sort or -- or back or something like that, so --

DR. BEHLING: Can that be -- can that be interpreted from the -- the documentation or is this a -- is this a subjective interpretation on -- on anyone's part? I don't have the records in front of me to -- to -- to -- to indicate one way or the other so I'm basically asking. But if I recall, looking at it, it was not clear as to whether the lumbar spine radiographs were the result of -- of an injury

sustained during his working there or whether or not those were part of the conventional requirements for people who are engaged in heavy lifting.

MR. HINNEFELD: I think -- I'd have to go look. I mean I can't speak knowledgeably about it. I believe they were -- there was an indication on those records of those X-rays that these were in fact medically-indicated X-rays. So I -- but I'd have to go back and look 'cause I don't -- I can't say with -- you know, for sure. The -- I think that Fernald was not one of the sites that did lumbar spine as a screening for employment. There were some sites that did, but I don't believe Fernald was one of those.

DR. BEHLING: Okay. I -- I do recall that the -- the doses that would have been assigned, had they been part of a re-- employment requirement, would have been very substantial, several rem.

MR. HINNEFELD: Okay.

MS. BEHLING: Although I guess the remain-- the remainder of your response here indicates that in calculating that dose we did use OTIB-6, and actually we should have used the FMPC site

profile, which -- based on the FMPC site profile -- the val-- the doses would have been quite a bit less than what is specified in the OTIB-6.

DR. BEHLING: Well, you're just mentioning something, Kathy, that suggests that they were then used as an occupational screening requirement if the -- the site profile for FMPC identifies this as one of the medical -- medical exposures.

MR. HINNEFELD: Our -- our response says that the Procedure 61 would specify -- it specifies medical exposures and what it says -- let's see --

MS. BEHLING: That's right, they're saying if --

MR. HINNEFELD: -- it says that the -- the RFP -- the Rocky Flats TBD would be where you could see -- where you can find lumbar spine AP and lateral doses.

MS. BEHLING: Right. We -- we -- we put an example in our audit, and they were just commenting that, based on that example, we used an incorrect --

DR. BEHLING: Yeah, yeah, yeah.

MS. BEHLING: Okay. See what happens if I don't watch over him all the time?
DR. BEHLING: I'm being judged unfairly here.
MS. BEHLING: I'm sorry. Okay, so --
MR. GRIFFON: Separate rooms now.
DR. BEHLING: You don't know what's going on here behind the scenes.
MS. BEHLING: Okay.
MR. GRIFFON: We're going to have to cut off the line soon.
MS. BEHLING: Okay, on --
MR. GRIFFON: Hey, one question on this, without saying the job title, do we have any indication that this person might have been engaged in a job requiring heavy lifting -- don't -- I don't want to hear the job title 'cause I think we said --
MS. BEHLING: Okay. I'm not sure, can -- can we look at this finding again? Can I reassess this again?
MR. SIEBERT: Just to let you know, I just looked it up real quick and at least some of the lumbar spines are marked as DISP, as well as the chest, so the con-- the consistent thought process would -- would be there.

MS. BEHLING: Okay. And then I guess quite hon--
MR. ELLIOTT: That they were job-required?
MR. SIEBERT: That they were not.
MS. BEHLING: That they were not.
MR. ELLIOTT: Okay.
MR. SIEBERT: It was not (unintelligible) --
MR. GRIFFON: But as far as the job title, do you have --
MR. HINNEFELD: Job title would lead me to believe that he would have been involved in -- in heavy labor. It -- it's -- without getting too far into it, it's maintenance/craft, so chances are he was involved in some -- at least occasionally on relatively heavy labor. Okay --
MS. MUNN: So the action then is?
MR. HINNEFELD: Well --
MR. GRIFFON: Do we need to --
MR. HINNEFELD: -- I'm -- we're going to go back and look at -- at the dis-- at the records of the X-rays and see if we are -- have really confidence in -- and maybe put together any other indication why we feel confident that the lumbar spines were not routine screening --

MR. GRIFFON: I mean I agree --
MR. HINNEFELD: -- (unintelligible).
MR. GRIFFON: -- with your rationale as long as they -- they didn't do a screening program at Fernald. If there was a screening, I -- you know, (unintelligible) concerns, but otherwise I think it's appropriate what you did. I think we need to determine that, though.
MR. HINNEFELD: Yeah. Okay, that finishes 93, too, or -- yeah, 93.
Okay, 94 is also a Fernald case. 94.1 questions whether -- complete monitoring records from the -- from the '50s. Person started working at the site before their external dosimetry record starts, and so the -- the issue or the finding was are we sure that the person didn't in fact have some exposure prior to the -- the badging started. Speaking from what we've seen in the records from this site, it seems like we -- we have pretty complete records of -- of the badge reads. We have many people who were monitored regularly, even weekly in the -- in the early years at this site, and so if -- since this person doesn't have that record, it's likely that they

were not in fact badged until their monitoring record starts, and therefore would have -- and had little potential for exposure. Again --

MS. BEHLING: I guess it --

MR. GRIFFON: Go ahead, Kathy.

MS. BEHLING: Okay. I guess in this particular case, however, there was -- there was urinalysis records back from -- in '55, 57, 58, also some chest X-rays back then. I guess that's what made us wonder why he didn't have external monitoring records for back in the '50s.

MR. HINNEFELD: Yeah, the -- the bioassay records were like terminations, and by and large they were annuals, which occurred at the annual physical. And I believe everybody got annual physicals at that time, which -- you know, at that time would have included the X-rays.

MS. BEHLING: Okay.

MR. HINNEFELD: The code on the bioassay record tells what kind of bioassay it is. Now these particular -- you know, some of the earliest bioassay records in this case, as I recall, were in the medical record, on a medical record

card, so they don't necessarily carry that code that later bioassay records carried, but they looked like -- there was a short period of employment. There was like a hire and a termination bioassay sample there, and in general -- I think a couple of them were marked A, there was an A, which I think might mean annual, meaning it was an annual sample.

MS. BEHLING: Okay. And in fact I'm looking back at our checklist and this case was compensated, so it's -- it's a --

MR. HINNEFELD: Yeah.

MS. BEHLING: We can move on.

MR. GRIFFON: Just -- just one -- one -- one other thing on that, and that -- the fact that it's compensated may make this less of a concern, but the -- the question of did -- is this consistent with -- this is more of a site profile question actually and that it's compensated makes this probably irrelevant, but you -- you make this conclusion about, you know, that they didn't have data. Is that consistent with the monitoring policies before '60?

MR. HINNEFELD: Well --

MR. GRIFFON: In other words, was it --
MR. HINNEFELD: Because --
MR. GRIFFON: It does say the job title suggests that -- that --
MR. HINNEFELD: Because of --
MR. GRIFFON: It makes sense, but --
MR. HINNEFELD: Because of my conflict at this site --
MR. GRIFFON: Oh, yeah.
MR. HINNEFELD: -- information I know because of conflict at that site, I know that early on at that site there was a policy that women -- this is a woman -- women were not allowed to go in the production area and therefore were not badged.
MR. GRIFFON: Okay.
MR. HINNEFELD: Okay, 94 -- yeah, this is a compensable case. 94.2 is a finding about not being able to reproduce the on-site ambient dose, and in fact --
MR. GRIFFON: Can I ask -- just -- is there any action on that one? I just wanted --
MR. HINNEFELD: Oh, on 94.1?
MR. GRIFFON: Kathy, was there any follow-up action needed on that one?

MS. BEHLING: No, not --
MR. GRIFFON: On 94.1?
MS. BEHLING: -- for this particular case. However, you did bring up an issue that it is -- this is something that should be looked at in the site profile, and maybe there should be some follow-up, I'm not sure. Did I not understand your response -- Stu's response?
MR. GRIFFON: Well, we do have a site profile review underway.
MR. HINNEFELD: Yeah, there is one underway, and I believe -- what I tried -- I tried to give a reason for why this person did not have a monitoring record at the beginning of her employment.
MR. GRIFFON: Right.
MS. BEHLING: Okay. So -- okay, so it's not necessarily a site profile issue.
MR. HINNEFELD: I don't believe so, and -- and again, because of my conflict --
MS. BEHLING: Okay.
MR. HINNEFELD: -- and the knowledge of what's done when we get a record from Fernald --
MS. BEHLING: Okay, this --
MR. HINNEFELD: -- I'm pretty confident what --

we get each badge reading that was done there.

MS. BEHLING: Okay then, Mark, I would say no further action on that.

MR. HINNEFELD: Each -- each badge reading on an employee that was done there. No con-- if you have a contractor that worked at Fernald, I won't guarantee that what we get from Fernald is every badge worn by that contract-- by that subcontractor, construction subcontractor. Again, information from my conflict.

94.2 questions the ambient dose that we assigned to this case, saying that it might be too high based on this person's work location. And we felt -- we used the site average, and there's some areas where -- that are lower than the average. Our view is this site was relatively small. Other than not being able to go into the production area at certain times, people would generally move about the other areas of this site and that we didn't feel that -- we didn't feel comfortable saying a person could have only been exposed to the ambient in this one area when in fact we believe that a site-wide average is a better approximation of what they may have been exposed to during their

work (unintelligible).

DR. MAURO: And this is Fernald?

MR. HINNEFELD: This is Fernald.

DR. MAURO: To the extent that it's any value, I know that the -- one of the issues on the Fernald site profile review is the methodology used to reconst-- to represent outdoor exposures to, for example, emissions from the silos.

MR. HINNEFELD: Okay.

DR. MAURO: We -- we do -- I know we do have a -- several issues on the table that's undergoing review. Now if -- I don't know whether this plays into that or not. Looks like -- other words, some question came up of how the ambient dose was calculated. Answer is well, we think it's okay. However, right now there is an issue being aired on Fernald. I'm not quite sure how best to deal with that in this context.

MR. HINNEFELD: Well, this case was a compensable case --

DR. MAURO: Okay, so --

MR. HINNEFELD: -- so if something changes, we wouldn't try to go back and get this one.

DR. MAURO: Sure, gotcha, okay.
MR. GRIFFON: Yeah, I -- I don't think this necessarily refers to that same issue. It's on -- it's on the matrix --
DR. MAURO: It's on the matrix.
MR. GRIFFON: -- for Fernald anyway. Right?
DR. MAURO: Yes, it is, absolutely.
MR. GRIFFON: And I don't think thi-- this is really questioning -- given that this person was in one location, maybe they shouldn't have -- apply at all. Right?
MR. HINNEFELD: Maybe we shouldn't have used the site average --
MR. GRIFFON: You were more conservative than they -- that --
MR. HINNEFELD: Yeah, maybe shouldn't have used the site average, maybe should have used what was published for the ambient for that location.
MR. GRIFFON: So I don't think it's a follow-up site profile. I think it's a no -- no action.
MS. BEHLING: Right.
MR. GRIFFON: Let's close out as many as we can.
MS. MUNN: Let's do, please.

MR. HINNEFELD: Okay, that takes us to number 95, which is a Hanford case. 95.1 questions whether we accounted for all the missed neutron dose. Our response here -- our initial response kind of speaks to site practices and identification of, at least in some places, of a work location associated with this person that would indicate it was not a neutron exposure area.

MS. MUNN: (Unintelligible) unlikely.

MR. HINNEFELD: So it's a fairly -- I mean this -- this response was just provided, and I don't know, Kathy, did you want time to -- to look at this or --

MS. BEHLING: Yeah, I have not digested this one yet because we had a number of -- we had four or so reasons that we thought this individual may have been exposed to neutrons --

MR. HINNEFELD: Yeah.

MS. BEHLING: -- and I haven't had a chance to look at -- to assess all of your responses.

MR. HINNEFELD: I think the response tries to speak to those four.

MS. BEHLING: To each four, okay -- to each of the four. All right, if I could look at this

and get back to you.

MR. HINNEFELD: Okay.

MR. GRIFFON: 95.2 (unintelligible) response (unintelligible) ambient. Is that right?

MS. BEHLING: Yeah, this is the same issue with the Monte Carlo -- applying the Monte Carlo to the onsite ambient.

MR. HINNEFELD: Okay, so it's okay then?

MS. BEHLING: It's okay, yes.

MR. GRIFFON: Can we -- I'm just -- 95.2 is okay.

MS. BEHLING: Uh-huh.

MR. GRIFFON: Can we -- Ray's requested a --

MR. HINNEFELD: Yeah, yeah --

MR. GRIFFON: -- break here at this point.

MR. HINNEFELD: -- man, I could use one myself.

MR. ELLIOTT: We're going to take a -- oh, go ahead, Mark.

MR. GRIFFON: We're just going to mute you and we'll be back in ten minutes.

MS. BEHLING: Okay.

MR. GRIFFON: Right.

(Whereupon, a recess was taken from 2:28 p.m. to 2:40 p.m.)

MR. GRIFFON: Where are -- we're losing people

but that's all right. Okay.

MR. ELLIOTT: We're still with a quorum.

MR. GRIFFON: All right. Kathy and Hans? You're probably the only two with us, but are you back on? Kathy or Hans?

MS. MUNN: Anybody?

MS. BEHLING: I'm here.

MR. GRIFFON: We're ready to reconvene here. We're almost through the matrix, though. That's good.

MS. BEHLING: Okay. Now can I start out with a comment?

MR. GRIFFON: Sure.

MS. BEHLING: I have to clear Hans's name. During your break --

MR. ELLIOTT: You had a sidebar during the break.

MS. BEHLING: Yes. If we go back to finding 93.2 that we were discussing these lumbar spine radiographs at Fernald, we did go back and Hans's comment -- I -- I -- that he made and I misunderstood it, he indicated the fact that if the site profile actually has values for a lumbar spine, then it would indicate that they have a lumbar -- that they have a program for

screening. And we looked at the site profile and there is a statement in here that states that it was also noted in reviewing claimant files that lumbar spine X-rays were taken primarily for construction workers and laborers. So it -- it -- so we're going to have to reassess these lumbar spine cases.

MR. HINNEFELD: Okay, we -- I think we took an action to make sure that we were confident in our determinations. So we will provide --

MR. GRIFFON: So that is -- that is an action?

MR. HINNEFELD: Yeah.

MS. BEHLING: Okay. But I -- I wrongly accused him so I apologize.

MS. MUNN: So both NIOSH and SC&A are going to...

MR. HINNEFELD: Well, we -- certainly we will. We'll go back and assess our (unintelligible).

MS. MUNN: (Unintelligible) --

MR. GRIFFON: Yeah.

MS. MUNN: -- working for.

MR. GRIFFON: Okay, so now we're back up to 96.1. Right?

MS. BEHLING: Yes.

MR. GRIFFON: All right.

MS. BEHLING: And John, I -- is John still there?

DR. MAURO: Yes, I am.

MS. BEHLING: John Mauro? Okay. John, you can maybe help me out on this one a little bit. I looked closely -- I believe that you -- you worked on this case.

DR. MAURO: Which -- which -- which site is this?

MR. HINNEFELD: Portsmouth.

MS. BEHLING: Portsmouth.

DR. MAURO: Portsmouth?

MS. BEHLING: Portsmouth.

DR. MAURO: Okay.

MS. BEHLING: So you can look through this.

MR. HINNEFELD: Okay, 9--

MS. BEHLING: Go ahead.

MR. HINNEFELD: You want me to start again?

MS. BEHLING: Yes, please do.

MR. HINNEFELD: 96.1 is failure to properly convert recorded photon dose to organ dose. Let me make sure I read the finding here. Okay, the finding questions the use of the -- the photon -- or the exposure to organ dose, DCF value, as I read this. That the DCF that

was used is the one that related to AP 30 to 250 keV photons and that the -- and the DCF that's cited is the one that converts exposure to organ dose, when in fact the site's dosimetry records reports the dose in rem or dose -- well, implying that you could not -- if that were the measured value, then it would be a different DCF. It would be the dose equivalent or --

DR. MAURO: HP-10.

MR. HINNEFELD: -- HP-10 to organ dose DCF.

DR. MAURO: That was the concern.

MR. HINNEFELD: I guess our view was, even though it's convention for a number of sites to report those doses in rem, if it was measured with a film badge -- based on the use of the film badge and likely calibration operations at that time -- you should use the Roentgen or exposure to organ dose conversion, despite the fact that they would say in their records it was a rem because people -- people expect --

DR. MAURO: It was really a Roentgen.

MR. HINNEFELD: -- it was really a Roentgen as measured, and they called it a rem 'cause it was a convention -- a rem's a Roentgen when

you're working at the site --

DR. MAURO: Okay.

MR. HINNEFELD: -- and so people expected their doses to be in rem, and so that's why it's reported that way. That's why it's reported that way, but we believe -- see, being that it was measured with film, Roentgen is the appropriate DCF to use -- and it is higher. The Roentgen DCF is higher than the rem.

DR. MAURO: (Unintelligible)

MS. BEHLING: And I do agree with that.

DR. MAURO: Yeah.

MS. BEHLING: With NIOSH's response.

MR. HINNEFELD: Okay.

MR. GRIFFON: Okay.

MR. HINNEFELD: Okay, 96.2 as to do with inappropriate methods used for derived recorded skin dose.

MS. BEHLING: I guess in this particular case, if I can interject here, what we felt would be the correct method -- method for calculating the skin dose, at least based on the external implementation guide, is since the shallow dose in this case was reported, that you just take the shallow dose and that becomes your skin

dose and you do a DCF of one -- and that is in Appendix B of the implementation guide. The only thing that I see that -- now that I reassess this case, I believe we were incorrect in assuming that there should have been a calibration adjustment factor of 1.165 added to this. If you go into the site profile, which I did in preparation for this, it indicates that that 1.165 calibration factor should be -- adjustment factor should be applied to deep dose and not the shallow dose. So we were incorrect in assuming that the calibration adjustment factor should have been applied. However, we did question the method that was used for calculated skin dose. Ultimately NIOSH did arrive at a higher dose than we would have. We were just questioning their methods.

MR. HINNEFELD: Okay. I know you've just seen our response, but in -- in -- with relation to our response and what we've described here in response, does that answer the question or is there more information to be generated, or do you want to -- need time to look -- evaluate the response in terms of the finding or -- where are we at on that?

MS. BEHLING: Maybe I'll just look at this response again, because I'm just questioning is the -- is -- is this an approach that is typically used by NIOSH, which we do often see. And like I said, it is inappropriate based on the implementation guide and the fact that once you do have shallow dose reported, just use that dose rather than applying correc-- DCF values to the -- to the -- to the deep dose. Now Hans wants to pick up here because he feels strongly about this issue, too. It's just the method used for calculating your skin dose.

DR. BEHLING: Yeah, I -- I always, and I think we've repeatedly encountered this. I think in the implementation guide in Appendix B under the skin, there's usually -- there's a footnote there that says if you have a shallow dose, a seven milligram per centimeter square dose, use that and there's no need there for to convert an HP-10 dose into -- by means of a DCF into a skin dose. And -- and I think we've gone through that discussion any number of times. It's probably an insignificant difference, but it's just a protocol that I can't justify in doing, especially when we're talking about

efficiency measures, that would then force you to do all kinds of calculations when in fact all one has to do is look at the 7 milligram dose or shallow dose and say that's the skin dose. And -- and I don't recall exactly -- maybe Stu can enlighten me and -- and refresh my memory as to why one would not use that approach.

MR. HINNEFELD: Well, I don't remember if it's applicable to this case in general or not, but as -- as a general rule, for a -- for a skin dose, you would -- the reason that you would divide it into its beta and photon components, particularly if you're using a 30 to 250 keV photon, if that's the energy of the photon, is that the radiation effectiveness factor for that range of photons is higher than the radiation effectiveness factor for -- for beta particles. So that even though you have a shallow dose that's say 480-some millirem, that's 430 millirem comes from the deep or the photon dose and 60 millirem comes from a non-penetrating or beta dose, that if you just used that 490 and applied it as a beta dose, for instance, and the photon exposure was in the 30

to 250 range, the REF for your dose will be lower than it would be if you applied the -- if -- if you broke it into the various components. Conversely, if you used the shallow dose and applied -- called it 30 to 250 keV photons, you would use the higher REF for the whole portion as opposed to just using a higher REF for the photon portion and using the lower REF for the beta component. So there is -- there's a -- reasons why that shallow dose is -- is broken into the component doses -- I'm looking at Scott and he's not giving me too dirty of a look -- and that's why. I mean despite the fact that yeah, shallow dose is shallow dose, and I guess if you were -- if the -- if the photon dose were from photons greater than 250 keV, that -- that REF is in fact equivalent to the beta REF. So in that case it would in fact be -- as -- a meaningless exercise to divide it into those component doses and then put an R-- 'cause you could just put it in as one or the other and get the same outcome. So that's -- that's the reason why frequently a skin dose is broken into a shallow -- or a beta component and --

DR. BEHLING: Well, I -- I understand and -- and I guess if -- if that's the case, then maybe that footnote should be stricken in the implementation guide that suggests that if there is an available recorded shallow dose, a skin dose, for -- for the person to use that because it does become a conflict where you have to understand that there are now multiple options in which this skin dose can be calculated, break them apart or just simply using the shallow dose as it stands.

MR. HINNEFELD: Okay.

MS. MUNN: So there we need to change the footnote in the implementation guide.

MR. HINNEFELD: Right.

MS. MUNN: Is that what I'm hearing?

MR. HINNEFELD: That's what I hear.

MS. BEHLING: Uh-huh.

MR. GRIFFON: Kathy, did you still want time to review that or -- or --

MS. BEHLING: No. No, that -- that resolves it.

MR. GRIFFON: It's just -- okay, that'll resolve it. Good.

MR. HINNEFELD: Okay, that finishes 96.

MR. GRIFFON: Can I ask one question? At the bottom of 96 there's a mention of neutrons. What's that all about? Since doses from neutrons...

MS. BEHLING: I don't know.

MR. HINNEFELD: I don't know what that -- I don't know what I was thinking.

MR. GRIFFON: Yeah, I just didn't understand that at all. Did that get cut and pasted some- - inadvertently or...

MR. HINNEFELD: Oh, I think I know what it is, is -- is 96 a greater than -- greater than 50 percenter?

DR. MAURO: Oh, you didn't bother (unintelligible).

MS. BEHLING: It is greater than 50 percent.

MR. HINNEFELD: Okay. So if there is in fact a mistake here and our dose was higher than what it should have been, there's a component of the dose that was not included, so that since it was an underestimate we don't feel like it would be necessary (unintelligible) to go back and (unintelligible) compensated, we (unintelligible) go look at it anyway, we wouldn't necessarily pull it back.

MR. GRIFFON: All right.
MR. HINNEFELD: That's -- that's why I put that in there.
97 and 98 are my favorite numbers in this -- in the set because there are no findings.
MR. GRIFFON: Can you do those quickly?
MR. HINNEFELD: 97, in case anybody's interested, was Lawrence Livermore and 98 was the Elk River Reactor Site.
99 is Pantex. Okay, 99.1 is our favorite OTIB-8 finding. Correct?
MS. BEHLING: That's correct.
MR. HINNEFELD: Okay. We've addressed that several times. OTIB-8 has in fact been revised --
MR. GRIFFON: Could -- is that --
MR. HINNEFELD: -- since that time.
MR. GRIFFON: Yeah, OTIB-8's been revised. Did that result in any PER or -- or...
MR. HINNEFELD: Well, no, because this was a -- this was a clarity issue and it was consistently -- the -- it was consistently used higher, the dose was consistently higher --
MR. GRIFFON: That's right.
MR. HINNEFELD: -- than the -- what I believe

the correct reading of it should have been.

MS. BEHLING: That's correct.

MR. GRIFFON: (Unintelligible) a refresher on that. Okay.

MR. HINNEFELD: And 99.2 is that same category.

MS. BEHLING: That's right.

MR. GRIFFON: So no -- no further action on these?

MS. BEHLING: No.

MS. MUNN: (Unintelligible)

MS. BEHLING: In fact what I've been doing on our dose reconstruction reports is putting an asterisk in and identifying the fact that this is an issue that's being -- these are issues that have been resolved.

MR. GRIFFON: Resolved, right. Yeah.

MR. HINNEFELD: 99.3 is improper organ dose selected for estimating occupational medical dose. Yes, that's true. The dose reconstruction notes that it was an intentional overestimate. And granted, it's hard to say that it's more efficient to choose one rather than another. We have since instructed our contractor and adopted the approach that overestimates are -- should be used only when

it provides clear efficiency, not just because you can. (Unintelligible) the findings we've been through as well.

99.4 is the use of improper hypothetical intake model. Again, I believe this is -- yeah, goes to the colon was used rather than the actual target organ. That -- that's the same -- we've addressed that a number of times. That finishes 99.

100 is from Oak Ridge National Laboratory. Number -- findings number one and .2 are the OTIB-8 findings again, same -- like 99.1.

Finding 100.3 is the same improper selection of organ dose for occupational medical, the same issue that was raised in 99.3.

100.4, reviewer questions whether NIOSH properly addressed CATI-identified dose limit issue. And here we have a bit of an involved response. It has to do with the investigation -- site investigations that were done. And I guess I'm a little bit at a loss here on the specifics of this case, so I'm a little bit at a loss as to what exactly the CATI said and --

MS. BEHLING: Yeah, and I didn't get a chance to go back to the CATI report on this one,

either.

MR. GRIFFON: (Unintelligible) pocket dosimeters or...

MR. HINNEFELD: Well, NIOSH -- did NIOSH properly handle the issue related to potentially reaching a dose limit as described below. There are numerous dosimetry records that lack dates and dose results. Due to this lack of information on the data provided, SC&A also questions whether DOE has provided all the available dose data. In addition, there are records in the file indicating that meters were lost or not turned in. The doses -- meters in question mark or in paren-- quotations. The doses associated with these events were assessed as zero. However, no explanation for this assessment is included. Based on these questionable dosimetry records and identification of missing dosimeters, SC&A is recommending that NIOSH attempt to collect additional dosimetry data that may help to clarify the state-- claimant's statement.

MR. GRIFFON: There wa-- di...

MR. HINNEFELD: Well --

MR. GRIFFON: I mean is this an early time

frame for this employee?

MR. HINNEFELD: I think this is a pretty early one. Let's see --

MR. GRIFFON: 'Cause I know -- I know for sure in the early years there were a lot of questions about pocket dosimetry and the results at X-10 in the locked -- they were -- at least from interviews I did down there, there was a lot of accounts of wearing pocket dosimeters but not having a -- a badge on at the time and the pocket dosimetries were logged but they never became part of their permanent record (unintelligible) -- I know that allegation's been out there and this might be related.

MR. SHARFI: This person -- this person --

UNIDENTIFIED: (Unintelligible) coworker issue --

MR. GRIFFON: I don't know. It says meters, though. I don't know what meters means.

MS. MUNN: (Unintelligible) too, but --

MR. HINNEFELD: This person didn't start till 1975.

MS. MUNN: (Unintelligible) --

MR. GRIFFON: Oh, '75, no, that's -- that's

after that --

MR. HINNEFELD: I think meter -- meter, to me -- I think at Oak Ridge, meter was a colloquialism for the badge, for film badge or whatever badge you were wearing.

MS. MUNN: (Unintelligible) '70s?

MR. HINNEFELD: Yeah, good ol' boys down there. They -- as I understand it, the -- the instances of the -- the badge not returned or meter not returned or meter loss were instances that were investigated. As I understand the situation, there were investigation reports in the -- in the file from ORNL about how they arrived at suggested dose. And if in fact they -- they recommended a zero be put in places, it was probably due to whatever they considered in their investigation, which may have been previous and post months exposures or previous months' exposures and similar work -- you know, however people do dosimetry investigation. So I believe, though, that the missing or not returned issues were investigated. At the Oak Ridge sites as a general rule, if we have -- if we've sent them the right Social Security number, we generally get what they had. And

additional requests later on, especially if we get anything, we generally get a complete response. That's kind of --

MR. GRIFFON: Kathy --

MR. HINNEFELD: -- been our experience at --

MR. GRIFFON: Kathy, it sounds like you may have to look at this a little closer and see if there's -- come -- maybe come back with specifics if --

MS. BEHLING: Okay, I can do that.

MR. GRIFFON: -- if there is -- if there's times when they had these quote, unquote, lost meters and you can't -- can or cannot identify investigation reports in the -- in the file, maybe can -- you can come back with specifics on that.

MS. BEHLING: Okay, I'll do that.

MR. GRIFFON: Otherwise, it sounds like a reasonable response, but we should --

MS. BEHLING: I -- I think so, too.

MR. GRIFFON: -- take it -- take it to ground, yeah.

MR. HINNEFELD: Yeah.

MR. GRIFFON: Yeah.

MS. BEHLING: No, I agree with that. And like

Stu indicated, the individual did work -- start working in the '70s and so -- but I -- but I'll look at this a little bit closer.

MR. GRIFFON: And that's the end of the matrix.

DR INSTRUCTIONS

We have one -- one more agenda item. I -- I don't think it'll be a -- I really just wanted to get a preliminary discussion on this and I don't know if, Mike or Wanda, if you have these things with you, but Stu did mail out some -- some examples of these -- I don't think -- calling them everything, dose -- dose -- DR instructions, DR guides. I think they -- they have various notes, depending on the site -- or various titles, depending on the site. So the -- I guess the -- the reason I -- I raise this as an issue for the subcommittee and for the Board is that I -- I found some of these on the O drive and -- when we were looking at Rocky Flats, actually, it really came to my attention that they were very instructive on -- on -- instead of trying to -- to guess what the dose reconstructioner (sic) thought process was, you actually sort of have this template there. It's not -- it's not completely prescriptive --

correct me if I'm wrong. It's not completely prescriptive, but it does give you a sense of if you have this, then you have these options; if you have this, then you have these options. And it -- in some cases it steps you through what TIBs or what -- and -- and it might even give sort of a sense of the hierarchy to -- to --

MR. HINNEFELD: Yeah, to be honest, I am not very familiar with them at all. Maybe --

MR. GRIFFON: Right.

MR. HINNEFELD: -- Scott might have some familiarity with them.

MS. MUNN: Well, when did you send those out?

MR. GRIFFON: Yeah, yeah, so I -- I just wondered if -- if these were used as part of the dose reconstruction, my sense would be that -- that -- and what -- from what I heard from Mutty Shafi (sic) at the Rocky meeting, and he was saying -- and I think Jim's saying, also, that these aren't procedures necessarily. These are -- these are updated on conference calls sometimes with the dose reconstructors and you might have several versions of them in -- you know, real-time corrections to these

things, and they're really used in-house. The on-- and I wouldn't suggest that we need to review them as procedures by the Advisory Board. But what I was thinking is -- is why -- why aren't they part -- it would be nice if they were part of the claimant file.

DR. MAURO: Absolutely.

MR. GRIFFON: That way there's none of this -- 'cause sometimes I think we run into these cases where we have sort of a gray line. I mean I even -- and this is nothing against any of the work we're doing here, but you know, sometimes we're -- we're looking at these and we're saying well, we think the dose reconstructioner (sic) might have been doing this or might -- you know, and -- and it seems consistent with the earlier protocols. Well, if we had this in there, I think we -- it might still not be a black and white -- it might not be a sharp line, but it's a sharper line, I think, to --

MS. MUNN: Yeah.

MR. GRIFFON: -- sort of evaluate the --

MR. ELLIOTT: It gives you a better understanding --

MR. GRIFFON: -- the cases.
MR. ELLIOTT: -- of the thought --
MR. GRIFFON: Yeah.
MR. ELLIOTT: -- process that the reconstructor used, but I've --
MR. GRIFFON: Well --
MR. ELLIOTT: -- already cautioned you that these came about in the -- that evolution and development relatively recently. The first and second set of claims that you guys reviewed probably didn't have any of those --
MR. GRIFFON: Right, that's fine.
MR. ELLIOTT: -- kind of guidelines or instructions. They probably dealt with the site profiles, Technical Basis Documents and whatever training occurred --
MR. GRIFFON: Yeah.
MR. ELLIOTT: -- to implement the use of those. So just keep those in mind that if you pick from the pool of claims --
MR. GRIFFON: Right, right, right.
MR. ELLIOTT: -- randomly, you may find some that --
MR. GRIFFON: Well, I gue-- I --
MR. ELLIOTT: But you're point's well taken.

MR. GRIFFON: I guess that.
MR. ELLIOTT: Maybe we should put that into the --
MR. GRIFFON: Yeah.
MR. ELLIOTT: -- to the -- to the file that you folks --
MR. GRIFFON: I guess --
MR. ELLIOTT: -- are reviewing and see how it goes.
MR. GRIFFON: I guess there were two questions I had, and one was -- one thing I think is a lot easier for us to offer as a recommendation for the -- for the full Board to -- to give to NIOSH, which would be to recommend that -- that for all cases going forward, that these things be added to the -- to the claim file.
The second one's a little more -- a little more labor, and may not be doable, and that would be to do it retro-- retroactively. And that would be probably complicated. I'm not sure --
MR. ELLIOTT: I would be a little reluctant to --
MR. GRIFFON: I'm not sure if you can do it, right.
MR. ELLIOTT: -- agree to take that on.

MR. GRIFFON: Right.
DR. MAURO: Well, this goes back to a while ago, one of the points we made was the road map --
MR. GRIFFON: Yeah.
DR. MAURO: -- whereby one of the first challenges we encountered was my god, we can't figure out -- and it was taking us a lot of time --
MR. GRIFFON: Right.
DR. MAURO: -- to figure it out.
MS. MUNN: (Unintelligible)
DR. MAURO: Yeah, and -- and to the extent to which your folks now -- of course the ones they're doing right now could get -- insert that road map, but --
MR. GRIFFON: Right.
DR. MAURO: -- with an eye toward oh, there's going to be people looking at this, who are going to try to reproduce the numbers.
MR. GRIFFON: Yeah.
DR. MAURO: Also the extent to which the cases are being assembled at this time, the next set of 32, for example, which will be coming down the pipeline. I don't know how difficult it

would be for someone to say okay, did we really tell the story or did we leave a lot to the imagination.

MR. HINNEFELD: Okay.

DR. MAURO: I know that -- I know that our folks -- I work with them all the time. Someone's saying my god, I've been working on this thing for three days, I can't figure out what they did. And -- and in fact, I could -- I posed this question to the Board, is there any problem with our people calling up your dose reconstructors and say listen, what did you do here?

MR. ELLIOTT: You need to go through us to do that.

DR. MAURO: Need to go through -- but I think that would -- that might be a fix. That might --

MR. ELLIOTT: I think we should look at this and get back to you on --

MR. GRIFFON: Yeah, yeah, I'm not --

MR. ELLIOTT: -- what -- what it's going to take --

MR. GRIFFON: -- asking for an answer today, but --

MR. ELLIOTT: -- what it's going to take for us to make sure that, as we go forward in the review of dose reconstructions that have been completed, we add that thing to it. Whether or not we need to -- we should look at also whether we -- it would make sense to -- any claim that gets completed from this point on, we should --

MR. GRIFFON: Right.

MR. ELLIOTT: -- include that in there, the --

MR. GRIFFON: That -- that recommendation --

MR. ELLIOTT: -- the analysis record. I don't know.

MR. GRIFFON: -- seems a lot easier, obviously, in the -- yeah.

MR. ELLIOTT: Let us look at that and we'll get back to you.

DR. MAURO: Early on --

MR. GRIFFON: Wanda, and then --

DR. MAURO: I'm sorry.

MS. MUNN: I just -- just wanted to make sure that I'm looking at the same thing I think you're talking about.

MR. GRIFFON: Yeah, yeah.

MS. MUNN: March 15 --

MR. GRIFFON: A zip file.
MS. MUNN: -- a zip drive -- a zip file. It started off with dose reconstruction notes (unintelligible) Mound and --
MR. GRIFFON: (Unintelligible)
MS. MUNN: -- then basic guidelines, Amchitka guidelines, FMPC dose reconstruction notes -- that's it?
MR. GRIFFON: That sounds like the one, yeah. Yeah, sorry.
MS. MUNN: That's all right, I just wanted to make sure I had that.
MR. ELLIOTT: Those are examples.
MR. GRIFFON: Examples, right.
MR. ELLIOTT: They're not to be considered --
MR. GRIFFON: Exhaustive.
MR. ELLIOTT: -- all-inclusive or exhaustive type of guidance or --
MR. HINNEFELD: I -- I don't know for sure.
MR. ELLIOTT: (Unintelligible)
MR. GRIFFON: No, no, they're not exhaustive. Okay? I didn't expect it to be. I wanted to examine it just to (unintelligible) --
MR. ELLIOTT: They're relevant to those --
MR. GRIFFON: Yeah.

MR. ELLIOTT: -- case situations.
MS. MUNN: Those specific cases, yeah.
MR. GRIFFON: Right.
MS. MUNN: That's what I had interpreted at the time I read them, that they were (unintelligible).
MR. GRIFFON: Yeah, so I think if -- if -- I -- I don't think we need to take the discussion much fur-- I just wanted people to understand what these things were, have a couple of examples to kind of look at and say oh, yeah, I see what -- you know, I see what these -- how these could help in the audit process. I mean I think it -- I think it would actually expedite some of our -- you know, our review process.
MR. ELLIOTT: I think it would minimize confusion.
MR. GRIFFON: Right, exactly. Exactly. So I'm not...
MR. HINNEFELD: Well, how about --
MR. GRIFFON: But to do it retroactively, I think, Larry, you're right. You need to examine that 'cause I -- I'm sure it would be difficult. I'm not even sure it's achievable.

You know, I -- I know Mutty said that they don't -- they don't, as a course of practice, keep revisions of these things. They just update them. So it might be really hard to figure out, for different time frames, which ones were used, you know. And I don't know that we need to go there, but --

MS. MUNN: Seems unlikely that we could do that.

MR. GRIFFON: But going forward, I think it would be nice to have them added, so -- so we'll hold off and maybe hear --

MR. HINNEFELD: So we're talking about going --

MR. GRIFFON: Can you give us somewhat of a report at the morning meeting in May -- May --

MR. ELLIOTT: I think we can do that.

MR. GRIFFON: -- at the subcommittee in May --

MR. HINNEFELD: In terms of the do-ability of this or in terms of cases --

MR. ELLIOTT: Going forward. Not looking back, but going forward.

MR. HINNEFELD: Not even back to the seventh set, but the last set --

DR. MAURO: Just going -- just move forward.

MR. HINNEFELD: Just go with the eighth.

DR. MAURO: Yeah, we're already (unintelligible) --
MR. ELLIOTT: On the eighth set --
DR. MAURO: Although we're --
MR. ELLIOTT: -- that we deliver and any completed dose reconstructions --
MR. GRIFFON: Yeah.
MR. ELLIOTT: -- from this point on.
MR. GRIFFON: Right.
DR. MAURO: Or I would point --
MR. ELLIOTT: What would it take to put -- put this into the --
MR. HINNEFELD: Into the AR, the analysis record?
MR. GRIFFON: Yeah, the AR, right.
MR. HINNEFELD: Yeah, I'll have to get back with you.
MR. GRIFFON: So for all cases going forward --
MS. HOMOKI-TITUS: (Unintelligible) the actual dose --
MR. GRIFFON: -- but just for the selected cases --
MS. HOMOKI-TITUS: -- record, I'm a little concerned about --
MR. ELLIOTT: Not in the dose report.

MS. HOMOKI-TITUS: Okay.
MR. ELLIOTT: But in the --
MS. HOMOKI-TITUS: But don't you send the dose record overall to DOL as well?
MR. ELLIOTT: Yeah.
MS. HOMOKI-TITUS: I want to talk about that 'cause I'm concerned about internal documents that don't normally be made public all of a sudden becoming...
MS. MUNN: Yeah, I --
MR. ELLIOTT: Okay.
MR. GRIFFON: Okay, (unintelligible).
MS. MUNN: -- I haven't absorbed all the stuff that's in here. I just glanced at them when they came in and -- and I have some concern as to how you would do that in a way that would be helpful to anyone other than probably --
MR. ELLIOTT: Our people.
MS. MUNN: -- your people, yeah.
DR. MAURO: The reality is --
MS. MUNN: As long as you had access to --
MR. GRIFFON: But we don't, that's the point --
MS. MUNN: Yeah, yeah --
MR. GRIFFON: -- so, you know, yeah, yeah.
MS. MUNN: -- but if you had access to this

information --

MR. GRIFFON: Right, so how do we keep -- I didn't think about (unintelligible) --

MR. ELLIOTT: Well, maybe we don't do it for the analysis record but we do it for what gets rolled up for your review.

MS. MUNN: Right, yeah.

MR. ELLIOTT: Whatever gets put on the CDs for your review, let's -- that's where (unintelligible) --

MR. GRIFFON: Yeah, I didn't think about this -- this factor of -- of being in the public realm, but yeah, you're right, Liz, so...

MS. MUNN: Yeah, internally and in terms of --

MR. GRIFFON: Yeah, I -- I don't think anyone outside the process --

MS. MUNN: (Unintelligible) review --

DR. MAURO: I mean in a way right now we have a process whereby, for example, site profile reviews, we do have steps in the process where after our folks read the site profile we collect some questions, we inter-- interact with you folks, clear up a lot of things, makes life real simple and we zero in on the places where -- to me it's -- on a mini-scale, maybe

we should be doing a little bit -- I mean maybe the easiest way is just sort -- allow for this kind of interaction. I know our dose reconstructors (unintelligible) especially some of the newer folks, the ones that haven't benefited from three years of experience, you know, they're -- we're coming up to speed, but the extent to which -- if they could pick up the phone, say I don't understand, for example, you know, why you did this here but you didn't do this here -- I don't know if that's --

MR. ELLIOTT: Well, you can bring that to us.

DR. MAURO: We'll bring that to you.

MR. ELLIOTT: These are our dose reconstructions. I mean I don't want to slight Scott --

DR. MAURO: No -- no, I understand.

MR. ELLIOTT: -- and the ORAU team, but you know, OCAS and --

DR. MAURO: Sure.

MR. ELLIOTT: -- NIOSH folks sign off on these. We should be able to answer your questions. If not, we should be able to turn to our contractor and get a -- get informed response to answer --

MR. GRIFFON: I also think there's a benefit to staying a step away, you know, 'cause if you start --

DR. MAURO: Getting too close.

MR. GRIFFON: -- having those discussions --

DR. MAURO: Yeah. Yeah, that's true.

MR. GRIFFON: -- you know, and you're -- you can start to not think outside the box and not ask questions that you -- you know, so I -- but at least to know -- I think this is kind of the template that -- that would help us to be able to audit the case better. And I agree, it's not much -- not much benefit to other people. But for the internal people reviewing the cases --

MS. MUNN: Well, and being able to reduce the number of items that --

MR. GRIFFON: Right.

MS. MUNN: -- actually appear on the matrix is beneficial to all of us.

MR. GRIFFON: Exactly.

DR. MAURO: Could I make a suggestion? We're in the process of doing the -- the seventh set -- okay? We're going to be done -- we're going to get to the point where we have our draft

material assembled, then we're going to go on to the one-on-one discussions we have with each of the two-group -- at that point we have sort of come to where we are on it and have gotten some feedback from you folks. If at that point collectively we say, you know, there are still like several items related to this case or that case that we're really not quite sure and almost -- so it's almost a collective thing. Perhaps we could just simply feed back to you, say listen, we're at this point in the process, we notice that we have about four or five questions on this collection that maybe we could move them out easy, and maybe at that -- then you could make a judgment at that time, yeah, perhaps setting up a quick conference call with the right people and we could clean up those (unintelligible).

MR. ELLIOTT: It's okay with us if it's okay with the working group.

MR. GRIFFON: Yeah, as long as you -- you know, we have to be -- I mean I think -- I don't want to speak for the whole Board, either. I mean there's a reason that we have these on the record --

DR. MAURO: Yeah.
MR. GRIFFON: -- in the public forum, so --
DR. MAURO: Yeah.
MR. GRIFFON: -- I think we -- we've certainly -- I think we all certainly understand the need to -- to sort of expedite some technical issues, but we don't -- you know, we don't want to -- you know, we have to -- to keep the discussions in the public, as well, yeah, yeah, so --
MS. MUNN: That's certainly understandable, what you're saying. But by the same token, it's very clear from this seat that the technical issues often could be resolved very easily by one or two phone calls by --
MR. GRIFFON: Yeah, and I -- I think --
MS. MUNN: -- the people who are looking specifically at the technical issues.
MR. GRIFFON: And I think a way to alleviate it, and we've done this in some of the site profile reviews -- I mean we're -- we're doing this with Rocky on an ongoing basis. If we have a technical phone call, we -- we just ask that the parties keep min-- and John, you've been good at this, that you -- you say I -- I

talked with -- or our people talked with their people and here's what we discussed and here's what we came out with, and you put that on -- you bring that back to the subcommittee and that's fine, so --

MS. MUNN: A brief memo, the working group has it, it's on the record, yeah.

MR. GRIFFON: Yeah, I think we could do this and I think --

DR. MAURO: It could even be -- it could even be -- 'cause my guess is that by the end of that process it may be just a limited number of things that we could probably clean up pretty easily --

MR. GRIFFON: But I think --

DR. MAURO: -- we could actually send it to you. We say listen, here's some questions that we -- that we think if we can get some quick answers to, it would help us resolve -- and not only -- you know, 'cause they're -- you notice they repeat. You know, we have this initiative (unintelligible) --

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

DR. MAURO: Might use it to sweep those away. Perhaps a memo -- I mean it'll all be on the record, say here's some issues that we're concerned with, we put them out to the working group and it may be beneficial to air these out and it'll all be in the sunshine.

MR. GRIFFON: Yeah. And I -- and I think -- yeah, I think -- I think we should encourage that. I think also use your judgment on --

DR. MAURO: Yeah.

MR. GRIFFON: -- when you think well, wait a second, this is -- this is a little bigger and I think we need to bring it to the full subcommittee or Board, whatever, you know --

DR. MAURO: Yeah.

MR. GRIFFON: -- so -- but I think we need to encourage that -- a dialogue, you know.

MS. BEHLING: Mark, at this point in time I wouldn't anticipate that we would need to have too many discussions with the dose reconstructors, and I know when we started this process we had asked that question and we were discouraged from doing that. And quite honestly, I think that it has helped us in our auditing process because we also, by not being

able to just run to the dose reconstructor or run to somebody to get answers, it also has brought to our attention that maybe there's some deficiencies in some of the procedures or maybe things are not clearly spelled out in the dose reconstruction report. So I think there's been some benefit from having to work through some of these issues on our own. And so at this stage in the game, I personally do not feel I would need to -- hopefully would not want to discuss details -- possibly some technical issues, but I -- I wouldn't -- I wouldn't make a point of calling them on a routine basis, I can assure you of that.

MR. GRIFFON: That's sort of my point I made a few minutes ago is that --

MS. BEHLING: But -- but what I --

MR. GRIFFON: -- keeping -- keeping a little independence and separation there I think is useful because it makes you -- it makes SC&A maybe -- maybe you're coming at an issue from a little different perspective and if -- if somebody steps you right through you say oh, yeah, that makes sense, you know. But if you come at -- you might see something different

(unintelligible) --

MS. BEHLING: Absolutely.

MR. GRIFFON: -- yeah, I think that's useful for the (unintelligible).

MS. BEHLING: I agree, but what I do feel would be very beneficial is these notes that walk you through the -- as you said, if you don't have this information or if you do have this, follow this TIB or follow that TIB. That I think would be very useful for us.

MR. GRIFFON: Okay. We're going to --

MR. ELLIOTT: So if I can -- can I sum this up so we can make sure we're all -- with the same understanding.

We would be receptive to technical discussions, if you come up with an issue or so that seems to be thematic or that maybe is not thematic but you just don't have a clear understanding of what we did, how we did it, what we meant or whatever, and you think that maybe you -- just hearing from us will -- will elucidate that and clarify it, we're welcome -- we're receptive to that. We'll accommodate that. However you want to work that out, that's fine.

MR. GRIFFON: And I -- I think that -- I think

we should work that out in a way that --

MR. ELLIOTT: But the intent here is to make sure that we keep as much of this in the public's view as possible --

MR. GRIFFON: Just keep a record -- if you have that kind of discussion, just give us a record of it and bring it back to (unintelligible) that, you know, we -- in between meetings we had this dialogue with the -- you know. I think that's fine. Wanda, do you...

MS. MUNN: I think that'll probably do it. I just -- you know, looking through these documents again, I can see how it would have illuminated SC&A's process enormously to have had access to this information and -- but I also agree that Larry's absolutely correct in his position that the request needs to come through NIOSH. It's a NIOSH decision. I think your statement about keeping arm's length between the parties is quite reasonable. You know, I think you've got it, Larry.

MR. GRIFFON: All right. And then as far as -- as a report back for the -- I keep saying May 4th, is it May 2nd or --

(Whereupon, multiple participants spoke

simultaneously, rendering transcription of individual comments impossible.)

MR. ELLIOTT: The next meeting of the subcommittee, Lew wanted to make sure I did this little dance for him, is scheduled for May 2nd --

MR. GRIFFON: Right.

MR. ELLIOTT: -- 2007 in Denver from 9:00 a.m. to 11:30 a.m. --

MR. GRIFFON: Right.

MR. ELLIOTT: -- before the real -- full Board meeting starts.

MR. GRIFFON: So maybe a -- at that -- Stu, if possible -- at least give us an update, even if it's not a complete evaluation, but you know, just of the feasibility of providing these for the --

MR. HINNEFELD: Eighth set.

MR. GRIFFON: -- eighth set of cases, you know, can you -- can you include it and incorporate these DR guides if -- if they're available. They may not be for some cases. And then the feasibility of -- of including them -- well, I guess -- I guess --

MR. ELLIOTT: That answers it.

MR. GRIFFON: I guess that's it.
MR. GRIFFON: If we can do it for the eighth, we can do it for the 10th --
MR. GRIFFON: Yeah, I was --
MR. ELLIOTT: -- or the ninth.
MR. GRIFFON: -- just saying including them on all cases, but that gets into Liz's issue, so I guess -- I guess we're just saying for all reviewed cases.
MR. ELLIOTT: I think that's where we ended up a minute ago.
MR. GRIFFON: Yeah.
MR. HINNEFELD: Speculating here --
MR. GRIFFON: So just the feasibility of that, yeah.
MR. HINNEFELD: -- it will probably be -- can we do it will probably be case-specific, that when a case is selected for review, at that point we will know if we have, you know, a -- an instruction or a guide that was utilized in the development of that.
MR. ELLIOTT: For that time frame.
MR. GRIFFON: For that time frame.
MR. ELLIOTT: That (unintelligible).
MR. GRIFFON: That's the hard part.

MR. HINNEFELD: Yeah, for -- for that -- what was utilized for that case, will we have it, I don't think we'll know until the case is selected from this point forward, you know.

DR. MAURO: (Unintelligible)

MR. HINNEFELD: So it'll be case-specific, but I will -- I think that, but as -- that's largely speculation, so let me speak to the ORAU team in the meantime and make sure that -- that, you know, there is nothing that I don't foresee -- you know, anything that I don't see here that would interfere with the ability to do that.

MR. GRIFFON: Okay. So we'll just get an update on it when you check with ORAU to make sure -- you know.

MR. HINNEFELD: Yeah.

MR. GRIFFON: And it may -- it's probably going to be case-specific, but --

MR. HINNEFELD: Yeah.

MR. GRIFFON: -- you know, the indication seems to be that you -- you can do that, it's just the -- that some cases may not be able to find either one for that case because there was -- there weren't any, or -- or you can't nar-- you

can't find one for that time frame.

MR. HINNEFELD: For that time frame.

MR. GRIFFON: Yeah, yeah.

MR. SIEBERT: That's the biggest issue.

MR. GRIFFON: Yeah, that -- I think that's the biggest issue. Right. Yeah.

MR. HINNEFELD: The -- I don't know if you want to get into this, Mark, of -- there was discussion about the selection of the eighth case -- the eighth set of DRs.

MR. GRIFFON: Yeah, I think we just -- we talked before, I think we're -- Stu and I talked about the selection of the eighth case and what we were -- what I was proposing is use the same criteria as we did for the seventh set, which is that Stu is going to generate a list of the best-estimate cases, bring them back to us for the May meeting, and then we can do a preliminary selection and then he's going to go find that refined criteria and come back with a -- for those selected cases, you're going to come back with that more detailed information --

MR. HINNEFELD: (Unintelligible)

MR. GRIFFON: -- that we had asked about.

Right?
MR. HINNEFELD: Right.
MR. GRIFFON: So do that same two-step process, and I think that's okay. Right?
MR. ELLIOTT: And the number being 40 or --
MR. HINNEFELD: 38.
MR. ELLIOTT: -- 38?
MR. HINNEFELD: 38.
DR. MAURO: That's what I was going to say --
MR. HINNEFELD: Or 32.
DR. MAURO: -- 38 -- 30-- I'm sorry, 32, 'cause 28 was the last batch --
MR. HINNEFELD: 28 were selected for the seventh.
DR. MAURO: -- and -- and then -- right.
MR. GRIFFON: So 32 cases for the eighth set --
DR. MAURO: So 32 will do it, and that will close out our fiscal year 2007 --
MR. GRIFFON: Okay.
DR. MAURO: -- obligations.
MR. ELLIOTT: So from 32 you're going to select...
DR. MAURO: Well, from -- from the batch --
MR. HINNEFELD: From -- from some 400 or 500 best estimates --

DR. MAURO: Picked in --
MR. HINNEFELD: -- they will select --
MR. ELLIOTT: And these are all best estimates.
MR. HINNEFELD: -- somewhat more than 32 --
DR. MAURO: Yeah.
MR. HINNEFELD: -- in order to get --
MR. ELLIOTT: Down to --
MR. HINNEFELD: -- more detailed information on that subset of -- and then from that subset, 32 will be selected.
DR. MAURO: And delivered to us, that's -- we're looking to get -- receive CDs with 32 on them.
MR. ELLIOTT: All best estimates.
MR. HINNEFELD: Well, my proposal was to start by running all of the best est-- full internal and external and -- and come up with that population 'cause I suspect it may be -- come up with 400 or 500 by now.
MR. ELLIOTT: Okay.
MR. HINNEFELD: And from that, my thought was we should --
MR. ELLIOTT: (Unintelligible) be 1,000.
MR. HINNEFELD: -- be able to find a subset of -- we should be able to find a subset that is

robust enough and big enough to get the additional information that we can select 32.

MR. GRIFFON: So you think you're up to 400 or 500 (unintelligible)?

MR. HINNEFELD: I'm thinking we must be. I think it was over -- it was over 200 last time we ran it, and --

MR. GRIFFON: The only thing i--

MR. ELLIOTT: And we're talking adjudicated cases, too, so you've got to --

MR. GRIFFON: Yeah.

MR. HINNEFELD: Well, that's right, we're talking adjudicated cases.

MR. ELLIOTT: -- screen that down a little further.

MR. HINNEFELD: Yeah.

MR. ELLIOTT: And at the last Board meeting, I -- I'm trying to recall the slide I presented on the different approaches to dose reconstruction and what the percentages was on the best estimates internal/external. I -- I don't know that I -- well, I don't -- I don't want to say.

UNIDENTIFIED: We may not be at 400.

MR. HINNEFELD: What -- what I will do -- what

I can do --

MR. ELLIOTT: It's definitely not going to be (unintelligible) analysis --

MR. GRIFFON: The only thing I was going to say is --

MR. ELLIOTT: -- (unintelligible) 400 or --

MR. GRIFFON: What I was going to say is --

MR. HINNEFELD: What I can do is --

MR. GRIFFON: -- sort randomly, too.

MR. HINNEFELD: All those lists -- all that list and provide that list to the -- to the subcommittee members ahead of time, and --

MR. ELLIOTT: I think that's a good idea.

MR. HINNEFELD: -- and then you guys can converse however you want and decide --

MR. GRIFFON: 'Cause my -- one --

MR. HINNEFELD: -- do we think we have enough here or do we want to get some randomly-selected cases as well.

MR. GRIFFON: 'Cause one concern we might have, even if you have a lot of cases, if they're all from Savannah River and Hanford, you know, we --

MR. HINNEFELD: Uh-huh.

MR. GRIFFON: -- we might have to say no --

MR. HINNEFELD: Right.
MR. GRIFFON: -- we can't do these -- more of these, you know, or whatever.
MR. HINNEFELD: So I think --
MR. GRIFFON: So we might -- if we -- if you get these out to us early enough, we can maybe -- via e-mail, let you know and come to the Board meeting with a selection of random, too --
MR. HINNEFELD: Yeah, and however many --
MR. GRIFFON: -- to see --
MR. HINNEFELD: -- however many randomly-selected you want.
MR. GRIFFON: And I think we can do that by e-mail --
MS. MUNN: I think so.
MR. GRIFFON: -- with the four subcommittee members, you know.
MS. MUNN: Yeah. You up for that, Mike?
MR. GIBSON: Uh-huh, yeah.
MR. ELLIOTT: For -- for planning purposes and -- and speaking of timing, your ninth -- ninth round, tenth round selections -- you might want to consider different kinds or different types of -- of reconstructed cases. We'll have more

partials, as far as classes added and non-presumptive cases being done with a partial. You're going to -- you're going to have -- at some point in time I think you're going to see more AWEs treated like the set of Battelle cases where we've asked for a Technical Basis Document to be developed with an appendix specific to a type of process. Those are -- they're starting to come through now, so these are just some of the other things I -- I would alert you to that you might want to think through about, you know, your case selection strategy.

I don't know, is there other categories like that, Stu, than those two?

MR. GRIFFON: Do you -- can you tell us -- not right now, but provide us that list of AWEs that would have that appendix -- process-specific appendix?

MR. ELLIOTT: There were originally about 1,400 claims that we carved off, representing a number of sites. And I don't know -- you know, they're just now starting to come through, so they may be not the tenth round or eleventh round, but it might be the 12th round you might

want to think...

MR. HINNEFELD: I -- I don't -- I don't know the number of either of those categories. I can't think of any others that would be noteworthy, but you're right, those are two categories that --

MR. GRIFFON: But maybe --

MR. HINNEFELD: -- just thinking out loud, the full internal and external will not capture partial dose reconstructions from people who (unintelligible) --

MR. GRIFFON: Right.

MR. HINNEFELD: -- in the SEC class, I don't believe.

MR. GRIFFON: (Unintelligible)

MR. HINNEFELD: So -- I mean we could query that population specifically. We could do that.

MR. GRIFFON: I think let's stick with best estimate for now.

MR. HINNEFELD: Stick with what we're doing for now.

MR. GRIFFON: But -- yeah.

MR. HINNEFELD: Yeah, 'cause you're (unintelligible) --

MR. ELLIOTT: That -- that one staged up sooner -- that -- that you were just talking about, that staged up sooner -- if we look at Mallinckrodt, Iowa and the early year classes that have been added, you know, we started doing some of those non-presumptive partial dose reconstructions. But -- and this other category that I'm talking about about the -- the lot of AWE claims --

MR. GRIFFON: Right.

MR. ELLIOTT: -- that's -- that's a little further down the --

MR. HINNEFELD: Yeah.

MR. ELLIOTT: -- down the (unintelligible).

MR. GRIFFON: Well, all I was saying is that these -- might be bet-- second population sounds interesting, can --

MR. ELLIOTT: Yeah, 'cause it's done under a whole different --

MR. GRIFFON: Yeah.

MR. ELLIOTT: -- somewhat different, I'm (unintelligible) --

MR. GRIFFON: In the future can you give us a listing of those sites that would be covered by the (unintelligible)?

MR. HINNEFELD: Yeah, yeah.
MR. ELLIOTT: Yeah, we can give you that.
MR. GRIFFON: Okay.
MR. ELLIOTT: You're going to see some of those sites come out of 83.14s, so you won't have to re--
MR. GRIFFON: Right, right.
MR. ELLIOTT: -- (unintelligible) in DR, but -- but the ones that don't make 83.14s, they're certainly fair game as this new category, I think.
MR. GRIFFON: Yeah. All right, anything else for the record?
MS. MUNN: I don't believe so.
MR. GRIFFON: Ray, anything? Anymore Smarties? Okay, I think we're ready to --
MR. ELLIOTT: Kathy or Hans, did you have anything --
MS. BEHLING: No, I have nothing else.
MR. GRIFFON: All right.
MR. ELLIOTT: Do we have anybody else on the phone that had something to say?
(No responses)
MR. GRIFFON: If not, I think we'll adjourn. Meeting adjourned.

(Whereupon, the meeting was concluded at 3:28 p.m.)

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

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