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

convenes

THE SUBCOMMITTEE FOR DOSE RECONSTRUCTION REVIEW OF THE

ADVISORY BOARD ON

RADIATION AND WORKER HEALTH

The verbatim transcript of the Meeting of the Subcommittee for Dose Reconstruction Review of the Advisory Board on Radiation and Worker Health held at the Marriott Airport, Hebron, Kentucky, on June 10, 2008.

STEVEN RAY GREEN AND ASSOCIATES
NATIONALLY CERTIFIED COURT REPORTERS
404/733-6070

C O N T E N T S

June 10, 2008

WELCOME AND OPENING COMMENTS	6
DR. CHRISTINE BRANCHE, DESIGNATED FEDERAL OFFICIAL	
INTRODUCTION BY CHAIR	
MR. MARK GRIFFON, CHAIR	9
SIXTH SET OF CASES WRAP-UP	11
SEVENTH SET OF CASES MATRIX	75
COURT REPORTER'S CERTIFICATE	297

TRANSCRIPT LEGEND

The following transcript contains quoted material. Such material is reproduced as read or spoken.

In the following transcript: a dash (--) indicates an unintentional or purposeful interruption of a sentence. An ellipsis (. . .) indicates halting speech or an unfinished sentence in dialogue or omission(s) of word(s) when reading written material.

-- (sic) denotes an incorrect usage or pronunciation of a word which is transcribed in its original form as reported.

-- (phonetically) indicates a phonetic spelling of the word if no confirmation of the correct spelling is available.

-- "uh-huh" represents an affirmative response, and "uh-uh" represents a negative response.

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

-- ^/(inaudible)/ (unintelligible) signifies speaker failure, usually failure to use a microphone.

P A R T I C I P A N T S

(By Group, in Alphabetical Order)

DESIGNATED FEDERAL OFFICIAL

BRANCHE, Christine, Ph.D.
Principal Associate Director
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
Washington, DC

MEMBERSHIP

CLAWSON, Bradley
Senior Operator, Nuclear Fuel Handling
Idaho National Engineering & Environmental Laboratory

GIBSON, Michael H.
President
Paper, Allied-Industrial, Chemical, and Energy Union
Local 5-4200
Miamisburg, Ohio

GRIFFON, Mark A.
President
Creative Pollution Solutions, Inc.
Salem, New Hampshire

MUNN, Wanda I.
Senior Nuclear Engineer (Retired)
Richland, Washington

PRESLEY, Robert W.
Special Projects Engineer
BWXT Y12 National Security Complex
Clinton, Tennessee

ANNOUNCED PARTICIPANTS

ADAMS, NANCY, NIOSH
BEHLING, KATHY, SC&A
BRACKETT, LIZ, ORAU
BURGOS, ZAIDA, NIOSH
ELLIOTT, LARRY, NIOSH
FARVER, DOUG, SC&A
HINNEFELD, STUART, NIOSH
HOWELL, EMILY, HHS
KOTSCH, JEFF, DOL
MAURO, JOHN, SC&A
SIEBERT, SCOTT, ORAU

P R O C E E D I N G S

(9:30 a.m.)

WELCOME AND OPENING COMMENTS
DR. CHRISTINE BRANCHE, DESIGNATED FEDERAL OFFICIAL

DR. BRANCHE: Good morning. I'm Dr. Christine Branche, and we're finally ready to start. Could someone who's on the phone please let me know that you can hear me?

MR. GIBSON (by Telephone): Yeah, I hear you, Christine.

DR. BRANCHE: Thank you, Mike.

This is the meeting of the Subcommittee on Dose Reconstruction. I thank you for your patience. We had some airport delays and now we're all ready to go. Would the Board members who are here in the room please state your names?

MR. PRESLEY: Robert Presley.

MR. GRIFFON: Mark Griffon.

MS. MUNN: Wanda Munn.

MR. CLAWSON: Brad Clawson.

DR. BRANCHE: Board members participating by phone would you please state your names?

MR. GIBSON (by Telephone): Mike Gibson.

DR. BRANCHE: Are there any other Board members?

(no response)

DR. BRANCHE: We do not have a quorum of the Board so we can proceed.

NIOSH staff in the room please state your names?

MR. ELLIOTT: Larry Elliott, NIOSH.

MR. HINNEFELD: Stu Hinnefeld.

MS. ADAMS: Nancy Adams.

DR. BRANCHE: NIOSH staff participating by phone would you please state your names?

MS. BURGOS(by Telephone): Zaida Burgos.

DR. BRANCHE: ORAU staff in the room please state your names.

MS. BRACKETT: Liz Brackett.

MR. SIEBERT: Scott Siebert.

DR. BRANCHE: ORAU staff by phone please state your names.

(no response)

DR. BRANCHE: SC&A staff in the room, please state your names.

DR. MAURO: John Mauro.

MR. FARVER: Doug Farver.

DR. BRANCHE: SC&A staff by phone, please

state your names.

MS. BEHLING (by Telephone): Kathy Behling.

DR. BRANCHE: Other federal agency staff in the room, please state your names.

MS. HOWELL: Emily Howell, HHS.

DR. BRANCHE: Other federal staff by phone, please state your names.

MR. KOTSCH (by Telephone): Jeff Kotsch with Labor.

DR. BRANCHE: Thank you.

Petitioners or their representatives, would you please state your names?

(no response)

DR. BRANCHE: Workers or their reps please state your names.

(no response)

DR. BRANCHE: Members of Congress or their representatives please state your names.

(no response)

DR. BRANCHE: Any others who would like to mention their names please do so now.

(no response)

DR. BRANCHE: Thank you.

Before turning it over I'd just ask very strenuously that those of you

participating by phone please mute your phones. We've come to understand quite clearly that if you don't mute your phones, then other people participating by phone cannot hear. If you do not have a mute button, then please use star six to mute your phones. And be warned, we really can tell if you haven't muted your phones. So thank you very much.

Mr. Griffon.

INTRODUCTION BY CHAIR

MR. GRIFFON: Thanks, Christine.

The agenda's pretty simple for today. We're going to discuss the sixth set of cases which we have had initial discussions about. And I think we're close to completing the sixth set, actually, of discussions. And then we haven't done the seventh set at all yet, so we're going to initiate discussions on that. We have NIOSH's responses. I hope everyone got the seventh matrix. Stu sent that around to everyone, and we'll start through that one.

The sixth set, as I said earlier, there's a document, a 13-page Word document, that SC&A put out with the remaining issues on

the matrix. And in that document there's also a couple that in a later e-mail SC&A sent a response for a couple items. And I inserted, I took them out of the e-mail and inserted them in the Word document.

So you may not have that version, Doug.

But it's Doug's response in those sections like in 107.4 on page two you'll see --

MR. HINNEFELD: When did you send this, Mark?

MR. GRIFFON: Wanda, when did I send it, yesterday?

MS. MUNN: Yesterday.

MR. GRIFFON: Yesterday morning.

MR. HINNEFELD: Was I on it?

DR. BRANCHE: I can forward it to you.

MR. GRIFFON: Sorry, Stu, if I didn't put you on there.

So, and then I would also refer back to the matrix from our last meeting which was in March, I think March 25th, 2008. And I think I forwarded that to the work group as well, the latest version that I had.

So these responses in the Word document that we discuss I plan on updating the matrix with whatever we conclude from this set of discussions. And if anyone finds anything in the matrix as we go through that isn't captured in this document, I think we, you know, we want to stop and grab that too if we need further discussion.

SIXTH SET OF CASES WRAP-UP

So I guess the best way to proceed -- I'm giving Stu a chance to look at that. I apologize. The best way to proceed probably is to turn the table over to SC&A, and let them start with 105.6, which is the top one on your document.

MR. FARVER: I believe that was closed at the last Subcommittee meeting.

MR. GRIFFON: It's going to be a quick meeting. I'm just going to go along in the matrix, too, and if there are people have the matrix, you can review with me. If there's any questions still remaining -- I do have a question on 103.2. Going back on the matrix there's a -- and this is just editing my responses really.

I have a note in there for people who have the matrix open, it says for this case they used 14 of 22 years of employment, not 100 percent. It's not clear why. And this is, I think, my note, maybe I should have edited these before I forwarded them to everybody.

I guess that's a placeholder for me. I wasn't sure if we had resolution there on that one. So if everybody can look back at 103.2. I'm looking at case 103, actually, because 103.1 also has the question that would be in my resolution column there.

Stu, do you have that?

MR. HINNEFELD: Well, I have our response. Was this a compensated case?

MR. GRIFFON: 103.1 was a compensated case.

MR. HINNEFELD: So we just used a partial and took as much dose as we needed.

MR. GRIFFON: That's why, okay.

MS. MUNN: Is that 103.2?

MR. GRIFFON: And then on 104.6, just to catch us up to where this document starts, 104.6. I have in the resolution that NIOSH is developing a white paper -- oh, okay. And it

says SC&A to check this, review this; I can edit later. But that's that issue.

MS. MUNN: I'm sorry. That wasn't clear to me.

MR. GRIFFON: Oh, the resolution there is that NIOSH is developing the ingestion model, but it's one of the generic models that they're working on, and SC&A will review after, once we see that model. We haven't seen the model yet. So that's deferred to that generic white paper.

DR. MAURO: Is that OTIB-0009, the generic ingestion model?

MR. HINNEFELD: I don't recall.

DR. MAURO: Okay, because we did look at that, and we do have a couple of things we'd like to talk about, but that may be with the Procedures meeting.

MS. MUNN: That was going to be my question. Is this one of these things that --

MR. GRIFFON: No.

MS. MUNN: -- that is going to be officially transferred?

MR. GRIFFON: That's a good question, Wanda, because now I read that closer it says

provided by NIOSH and reviewed and accepted by SC&A, and then SC&A to check this.

DR. MAURO: Yes.

MR. GRIFFON: So I guess you still had some remaining questions --

DR. MAURO: I do. I have one --

MR. GRIFFON: -- and haven't fully accepted --

DR. MAURO: -- but it's probably more in the purview of Procedures because it's OTIB --

MR. GRIFFON: Is that an OTIB or is, what is that?

DR. MAURO: Well, yeah, OTIB-0009 addresses the ingestion pathway. And it's applied universally now for all sites. And there's still, Jim gave a presentation on it at one of the Board meetings if you recall, and he answered lots of our questions. It was a multi-layered concern, but there's still one particular aspect, the bottom line.

The one aspect that we're still a little concerned with is, the bottom line when you're finished with that ingestion model, and you go through all the process, in effect, you're saying that the worker is ingesting 0.5

milligrams per day of dust. When we look at the literature on that, that really is way down there in the literature. For example, NCRP recommends 100 milligrams per day. EPA recommends 50 milligrams per day.

There is evidence that 0.5 is a good number, too, and there's reasons to believe that the 100 number that has been adopted by NCRP might be too high. So, and Jim explains all this. Right now where we're coming down is that given the fact of the 50 milligrams per day and the 100 milligrams per day, default ingestion rate recommended by NCRP and EPA, you're two orders of magnitude lower than the 50.

And I'm pretty familiar with that literature, and it's down at the bottom end of the edge of the experimental data. And I guess I'd like to talk -- and that might be the right number. Because Jim pointed out that most of the way in which they measure the amount of stuff -- it comes out in the feces basically from ingestion -- Jim makes a very good argument that probably most of that came from inhalation. You inhale; you swallow.

And so what you're really saying is not what was ingested; it was inhaled. And that might be the case, but I guess right now I guess I haven't made that leap yet where I'm able to go from the 50 down to 0.5.

MR. HINNEFELD: Okay, I'll try to convey that to Jim.

MR. GRIFFON: But wouldn't NCRP have known that as well? I think --

DR. MAURO: No, there's a guy named Calabrese who did a lot of the research on it. He looked at all of his measurements, what he measured. He measured silicon in fecal material, and he said, okay, the only way that silicon could have gotten there is from the ingestion of soil.

It was soil, not radioactivity, the inadvertent ingestion of soil or soot. And he automatically assumed that when you see that it had to be due to ingestion. But he didn't factor in the possibility that, wait a minute, a large fraction might have been from the material that was swallowed after it was first inhaled. And it's in there.

And so Jim makes that point very well,

but it does bring us down a factor of 100. Now the funny thing about the whole thing it's a little bit of a tempest in a teapot because you still don't get very much of a dose anyway because the ingestion dose, no matter, even if you kick it up to 50 milligrams a day, it's still going to be miniscule compared to the inhalation dose. And so that's the story.

MR. GRIFFON: So do we want to, this is deferred to the Procedures work group then? Is that -- Wanda's saying yes?

MR. HINNEFELD: It's listed as a global issue in Procedures.

MR. GRIFFON: Yeah.

MR. HINNEFELD: And so --

MR. GRIFFON: I'm not good at hand signals, but I think Wanda's confirmed yes.

MR. HINNEFELD: If I understand it, there will be a set of discussions on these global issues. I mean, we've identified various things as global, and there would have to be a separate discussion. Whether it occurs here, I think, at Procedures or wherever it occurs, to go through these global issues and clear them all out.

MR. GRIFFON: Because a lot of the cases have had those findings.

MR. HINNEFELD: Right, and several, I think, in the seventh group --

MR. GRIFFON: Right, come up again and again. Resuspension is another one. All right, for now I'm putting it in the Procedures.

And then 104.7 it says OTIB-0053 is under final review. Does that mean this is also a Procedures question? Oh, this is the recycled uranium.

MR. HINNEFELD: Yeah, what's the content, what's the transuranic content of recycled uranium? And it's the recycled uranium TIB, which I think is still in review. And similarly, there are a number of findings in dose reconstructions that relate to this topic. So however we reconcile that when that OTIB is ready to be reviewed and discussed, whichever format is reconciled in it, will reconcile several findings from dose reconstructions.

MR. GRIFFON: I guess for consistency that is the procedure that will go to the

Procedures work group, right?

MS. MUNN: I'm sorry. I was writing. I missed that. What is Procedures taking now?

MR. GRIFFON: The next one, 104.7 has OTIB-0053, recycled uranium procedure.

MS. MUNN: We have that.

MR. GRIFFON: You have that already, right.

Now, I'm up to case 105, but for case 105 -- I'm just trying to think how we're handling this as far as closing out these cases. Just for a first resolution I say that the case is being reevaluated as part of the PER review. That's fine, but where does that put it in terms of closing our matrix? I mean, do we wait until this is reevaluated?

I mean, that could take awhile, right, Stu? I don't know what the schedule is.

MR. HINNEFELD: Yeah, the schedule on reworks is fairly long because of the quantity and the competing priorities. I would suggest that this really speaks to the guidance, I believe, that was available to do this task as our response, I believe, says that -- unless I'm misunderstanding where we're at.

MR. GRIFFON: Well, 105.1 is the one --

MR. HINNEFELD: The guidance in OTIB-0012 was published after this DR was completed. And so at least that portion of the finding, ^ may be more familiar with this than I. At least the view of the response is that this error or this deficiency in this dose reconstruction would not occur today because the technical guidance today would tell them to do something else.

MR. GRIFFON: Yeah, so that part of the finding, I guess you're right, that says NIOSH agrees. Workbook has been revised. And then but then overall the cases being reworked under PER review is the other part of that. So I guess the finding is closed, but the case is being reworked, right?

DR. MAURO: This is like when the in abeyance problems we had on Task Three were. In other words when you get to the point where you agree the solution is in hand, but it hasn't actually been put on the table.

MS. MUNN: Exactly. And if we're going to follow the same policies in this Subcommittee as we've established in Procedures, then this is the big handful that we've sort of dumped

on Nancy to get us squared away in terms of when closed is closed for the original group, and how we transfer that knowledge and tracking to another group. And do we even have a PER?

MR. GRIFFON: Well, I think it's multiple PERs is probably right. I don't know what PERs affect this case, but sometimes it's --

MR. SIEBERT: It was returned to us in January under the insoluble plutonium PER. So it is being worked under that.

MR. GRIFFON: But as Stu has pointed out before, if you rework it, you're going to rework with all the current procedures, right? So then the question is, I mean, the problem is I think the finding, I don't know what the status of this case was in terms of POC, but if it was a close one, that's the issue. If it's one of those that we, you know, the finding NIOSH agrees, but did it impact the case is still an open question. Then we have to kind of see --

MR. FARVER: The finding looks like it was more of a workbook issue. And it looks like they corrected the workbook.

MR. GRIFFON: But I'm asking if the PER, you know, if these multiple findings of case 105 could have affected the outcome, the decision, basically. I guess that's what we can't answer right now until you rework the case, right?

MR. HINNEFELD: Right. Right now the Subcommittee has heretofore only dealt with closed cases that have been adjudicated. So now we have a situation where there is a case that came back from adjudication, has been reopened, and is now active.

So, I mean, the consideration of impact of these findings, they would be considered, I mean, these findings would, you'll have the impact of all of the changes, these findings and any other changes that were applicable to that case will be reflected in the new adjudication, however it gets adjudicated next.

So it's a little difficult probably to say these findings led to the change in the result for this claimant. Although theoretically you could say, well, the sum total of findings that have come out of the

technical review of the program have led to that.

So at the time of comparison would really be an adjudication because even though we have a POC when we do the dose reconstruction, it's not final until it's adjudicated. And there could be things that don't go the way we thought.

MR. GRIFFON: So it could be extended even further.

MR. HINNEFELD: So, I mean, that's a long wait. That'll be a long wait to hold this in some sort of category like abeyance with just, and you're just waiting for resources to become available to finish the dose reconstructions that are going to rework dose reconstructions and then to work its way through the adjudication process.

MR. GRIFFON: I don't think, I mean, I think we can close out the individual findings. We just have to put some sort of tracking on the impact of the PER review on the final outcome of the case. I think we can handle that.

MR. HINNEFELD: I think we should be able to find electronically cases that were reworked

for PER that were reviewed by the Subcommittee and the Board and match up those lists and say electronically these cases were reviewed and then subsequently gone through PER and the outcome changed or did not. I think we could probably do that electronically separate and apart from tracking it here. I think all those numbers are databased enough we can do that.

MS. MUNN: I think we're going to be able to do it, too. But this raises a question in my mind as to how we in this Subcommittee handle our tracking of it. It would make sense to me when we have an issue like this one which essentially has gone as far as we can take it in the Subcommittee, it's now a PER issue. And it seems to follow that we should identify in our activities PERS as a separate item other than the numbered item that they began with so that we can close this item since we can't -- as Stu points out, holding it in abeyance is not really what we're doing. It's out of our hands now. It's in the hands of the review process for PERs. Don't we need a category that says transferred to PER

subgroup?

MR. GRIFFON: We don't have a PER subgroup.

MS. MUNN: And track it electronically in that way. It seems to follow to me.

Nancy, does that make sense to you?

MS. ADAMS: Yeah, but there is no group. There is no entity.

MS. MUNN: No, I know, that's why I'm saying it might behoove us to consider the possibility of--

MR. GRIFFON: Having a PER subgroup.

MS. MUNN: -- a subgroup of the Subcommittee. There aren't that many PERs.

MR. GRIFFON: Well, but it impacts a lot of cases.

MR. HINNEFELD: It's a ton of cases.

MS. MUNN: They do impact a ton of cases, but as Stu pointed out, there's the time constraint involved here.

DR. MAURO: In theory, really defining what the ultimate objective of this Subcommittee is, now, if the ultimate objective is to do a critical evaluation of some samplings of adjudicated cases, and the outcome of that sampling is, yes, we've identified certain

cases where we all agree that there's a technical problem that is being addressed under a new OTIB.

Or, yes, we agree and there's a strategy that's in place to revisit it, the question then becomes do you want the Subcommittee then to reevaluate the new protocol, for example, the new procedure. Then in theory that would go to the Procedures group. And is it the objective of the Subcommittee to actually carry it to its very end to see what happened to that case. What did it reverse? Did it stay the same?

So I mean it's almost really a definition of where the boundaries of, where you would like the boundaries of the Subcommittee's objectives to be. It could be anywhere along this continuum. But I think we haven't had this conversation before, and I think it's important that at this point because we're moving into that mode now.

We're moving away from debating the technical merits. We're moving more into, okay, we agree on the technical solution. Now the question is what does it do to the DR for

that particular case and I don't think we've had this, you know.

MS. MUNN: No, I don't believe we have in this group. That's why I'm raising the issue of a potential, either a subgroup or simply an electronic category.

MR. HINNEFELD: This could be a periodic report. I mean, if you want to know about outcomes of reviewed cases that had been reworked, if you wanted to know outcomes of that piece of data, that could be a periodic report that we could with just a little work generate electronically.

MS. MUNN: Yeah, especially as long as the electronic listing of what's precise about the source of the information from this Subcommittee.

MR. GRIFFON: In other words it could link back to these particular ones that we reviewed as well as the global. And I'm sure they can make that, I mean, I'm sure we can figure that out.

So I think that's a good idea. I mean, I don't think it should hold up these individual findings for this case so it's

going to be referred somewhere either into the report or we might want to have a work group established to sort of monitor that quarterly report or whatever kind of report that NIOSH would put out.

MR. PRESLEY: Could that be something that Stu would report on at each of the full Board meetings, or Larry or whoever's there?

MS. MUNN: Or every other one.

MR. PRESLEY: Or every other one, yeah.

MS. MUNN: Quarterly sounds like it will be fine.

MR. GRIFFON: Yeah, quarterly's fine.

MR. PRESLEY: We don't need kind of quarterlies.

MS. MUNN: Well, there's a great deal of effort that goes into those PERS.

MR. PRESLEY: Every other one maybe.

MS. MUNN: Yeah, yeah. Certainly, quarterly would be --

MR. PRESLEY: Quarterly would be good.

MS. MUNN: -- reasonable from my point of view.

MR. ELLIOTT: We can do whatever you'd like, every Board meeting or --

MR. PRESLEY: No. Every other Board meeting I think would probably do it. Can't really say quarterlies because we don't have quarterlies.

MS. MUNN: No, so the real question here as I see it is will we establish an electronic corral for PERs where we can in our matrix indicate that it's now become a PER, closed for our purposes, and --

MR. GRIFFON: And I think we've kind of done that.

MS. MUNN: -- and have an electronic box for PERS that will be the source of Stu's quarterly report.

What do you think, Nancy?

MS. ADAMS: Well, the question comes is I've not seen the database that's been under development for this group, and the question is where does that field generate from? Does it generate from this group's database and link to Procedures?

MR. HINNEFELD: Which field are you talking about?

MS. ADAMS: A field that would be --

DR. MAURO: We haven't talked about this

yet. In other words we've talked about creating the field in this database that would transfer over to Procedures. In other words we all agree that, yes, for example, the resuspension factor issue is a global issue. There are other places where it keys back to some procedure review, OTIB-0009, for example, on ingestion.

So I think we carried the thought process to that point where we see linkages between what we're doing here and what's going on at the Procedures. What we haven't really talked about is this new window which says, wait a minute, now we have a case where we agree that there's a need for it to be reopened and revisited as part of the PER process. So that would be, if we were inventing the matrix for this system, just like we have a box in Task Three which has abeyance, there would have to be a box now in this thing, which might be a new kind of box, called reopened or reevaluated --

MR. GRIFFON: Or PER.

DR. MAURO: --or PER.

MR. GRIFFON: I think we've said it already.

DR. MAURO: If it says PER, I don't know what happens though. In other words whenever, for example, the case we're talking about now where I think because of OTIB-0012, I think you said, we're going to have to revisit this particular case. Does that automatically mean that this case dropped into part of the PER process?

MR. HINNEFELD: Well, I know this case dropped into the PER process, and there were several. Like Scott mentioned it was actually returned to us for the Super-S Plutonium. So I believe our database will keep track though of the PERs.

There are -- somebody asked is this the only time when this would happen in case we get ^. A PER is not necessarily ^. Frequently, there's new development on the case. The DOL will tell us about additional cancers or additional employment. And that kind of a change, which we had really nothing to do with, it was all done at DOL shop, would cause a compensation change.

MR. GRIFFON: Would they distinguish between what --

MR. HINNEFELD: I believe we can distinguish those. I believe we can keep track of that.

MR. GRIFFON: That's all we need to know.

MR. HINNEFELD: I believe we can keep track of that. I'll have to check and make sure.

MR. GRIFFON: If we can distinguish them then we're all set. And the database we can develop here can have a field that says it's a PER review.

MR. HINNEFELD: I think our ability to keep track of that started with our PER application which did not start at the beginning. It started a few months ago.

DR. MAURO: So in theory we could run a sort. If we had the database in place we could run a sort that says, okay, please list all the cases that we designated as PER, and we'd have a list of cases. And then at that point a status report could be given. What's being done with these? And some of them may fall into a real PER and some --

MR. HINNEFELD: From some date, not from the start of the program. From the date when we adopted our PER application which is, like I said, several months ago. From that date on

we can do that. I'm not sure about our plans to populate the older PERs into that system. I don't know if that's on the agenda or not.

MR. GRIFFON: Let me also say my hope is that on the agenda today would not be the database. I really do think, I think John said, we're done with talking about the technical merits of the findings. I think that's what this Subcommittee's about, so I hope we're not done with that or we can just turn this into a tracking work group.

MS. BEHLING (by Telephone): Mark, this is Kathy Behling. Can I just add one thing before we get off the subject of the database is not to belabor this, but we are, in fact, we have a database just about complete. I'm in the process of testing that database. And this would be a perfect opportunity and time for us to add a field to capture that PER.

That would be very easy to do, and that would give NIOSH the opportunity to go in and sort on the PERs in order for them to make their presentation. So we're, in fact, I haven't shared this with Nancy yet because we're still testing it, and I wanted to be in

fairly good shape for the database before I turned it over to her.

But we're very, very close to being done, and we can introduce that in any format that you want. But that's very easy to do and we can provide that as a tool for NIOSH to use for their presentation to the Board.

MR. PRESLEY: Who would input that data then into the database? This is Bob Presley.

MR. GRIFFON: Who would input what data?

MR. PRESLEY: Who would put that where she's having that new field? Who's going to populate that thing? Is that going to be something that NIOSH does or is that going to be something that SC&A does?

MR. GRIFFON: Well, I think in our Subcommittee process, we're telling them in our resolution column, we're basically saying if it's going to that area, like this one if it's a PER review, it will be identified in this discussion.

And then the question of who edits, I think, is the same question that Wanda has brought up on her work. You know, who has access to changing fields in the database that

I think that would be the same question we have in the Procedures work group. Who's going to be editing when?

So I think NIOSH will have to add responses in, and the same way we're doing in the Procedures work group. Both teams will have access I imagine.

MR. HINNEFELD: I would suspect we would inform the Subcommittee that this case is in the PER. And the Subcommittee would authorize that data entry. And whether we would put it in or SC&A ^. The Subcommittee, I believe, would authorize the status changes.

MR. GRIFFON: You'll identify, who physically, I'm not sure.

MR. HINNEFELD: It's fairly straightforward for us at that point.

MS. MUNN: So, Kathy, this new field you're talking about is in a database that you're setting up for the Subcommittee or another --

MS. BEHLING (by Telephone): For the Subcommittee.

MS. MUNN: Okay, just wanted to verify that.

MR. GRIFFON: Hopefully, a very simple ACCESS database that we can -– invest a lot of

time in.

Anyway, so we're almost up to the first one that Doug identified. Back to the case 105, and I think I finally am up to 5.6. And you said that there's agreement on that, and that's what I have, too.

So then, Doug, take over the next one, 107.4.

MR. FARVER: Okay, 107.4, reviewer believes NIOSH's assumptions regarding internal dose for uranium exposure are improper basically. And then NIOSH issued a response, and then we basically didn't agree with NIOSH's response.

And it really has to do with the type of intake, chronic or acute, and then the intake period, the time period. And we thought it was better to do an acute intake over a longer time period, which I believe was mid-point. I'm trying to find the ^. So what it comes down to it's a difference of how do you choose the intake.

Complicating the factor is there's only two bioassay samples. So you can look at it many ways. It's not a big dose concern because dose-wise it really has little effect.

I mean, it could triple the dose, but you're tripling it from maybe six millirem to 20 millirem.

So it's not a high dose factor. It's more of a method. And I guess we're to the point where we understand each other, but we just disagree with the approach.

MS. MUNN: This is 107 what?

MR. GRIFFON: 107.4, and I think I misstated it in my matrix. I said that we had agreement, but --

MS. MUNN: So that's what was confusing me.

MR. GRIFFON: Right, right, so I'm reading that, too.

MS. MUNN: So that statement in red is inaccurate.

MR. GRIFFON: Apparently, yes. I think I assumed -- we've had this discussion on chronic versus acute so many times, I assumed the chronic was bounding. And I put the words in SC&A's mouth here.

MR. FARVER: Well, I think it comes down to the time period basically. Whereas we chose the mid-point between a start date and the employee's first sample, NIOSH chose a start

date of six months before the employee's first sample, which is one factor that's going to affect the dose.

MR. HINNEFELD: Well, just as an aside because I have not actually seen your response until today. You assumed an acute intake six months before the first sample?

MR. FARVER: That's what you folks do.

MR. HINNEFELD: How far before the first sample was that? How long? Do you know?

MR. FARVER: It looks like two years.

MR. HINNEFELD: What was the magnitude of the intake in order to yield that bioassay sample two years later?

MR. FARVER: That I don't know.

MR. HINNEFELD: Well, I would like us to take a look at it because it could very well have been right. And like you said, it's a small dose, but as a general rule we feel like we are pretty favorable to the claimants in our dose reconstruction techniques. And so if this is a realistic scenario that we didn't encounter, we may want to think about that.

MR. FARVER: Yeah, what it comes down to if it's more appropriate to choose six months, if

it’s appropriate to choose a mid-point, and how do you make that determination.

MS. BRACKETT: There was no explanation given in the dose reconstruction?

MR. FARVER: About why it was chosen as six months? I don’t believe so.

MR. GRIFFON: Yeah, I think the one part we all agree on is it probably has little impact on this case because it’s a small magnitude of dose. But nonetheless, I think it’s in understanding how you’re doing DRs.

MR. FARVER: And then the chronic intake stopped the day of the second bioassay sample, which I don’t know --

MR. GRIFFON: And then he continued to work after that, right? Or whatever, it wasn’t a --

MR. FARVER: It wasn’t a termination sample, correct. It’s more method.

MS. BRACKETT: Right, the magnitude is of some relevance though because if this were closer to 50 percent, then more would be done to look at what was favorable versus what wasn’t. You know, more effort would go into a case that’s going to be, where it’s going to

have an impact.

MR. GRIFFON: Was this a -- I don't even know the POC on this case.

MS. BRACKETT: Well, I guess I don't know.

MR. FARVER: I'm thinking it was about 35 percent.

MR. GRIFFON: Yeah, I think you're right. I saw that in the note.

MR. PRESLEY: That's what you've got in your write-up here is it's 30 –- POC it's 35.

MS. BRACKETT: And as we're talking I was basing it on the six versus 20 millirem. That wouldn't really impact much of anything.

DR. MAURO: So what I'm hearing is that I guess at one point I felt that the way in which you come at these problems, you have bioassay data, a limited number of bioassay data. And then you have to make some assumptions regarding the intake regime that resulted in observing that result.

My understanding was that the approach that was the standard approach was to assume what continuous intake -- correct me if I'm wrong -- what continuous intake would result in your observing that level prior to the time

in which the sample was taken. Or is it that you assume that the intake was an acute intake at one-half the time period between the two points? Or do you do both? I mean, do you check both?

MS. BRACKETT: No, it depends on generally whether the results are positive or not. I mean, standard approach is if nothing is positive, you'd assume a chronic intake over the time in which the person had a potential for intakes, for exposure. And that would be case-dependent.

The DR should look at location of employment, job title, things like that. If nothing changes throughout the employment history, then it should be assumed that it was chronic throughout the entire claimant history.

MR. GRIFFON: I guess that's the question here. Why wasn't it over the entire period?

MS. BRACKETT: Right, and that's why I was asking if there was any rationale given. If you look, sometimes if external dose changes significantly, then you can say, well, it doesn't look like there was a potential. But

there should be some discussion as to why particular dates were selected.

DR. MAURO: This description you just provided, is that written up in one of these procedures?

MS. BRACKETT: I think it's in OTIB-0060. There is some general discussion in that. That's internal dosimetry, and it's just a lot of guidance points for the dose reconstructor.

MR. GRIFFON: Well, I think it is worth, I mean, even though it's a small, minute dose I think I'd like to give Stu a chance to follow up and see if on this case just why. Because the fact that it is a low POC, you'd think that you'd be overly, usually you're overly claimant favorable. I would expect to see the chronic over the entire job period unless there's good reason not to. And then, so maybe we should track that and understand that basis a little better.

MS. MUNN: Well, I'm making a note there that says it's an incorrect assumption here. That SC&A does not agree, and although this does not change the compensability of the claim, Stu will look at this again to verify

the appropriateness of the method used.

MR. HINNEFELD: ^ OCAS ^.

MS. MUNN: I made these notes for myself. I want to make sure I had it right.

MR. GRIFFON: So then we have 107.6, if we can move on to that.

MR. FARVER: I believe we are waiting for a response from NIOSH. We've got a second response. They issued a response. We responded, and then they were going to -- a brief discussion is what it amounts to is why PU-238 was not included in the calculation from environmental doses, internal doses. The initial response was, well, it was less than a millirem, and they didn't need to include it. And we came back with, well, you don't know it's less than a millirem unless you do the calculation, and there were no calculations included.

MR. GRIFFON: Let me give Stu a chance to think about that. I'm going to ask if we could take a ten-minute break. We're having trouble with Ray's equipment. He's getting really bad feedback. I'm hearing it, so I know he's hearing it. So we're going to try

to straighten out that.

Christine, can you tell those on the phone --

DR. BRANCHE: Sure. We're going to take a ten-minute break. It's now 10:17, and we'll get back at 10:27.

MR. GRIFFON: Sounds good.

(Whereupon, a break was taken from 10:17 a.m. until 10:27 a.m.)

DR. BRANCHE: Hello, everyone, we're going to start again. Could someone who's participating by phone please unmute and let me know that you can hear me?

MR. GIBSON (by Telephone): I hear you fine, Christine.

DR. BRANCHE: Thanks.

Okay, Mark.

MR. GRIFFON: So 107.6, Stu, I'm putting that on hold unless you have a response now. I apologize --

MR. HINNEFELD: Well, I can tell you, Scott's refreshed my memory a little bit here. Scott has actually provided me some additional information on this, so I haven't gotten to the Board yet, or to the Subcommittee yet.

And I will provide that. He provided a file with the calculation that shows the dose is less than one millirem. We talked to the dose reconstructor. The dose reconstructor says I think I must have done that calculation in order to say that. I just didn't include the file or say that in the dose reconstruction. So we can, it is, in fact, less than one millirem. We can provide the file that shows that --

MR. GRIFFON: Just to close it out we'll --

MR. HINNEFELD: -- and we all agree it should have been commented in some fashion in the dose reconstruction report.

MR. FARVER: Either that or the file included. One or the other.

MR. HINNEFELD: Right.

MR. FARVER: Or both.

MR. GRIFFON: But we'll take a look at that, but essentially I think it's going to show if we're going to --

MR. FARVER: Well, it wasn't a question of, we were aware that it was a question of millirem, it's just it should have been included, something, some mention of it or the

file.

MR. GRIFFON: I'm going down, the next one I have in the matrix is 110.1 and then 110.2, and they both indicate that NIOSH will provide additional follow up. But I have that for 110.1 as well. And my note says inconsistent treatment of blank data fields in dose records. One is unmonitored versus when is zero. And then it says NIOSH will provide additional follow up on this.

MR. SIEBERT: You're talking about the neutron response, right?

MR. GRIFFON: I have 110.1, which looks likes the photon, and then also 110.2. Is that the neutron?

MR. FARVER: Yeah.

MR. GRIFFON: My note said to follow up on 110.1 as well. Maybe I misunderstood that in my --

MR. FARVER: Yeah, I thought 110.1 had been resolved because based on their response, they went back and recalculated?

MR. HINNEFELD: Yeah. But it looks like we just said, look, you're right. It should have been 15 additional zeros added to the 499 that

we already assigned. So it's a fairly small change.

MR. GRIFFON: Okay, so that one's resolved. And then I have 110.2 is the neutron one.

MR. HINNEFELD: And 110.2 again is in the category where ORAU had provided a response that I've not submitted to the, have not evaluated so that's in a subcommittee. So I guess if I can, I think if, yeah, we do agree that it should have been assigned, the unmonitored neutron dose should have been assigned from '46 to '49, '51, '52 and '57. So during these years we know this person may have worked as a rover in the 100 Area.

So adding the neutron dose doesn't change the compensability because when you start taking out some of the favorability, for instance, there was ambient was added during the years when it really didn't need to be, and so if you start taking the things out, actually the POC over all doesn't change much at all. But that's just ^ response. I still owe you. I'll provide that to the Subcommittee.

DR. MAURO: What site is this?

MR. GRIFFON: Hanford.

DR. MAURO: If I recall though there is some question, the approach used for doing --

And you can please correct me if I'm wrong, Doug.

--That's an issue on the site profile regarding neutron dose. So if you have, not a missed neutron dose, but a person who wasn't monitored but should have been monitored, then you're going to be filling in that neutron dose using some type of coworker model for neutron exposure. One that may be based on some neutron-to-photon ratios or some other factors. And I think that's an issue that's very much on the table.

MR. GRIFFON: That's a site profile issue.

DR. MAURO: But I mean, --

MR. GRIFFON: Which one is this? We've got to find out if this is a missed or unmonitored situation.

DR. MAURO: I think he said it's an unmonitored --

MR. HINNEFELD: I believe it's an unmonitored.

DR. MAURO: -- this is just one-half the

MDL, but unmonitored is coworker model.

MR. HINNEFELD: Right, and the neutron-to-photon ratio is being addressed, and I believe that's --

MR. GRIFFON: In the site profile.

MR. HINNEFELD: Yeah, I know it's in the site profile, but it's more than just the Savannah River site profile. It's also being addressed at Hanford. It's site-wide.

DR. MAURO: This is Hanford.

MR. HINNEFELD: Oh, this is Hanford?

MR. GRIFFON: Yes.

MR. HINNEFELD: Yeah, it is being addressed there.

MR. GRIFFON: But I mean it's in the site profile in SEC review. They're discussing it there, right? So we can, yeah.

DR. MAURO: The only reason why I bring it up is because though you represent it as being relatively modest because you can offset it by reducing some other conservatism elsewhere, our understanding is that depending on how the neutron issue is resolved at Hanford, it may not be so modest.

MR. HINNEFELD: Well, overall.

DR. MAURO: Right, right.

MR. HINNEFELD: But again, if the Hanford neutron approach is changed, then there'll be a PER to address all those.

DR. MAURO: We've got some layering going on.

MR. SIEBERT: But as per the processes that were in place at the time the dose reconstruction was done, we agree they probably should have counted him as an unmonitored worker during some other years and added the neutron dose. But per the timeframe if we had done that, it would have no change to compensability.

DR. MAURO: At that time -- interesting, how do you, okay.

MR. GRIFFON: Just to go back to 110.1 for a second, I was looking at the bottom of your response, Stu, and it says that it should be noted that they expect this claim to be returned for Super-S. So I was wondering for tracking purposes, am I going to put this as one of these that's under PER review, likely under PER review? Is this definitely under PER review or --

MR. HINNEFELD: We're finding out.

MR. GRIFFON: All right. You can go ahead and look at that while we move ahead.

What's our next one? 110.2 is completed, right? Or we're waiting for their response. Then we're up to 114 in your document. I'm just going to scan through the matrix and make sure that I don't have anything else that...

110.3, just stop at 110.3 for a second, Stu. I have a question on the matrix. First of all, I don't have an initial NIOSH response on that one, but then I have a note that OTIB-0054 has been developed. NIOSH will compare this case with OTIB-, or I guess using OTIB-0054. I'm not sure what OTIB-0054 is.

DR. MAURO: Fission products.

MR. GRIFFON: Oh, it's fission products, yeah. So this is a fission product, so I mean, that TIB-0054 is being reviewed in Wanda's work group, right?

DR. MAURO: We did. We found favorably except that our problem is knowing when and who should be assigned those -- think of it like this. When you know, once you say, yes,

we're going to assign an OTIB-0054 fission product dose to this person, the protocol that's been adopted to do that based on, say, gross beta analysis of the urine sample, that, you know, we found favorably, and it's in our report which we haven't reviewed yet but a preview. One of our concerns though is that how do you know whether you're going to, when do you use it. How do you find the people? How do you know you didn't miss some people that you should have given it to that either weren't, didn't receive -- you've got the idea.

MR. HINNEFELD: So then with respect to have we actually redone this with -0054, I don't know that we have.

MR. GRIFFON: I think that's why I have that note in there for this case, NIOSH will compare this case using, you know, that's the question. Is this case, is TIB-0054 appropriate? So it does go back to this case. So I think I'll leave that as an action then, Stu, for you on that.

Then I'm up to 114. And 114.2, actually, I have no indication at all here.

Maybe I just missed it, but I also have no NIOSH initial response on that one.

MR. FARVER: Where?

MR. GRIFFON: 114.2. Maybe that's why we're --

MR. FARVER: We haven't received an initial response.

MR. GRIFFON: Okay, that's in your list. I'm sorry.

MR. HINNEFELD: I don't have it. I haven't been able to provide it yet, but I will.

MR. GRIFFON: And then 114.3 is a neutron thing again, right? Yes, and this is basically location stuff I think.

MR. FARVER: Right.

MR. GRIFFON: In other words 114.3 for Y-12 I think it's determining if a person was in neutron areas and when to assign neutron doses, right?

MR. FARVER: Right, and as I recall the discussion, what it finally came down to was you had a few different tables of listing neutron areas at Y-12, and they weren't consistent. But I believe they represented different timeframes, but it wasn't clear. So

depending on what document the dose reconstructor went to, they would say neutrons were available at this building or facility.

Now, I think our recommendation was just put together one big table that has timeframes on it and buildings so it's all in one spot. And I believe that's been referred to, under Task One site profile reviews. So really there's no further action here.

MR. GRIFFON: Yeah, I did have, my first note says NIOSH to further evaluate this case. But I think we've gone as far as we can here. Is that what we're saying?

MR. FARVER: Right, we've had some discussions on it.

MR. GRIFFON: I mean, is there agreement that it was done correctly? It's just a question of how the site profile is -- I mean, that they're contradicting documents but the bottom line is they got it correct or we're not sure? I don't --

MR. FARVER: It's another one of those iffy situations, and I think really the important part of this is that you come up with a coherent table that lists the items correctly,

those facilities.

MR. GRIFFON: Yeah, this looks very similar to, I think there's one in the seventh set that's very similar to this. Maybe that's where I'm remembering it from reviewing it on the plane.

I mean, we definitely agree to defer part of it to the site profile review process, the neutron locations, looking at that documentation and whether it's appropriate, contradicting, whatever, review it there. Is there any further work on this case? I guess that's the question.

MR. HINNEFELD: I would guess that once we decide what the correct listing of neutrons is, then you'd see if this dose reconstruction complied with the correct listing. So there would be that still to check on once that's done.

MR. GRIFFON: But theoretically, that should be trackable if we're saying this is deferred to the site profile review, then we track it that way. And once we find the outcome in the site profile review, we go back to those and check, right? So, theoretically. So I'm

going to leave it as concluded then for site profile review, right?

MR. FARVER: Yes.

DR. MAURO: In this assignment, like for example previously we -- I hate to go back to this, but I'm thinking about Kathy on the line listening to building this machine -- so it would be designated as transferred to site profile?

MR. GRIFFON: Uh-huh. I mean, I think we have, you know, three now obvious ones transferred to Procedures work group, transferred to site profile, and transferred to PER review. Those are three obvious ones.

MR. FARVER: Now, if this new list of locations and years comes up with maybe some new facilities or dates when this employee was working at a facility, well then it would impact this case.

MR. GRIFFON: Yeah, and then that's when we'd have to look at how the site profile review team assessed that. What makes me nervous on these is that that site profile review team, I know it well because I think I chair that work group. And we haven't met

since the SEC was over. So it's hard to get, you know.

DR. MAURO: And we're not going to get the records sold up with the classification so... It's amazing how they all confound and come together.

MR. GRIFFON: We're not going to solve that here. Let's just move on.

And I have 114.5. Did you have that one as your next one or no?

MR. FARVER: We had 114.4, but we agreed to their response.

MR. GRIFFON: Oh, okay, that's good. Agreement on that one.

And 114.5. This is more substance here.

DR. BRANCHE: We closed 114.4 at the last meeting.

MR. GRIFFON: Right.

MR. FARVER: 114.5, they issued a response, and then we issued a response. And we had talked about it, and I believe we're waiting for something from NIOSH.

MR. GRIFFON: And that's what I have. I had SC&A provided a follow-up response on, I left

out the date.

MR. FARVER: And it has to, just to summarize it, the employee submitted 50 urine samples over a certain time period, but when they assessed the dose, they used coworker data. Didn't feel it was very appropriate to use coworker data when you have actual data.

MR. GRIFFON: And it looks like a fair amount of actual data, yeah.

MR. FARVER: Well, 50 samples.

MR. SIEBERT: Is that 114.5?

MR. FARVER: 114.5.

MR. SIEBERT: I see CATI information considering X-rays and incidence --

MR. GRIFFON: Oh, we have the wrong number.

MR. SIEBERT: -- 114.5.

MR. PRESLEY: Well, you go down into this in this SC&A response, and it picks that up.

MR. GRIFFON: That's right because in the top of yours, you indicated we agree with the X-ray part; however, the other part is the question.

MR. FARVER: I think when I started going back and looking at your response, that's when I found out they were using coworker data.

MR. HINNEFELD: I think we should have another response coming that I haven't sent to the Subcommittee yet.

DR. MAURO: Was this denied? Using coworker data when there were zeros. My assumption is you would probably overestimate it.

MS. BRACKETT: Is that the case? Was it all zeros?

MR. SIEBERT: No.

MS. BRACKETT: I wouldn't have thought it was.

MR. PRESLEY: Every now and then you're going to get something like this.

MR. GRIFFON: On page 11 you show some of the data anyway, right? You've got excerpts of part of the data. Anyway, okay, so I'll highlight that one for further follow up.

DR. MAURO: Just for my own edification, when it's convenient to automatically, let's say, trigger a workbook that assigns coworker automatically, and you know that by doing that you're going to overestimate the intake for a person who may have had a few, or in this case not so few, urine samples. Would you do that as an efficiency method when you know that the

person's going to be denied anyway? What I'm asking is, is it possible that this happened because it was an efficiency method.

MR. SIEBERT: It may have.

MS. BRACKETT: Right, that's what I was wondering because this is something that we've discussed a few times that we have talked about, although in the case of people with all negative results that you could assign coworker in place of them. Because I looked at the coworker results versus the MDAs. But it kind of jumps around for different sites, so we kind of rescinded that as a blanket.

It could be done on an individual site basis if the DR looked at what the MDA for the method is versus what the coworker results are. So it's not a generic, blanket efficiency method, but it could be used if that comparison were done and that would be claimant favorable.

DR. MAURO: And that would be a judgment made by the dose reconstructor at the time. I guess he would just have to explain that in the dose reconstruction how he did that.

MS. BRACKETT: Yes, it's probably something

that I should do on the generic, on a site-by-site basis, and issue guidance to the DRs. But right now it would have to be on an individual dose reconstructor basis. And for Y-12 I think that we probably are above the MDA for the coworkers. So in general it would be claimant favorable.

DR. MAURO: Sure, without a doubt.

MS. BRACKETT: Of course, that's depending on, well, if the person's results were all listed in ^.

DR. MAURO: All what his results are, of course.

MR. GRIFFON: So we're on to our next one. 117.1 is the next one, and I'm just going to check through the matrix. If anyone sees anything else before that, let me know.

(no response)

MR. GRIFFON: Okay, then, 117.1 it is. And basically, I think NIOSH is supposed to provide a follow-up response on this one.

MR. FARVER: This one?

MR. GRIFFON: Yeah.

MR. FARVER: No, this was one that we responded back to and this is one -- where are

we at?

MR. GRIFFON: 117.1.

MR. FARVER: I'm sorry. I'm ahead of you. No, I believe we talked about this and concur with their response.

MR. GRIFFON: Okay.

MR. FARVER: Really what it comes down to is they were told to get it done and follow their directive.

MR. GRIFFON: Explain that to me. I have a little note here that I don't understand, truncated it to 25 percent. I'm not sure. I'll take that out, but I want to understand why I put it.

MR. FARVER: I don't know what that note means. Response was about, should have been referenced, and an OTIB should have been referenced. And NIOSH comes back with they were issued a letter, oh, OTIB-0033 was published, completed in May and published in April. Dose reconstructions done in May and OTIB-0033 was published in April. So it's closed.

MR. HINNEFELD: Yeah, I believe this was when, you know, prior, this was about the time

we issued our ^ the DRs that are two years old ^ using the techniques available. And so acting in accordance with that instruction there were some, they essentially pulled this OTIB-0033 approach which they'd been kicking around, but maybe the dose reconstructor you know with the time he originally drafted it didn't know if it was going to be available or not, so he just went ahead and used the approach without referencing the OTIB. And so the timely proximity thing and was related to our direction to go do these cases now.

MR. SIEBERT: And it's a comp case.

MR. HINNEFELD: And it is a comp case.

MR. GRIFFON: It is a comp. I think my reference was, it says something here that a smaller fraction of the TIB-0018 intakes were applied than recommended by TIB-0033.

DR. MAURO: You used 0.25 as your adjustment factor? I heard 25 percent. So you applied the 25 percent to the MPCs.

MR. HINNEFELD: And it's still compensable.

DR. MAURO: And it's still compensable.

MR. GRIFFON: Right, that why I knew it made sense at one point.

Moving on I have 118.1 as unresolved. Is that --

MR. HINNEFELD: I have received those initial responses from the contractor, but I haven't reviewed them.

MR. GRIFFON: All of 118, actually, right?

MR. HINNEFELD: Yes.

MR. GRIFFON: So they're on hold still.

Then 119.1.

MR. FARVER: 119.1 basically, well, there was a little concern regarding, I guess, work location and how that affects the photon energy distribution and things like that. And NIOSH went back and recalculated, and even though it did increase slightly, it was already a compensated case.

MR. GRIFFON: Okay.

MR. FARVER: And I think this goes back to the question of if it's a compensated case, how much detail do you go into in a worker's location.

MR. GRIFFON: All right, so we have SC&A agrees on that one. And let's just look at the rest of the matrix and make sure there's no other ones. I have this, and I remember

Larry did this at the last Board meeting, but I have this note about NIOSH will present on the QA program. And I know you gave us an initial presentation. I'm not sure if I need to keep that in this matrix or it doesn't make sense to hold it there necessarily unless it's going to be, were we intending on something happening in looking at the -- I don't know. It made sense for the one meeting.

MR. ELLIOTT: We presented our Q and A a number of times but in great depth and detail at the last Board meeting, and until we have either some new information, trends to report or some new QA/QC things that we're thinking of implementing, I don't know that I have plans to speak about QA/QC until that happens.

MR. GRIFFON: I think I'm going to delete those as outstanding actions. I don't think they belong there anymore so I'll just get them out of the matrix.

And 119.3 I think it refers back to 119.1, right?

MR. FARVER: Right.

MR. GRIFFON: There's agreement on that, too.

And 120.1 I did have NIOSH agreement, but you would review the language in the DR report. I guess that's sort of standing out there as an outstanding action, and should it be is my question.

MR. FARVER: 120.1?

MR. GRIFFON: Yeah, 120.1.

MR. FARVER: Oh, I see. And I think this goes back just to their template they use in the wording of that. They have a dose conversion factor effective, and it kind of implies if their effective dose conversion factor is the one they actually used to multiply by, but it's not actually true especially when they do these Monte Carlo calculations. So that's where they were going to look at the wording.

MR. GRIFFON: And I think when I say that, NIOSH will review language in the DR report, I think it means DR report template, right? Like not this specific DR report, but the DR report template. Now is that something we are going to follow up on in the Procedures work group? Got to keep Wanda out of trouble, you know? I'm clear on my findings, Wanda. I

don’t know what you’re doing over there in the Procedures work group.

MS. MUNN: Is there any reason to transfer this to Procedures?

MR. GRIFFON: Well, that’s what I’m asking. The DR report --

Stu, this has come up as early as the first set of cases I think, and you said there’s been some changes to the DR report, but you haven’t incorporated all of them I don’t think, or it’s been kind of an evolving thing, right?

MR. HINNEFELD: Right, we’re back on that. We’re getting close to having a new template for dose reconstruction.

MR. GRIFFON: But the template is not necessarily the --

MR. HINNEFELD: But the language --

MR. GRIFFON: -- it’s not a procedure.

MS. MUNN: It’s not a procedure. Remember, in Procedures we look at procedures that have been given to SC&A for review, and this is not, in my view, a procedure that’s been given to SC&A for review. Therefore, it’s not appropriately transferred to Procedures.

MR. GRIFFON: Right.

MS. MUNN: This is the place to track it.

MR. GRIFFON: You're off the hook, but now I need a home for it. That's what I'm asking. Where, you know, I don't want to lose it because I think it was, it's come up in a number of cases that we've looked at. And we want to make sure that we go back and say, okay, if the changes they made reconcile what we brought up in our initial findings, so where do we, it's not a site profile. It's not a procedure.

MR. ELLIOTT: And the issues brought up in the findings have been lack of clarity --

MR. HINNEFELD: I'm trying to make sure I've got this one clearly. This has to do with the nature in which the dose is reported to the claimant, correct?

MR. GRIFFON: Right, right.

MR. HINNEFELD: And actual number that's reported in versus the actual number that shows up in the dose reconstruction.

MR. GRIFFON: Correct, yes.

MR. HINNEFELD: Well, I believe this will be fixed by the new template because we

essentially avoid all that in the section that's intended for the claimant. You just tell the number without any of those DCF values and ICRP adjustment values or any of that stuff. They just tell them the number.

MR. GRIFFON: Well, there's a number, you know what I'm saying, there's a number of these that have come up like the --

MR. HINNEFELD: I know this goes back --

MR. GRIFFON: -- yeah, there's incidents listed in the CATI report. You didn't acknowledge it in the DR report. I know you've taken care of those. Now you do acknowledge it.

MR. HINNEFELD: There are some --

MR. GRIFFON: Well, we've never looked back at the revised template.

MR. ELLIOTT: I don't think we've given you one to look at.

MR. HINNEFELD: It's close to being done. We've got a couple questions to resolve with ourselves about -- see, we're going to have to send the claimant a package that we think will be informative that responds to a number of things and some of which came up in Procedures

review when they were talking about CATI and the kinds of information that's available to the claimant. And so as I recall --

MR. ELLIOTT: And informative to various audiences, not only the claimant.

MR. HINNEFELD: -- and so we're trying to write a section that will be informative to the claimant in essentially layman's language, and then a different section for technical reviewers. Now, whether we actually, you know, the question, the most recent question that we haven't really resolved is does the technical section really need to go to the claimant or can it just ride along to the end person of the administrative record or the analysis record for the case so it's available for all the reviewers and people like that.

But do you really want to send something that's going to be an Excel spreadsheet probably that's multiple pages long --

MR. ELLIOTT: And we could notify the claimant, and they could ask for this.

MR. HINNEFELD: Oh, we would certainly tell them that.

DR. MAURO: We talked about this during the OTIB-0090 or -0097 review which had to do with first it was the CATI, and the other was close out. And it was agreed at that time around the table I recall, no, you don't want to send this stuff that makes it worse.

MR. HINNEFELD: So we have to ensure what we, you know, what we send, there are certain things in the regulation that the dose reconstruction has to contain. The regulation lists certain things that will be in the dose reconstruction. So we need to make sure that we've included that in what we send to the claimant. But other than that I think most of the technical information we think we would prefer to exclude. It makes a more manageable package for the claimant, and it eases some of the minutia of building the package on our side as well.

DR. MAURO: And I think the Procedures work group came to that same conclusion.

MR. GRIFFON: Well, I mean, I don't mind actually since this is the DR Subcommittee, it may make sense to just have this subcommittee review the final template and keep that here

as opposed to transferring it to Wanda. I mean, I think we can keep that here and not have, I was really just looking for a home because that's come up a number of times.

MR. HINNEFELD: I'd say it's good as most.

MR. GRIFFON: All right, so we'll do that.

MR. ELLIOTT: Just a little more background though. We've been talking about revising the dose reconstruction report that claimants get for about two-plus years now, and we've put a lot of effort into that revision, probably 18 months ago. But then because of resource constraints that we have faced for the last year and a half, that has been a low priority. It's also a big retooling, big retooling effort because a lot of the report itself is in --

I don't know how you say it, Scott.

-- but it's electronically developed and to revise the whole structure of the report requires a retooling of that whole process. And so when we flip the switch on this, we've got to have the retooling effort behind us so that it will all work fine. And we're struggling to get there. So as soon as

we get there, we'll give you, give this Subcommittee the format, and you can tell us what you think.

MR. GRIFFON: I'm just making a note for myself for Kathy on the phone and John, this item will stay with this Subcommittee.

Kathy, did you get that?

MS. BEHLING (by Telephone): Yes, I did, and I think that's a good idea. Let's leave it with the DR Subcommittee.

MR. GRIFFON: And if you're looking through, Kathy, if you see things here that you don't think have a home right now in terms of the way you're looking at designing this database, I really don't want to go down the database discussion, but bring those up if you see something like where's this going to go. Let us know.

MS. BEHLING (by Telephone): I will, and I have not come across any of those yet. I think we have the database pretty well organized.

MR. GRIFFON: Okay, good.

120.5, we're almost done with the sixth set here. 120.5 I have NIOSH to provide

IMBA run for this case.

But you didn't have that, right? So just checking that. Maybe I'm wrong on that. Yeah, I think it carries through to the next couple, too, yeah.

MS. BEHLING (by Telephone): This is Kathy Behling. I have also in my notes that we've questioned whether we got those IMBA runs, but I believe we did get those. In fact, I have written down here back in September of '07 we received those. And I think we looked at them, and we agree with NIOSH's response.

MR. GRIFFON: I'm going to put NIOSH provided IMBA runs and SC&A -- you reviewed them already? Because I don't --

MS. BEHLING (by Telephone): I believe we did, but we should go back and look.

Doug, am I jogging your memory?

MR. FARVER: I'm sure I reviewed them, but they were sent.

MS. BEHLING (by Telephone): Yeah, they were definitely sent.

MR. GRIFFON: Well, I'll put a placeholder on it for now. You don't have to guess that you did or not.

MS. BEHLING (by Telephone): We'll look at those again.

MR. GRIFFON: Okay, and that carries through the next couple as well or the next one. And I think that's it for the sixth set unless anybody has anything else.

(no response)

MR. GRIFFON: All right. I got a little note from Ray which I think is a good idea for lunch at 11:45. He's running the show here, so I'm fine with that.

SEVENTH SET OF CASES MATRIX

I think we can at least get a start on the seventh set and work for about a half hour. Let's get a start on the seventh set. And did everybody get this matrix, or most people?

Now this one, again, this is our first --

DR. BRANCHE: A couple people didn't get the matrix.

MR. GRIFFON: I'm sorry.

DR. BRANCHE: When did it from Kathy?

MR. GRIFFON: This came from Stu actually.

MR. HINNEFELD: I sent it on June 2nd.

DR. BRANCHE: I've got it. Who needs it

because I think I have it. Nancy needs it. Who else needs it electronically?

(no response)

DR. BRANCHE: Is it just Nancy who needs it?

(no response)

DR. BRANCHE: Here it comes, Nancy.

MS. BEHLING (by Telephone): I recently sent out the eighth set. We're not quite there yet.

DR. BRANCHE: Okay, Kathy, I did not get your copy of the eighth set. I don't have an e-mail message from you.

MR. GRIFFON: I don't think we're going to get to that today anyway.

DR. BRANCHE: Well, I'm just saying, I understand that.

But, Kathy, I should be getting a copy of what you have, and I don't have one.

MS. BEHLING (by Telephone): Yeah, I think John had forwarded, but I'll send it again.

DR. BRANCHE: I have it then, excuse me. I have it. Yeah, he noticed that I was left off. I got it. Thank you.

MR. GRIFFON: This starts off as 121.1, and the first couple we actually don't have NIOSH

responses, right, Stu?

MR. HINNEFELD: Correct. The first two cases --

MR. GRIFFON: Or at least pending.

MR. HINNEFELD: -- one's Aliquippa Forge, and one's Simonds Saw and Steel. Several of the comments address essentially the site profile. The site profile is ^. And so those I did not respond on because we have some initial responses, but we still need to work them internally to make sure those are the responses we want.

So some of these I believe I put down what I believe are global issues that have been previously identified that we could just transfer, put on the global issue list enclosed in that format. I mean, there's ingestion, visual --

MR. GRIFFON: And I see those coming up down there in 121.4, .5, .6, good time to global issues.

MR. HINNEFELD: To the best of my recollection. If I am wrong, I'll be glad to...

MR. GRIFFON: In these kind of cases my

sense is that these are what I've termed sort of mini-profile reviews, mini-site profile reviews. But I think they probably stay here unless they -- I don't know. I guess we could make a judgment with the Subcommittee members. If they become too large, maybe then we recommend to the Board that we establish a work group to look at it, you know. But at this point I think we're trying to handle those sort of in this Subcommittee.

MR. HINNEFELD: Well, certainly since there are no work groups assembled for Simonds Saw and Steel and Aliquippa Forge.

MR. GRIFFON: In other words what I'm saying is we're not just going to transfer them to site profile review issues.

DR. MAURO: It doesn't exist.

MR. GRIFFON: Because there's no where to go with it, right. It's here. The buck stops here.

So for the first couple, Stu, you're still reviewing those, right?

MR. HINNEFELD: We've done some work. We've got the initial responses. I just want to make sure we're happy with where we're going

to go and what we're going to say.

MR. GRIFFON: And then the 121.4, .5 and .6. The only difference here is that you've really put a resolution in the response column, right? I mean, essentially you're saying this is going to that global issue.

MR. HINNEFELD: It could be, could be.

DR. MAURO: The only --

MR. GRIFFON: That's fine. We understand.

DR. MAURO: There are some places -- I went through, and when you get to 121.4 certainly this business of breathing rate is a global issue. But I'd like to just point out that the reason we brought this up was I guess this person was a furnace operator, and based on the information provided.

And under those circumstances, and whether you call this a global issue or not, when a person has a job category that would appear to be of a unique nature where the generic assumptions such as the ones in the ICRP, the 1.2 cubic meters per hour, may not apply. When I see furnace operator, it automatically triggers in my mind that's a pretty, that's a job category that has a lot

of exceptions to it in terms of the potential for being exposed to airborne dust loading, the breathing rates.

What happens is the site profile, which is really universal, all of a sudden you guys are, hold the presses a little bit. This guy might require a little special treatment. And I think when all is said and done that's what's really the recurring theme in many of the comments related to this Aliquippa Forge person, in that being the furnace operator and doing the things that he did. I guess I paused a bit and said, listen, is there any aspect to the site profile where I felt maybe was a little too general when applied to this person.

MR. GRIFFON: It seems like this case might be that individual that, that hypothetical individual that we often talk about when we're looking at the 95th percentile saying, if you had that guy that had the real dirty job. Maybe this is that example, and you're saying you want to make sure to --

DR. MAURO: Yeah, I want to make sure. And I'd like to also point out one of the

recurring themes again -- because we can go through this quickly, but it's important -- is the site profile itself draws heavily from data gathered in the 1970s, 1978 basically, whether it's residual radioactivity on surfaces or is external exposure, but you're applying that data to a person that worked there in the 1950s.

And so again, it's one of these recurring comments. Can you really do that 20 years earlier and whether or not, especially if you don't use the 95th percentile. I noticed that you went with the median for the measurements made in 1978 and applied it to this person who was a furnace operator, which right off the top, you sort of push him at the high end plus 20 years earlier. So we had some significant concerns in the way in which you developed Aliquippa Forge.

MR. HINNEFELD: And like I said, we're trying to develop responses. We want to make sure we get technical response, and it may involve providing the site profile in some fashion.

MR. GRIFFON: That's good to have on the

record. I mean, we want to understand the nature of the finding though, so thank you.

DR. MAURO: There is no sound bite on this one.

MR. GRIFFON: It's not simply those same generic issues we've always had. It's a little more to it.

DR. MAURO: There's more to it, yeah.

MR. GRIFFON: So then are we, now 121.7 is kind of a unique one, but I haven't seen much of the four, I mean basically --

DR. MAURO: They addressed it though. In the response they re-did it, took out the smoking and it still didn't change much.

MR. HINNEFELD: We put it in the most favorable category, and it didn't change the outcome. This will happen on occasion when we get conflicting information from DOL on smoking, and there's usually some communication between our staff and DOL to say, hey, you got to tell us, one. Which one is it?

And so I don't know if that occurred in this case, and the DOL said, okay, this is really it. I didn't look to that

communication stream to see if that was done or not or whether it was just our staff that saw a designation and put that one in without realizing there was conflicting information. I don't really know what the case was on that.

MR. GRIFFON: I'm tempted to say here that SC&A's in agreement, but I think it sort of depends on those other findings, right?

DR. MAURO: Yes, that's --

MR. GRIFFON: Yeah, because it doesn't impact the case, but if everything else changes, yeah.

DR. MAURO: But then that maybe will trip it. Because I want to point out, we did walk away from this saying that he could easily have come up with a dose a hundred times higher for this guy. And then maybe all of a sudden the smoking does make a difference.

MR. GRIFFON: Right, okay, so I think we need to wait on all the responses then. And just to look at the last one, oh, that's kind of a summary. That's your point.

DR. MAURO: That's what I just said.

MR. GRIFFON: Okay, let's go on to 122 then.

DR. BRANCHE: Point one?

MR. GRIFFON: Yeah, 122.1.

DR. MAURO: This is Simonds Saw.

MR. GRIFFON: Yeah, this is Simonds Saw.

DR. MAURO: Your first response, let's get to conceptually, in effect, at Simonds Saw the external exposure from airborne dust and stuff that's on the ground the way in which the doses are determined, it turns out they were hanging 20 film badges, which is good, to get an external radiation field. And I think you used the full distribution, the median.

This guy again, I think he was a furnace operator also. My only comment was given that he was a furnace operator, from previous experience, these people usually are handling a lot more contamination. They're shoveling this stuff into the furnace, this scrap of the uranium. So I guess my reaction was maybe you should have used the 95th percentile for this guy as opposed to the mean or the full distribution that you got from the hanging film badges. That was a suggestion.

UNIDENTIFIED SPEAKER (by Telephone): Hello?

DR. BRANCHE: Hello. This is the Subcommittee on Dose Reconstruction.

(no response)

DR. BRANCHE: Michael Gibson, can you hear us?

MR. GIBSON (by Telephone): Yeah, I can still hear you, Christine.

DR. BRANCHE: Okay, good. I just wanted to be sure we didn't lose, perhaps it was a wrong number. Sorry for that.

MR. CLAWSON: Saved a lot on my insurance though.

DR. BRANCHE: But we don't have a little gecko walking across the table here.

MR. GRIFFON: So I don't know who was speaking.

DR. MAURO: Again, because he's a furnace operator, would you want to go with a more, a higher end external submersion dose. Even though, by the way, it's not an important contributor compared to the other --

MR. HINNEFELD: Right, there's another dose component in here working in proximity --

DR. MAURO: Without a doubt, and that dominates.

MR. HINNEFELD: -- and that dominates it. So we felt like this was an appropriate

approach. I understand where you're coming from on, does one size fit all work or some of these guys, really the 95th percentile guys, yeah, we try to build these models so they're favorable for the 95th percentile guy. And so overall we felt like this was appropriate and the overall dose assigned is favorable for the 95th percentile guy so that he's covered by that.

So that's kind of our approach on building these models. Now whether you take a particular data set which, as you say, is not an important contributor anyway, and you apply this distribution, that seems to me to be a relatively unimportant thing to try to sort out. I think overall we're favorable to the person anyway.

DR. MAURO: Well, I don't know if I would entirely agree with that because, well, we can get to the other issues where I believe he was, if I remember, he was the person that was being -- the generic approach is the rods and the billets, right? He was a furnace operator where they loaded basically billets.

I don't know if you want to -- see,

I'm talking -- are you okay with --

MR. GRIFFON: Yeah, yeah, we can move on. I mean, I think this first one is, I think we have to still answer this and look at this model as a mini-site profile review now, I mean, in this group still. So we'll leave it there for now.

DR. MAURO: That's what it is. That's what it is. That's what we're really doing.

I mean, Simonds Saw is in excellent shape in terms of having lots of data, lots of very good data. Now the question is applying that data to this particular worker and is there anything about this worker that really maybe you want to tweak it a bit. And the first place comes in with this submersion exposure whereby you use the full distribution for a furnace operator.

As I said, that's not going to really change the dose very much for the reasons we'll talk about in a minute. There are other sources of external exposure that dominate. But nevertheless that's a comment. That would be number 122.1. So I'll leave that with you.

MR. GRIFFON: Well, then you're moving on.

DR. MAURO: Let's move on now, yeah. I want to move on.

Now, 122.2, I want to withdraw that. It had to do -- I don't think that was a good comment on SC&A's part. It had to do -- I don't know if you all recall OCAS one, Appendix B, there's a dose conversion factor problem that's sort of a chronic problem. But that really only applies when a person's wearing a badge. But if you have film badges suspended, and it's not on a person's body, the problem goes away. So I'd like to withdraw 122.2 for that reason.

122.3, here we have a situation where I would consider the approach that is used in the site profile for determining external exposure to a worker, what was done is they said here we have a worker, every worker is assigned this. And he spends three and a half hours per day up close and personal to a billet and another three and a half hours per day up close and personal to a rod. And it's a single billet and a single rod, three and a half hours each.

Now I said, okay, that's certainly I

think one foot away, so as far as I'm concerned that is very conservative, very much a bounding scenario except maybe for the furnace operator. Because, see, what happens is the furnace operator's probably up close and personal only to billets. The billets are the things that come in that you have to heat up. Then after you heat them up they go off and they get rolled, and then you get rods. He's not up close and personal to the rods. He's up close and personal to the billets.

Now, the billets are bigger than rods, and the doses from the billets -- so in reality, this guy probably really wound up one foot away for seven hours a day to billets as opposed to half and half between billets and rods. And that does jack up the exposures a little bit, 25 percent, not a lot.

But then another thing, now I'm not too sure how this works though. I think he would be up close and personal to more than just one billet at any given point in time. In other words the process of putting these things in the furnaces as I understand -- I was talking to a guy who's familiar with this

-- that there may be multiple billets that he's up close and personal to.

So where I'm going is that I could see if you were going to tailor your analysis to this guy. Again, I'll say it again. This approach certainly is claimant favorable for the vast majority of workers. But maybe for a person who worked with the furnace operator now we're talking external exposure. I would have considered possibly him being spending most of his time close to more than one billet and in effect going the route of the approach taken in Bethlehem Steel where what was done there is they used a semi-infinite slab.

In other words you could almost see the difference. In one case you have this guy that's standing next to a billet. In Bethlehem Steel they've got him standing next to basically an infinite, semi-infinite slab of uranium. And I think it has a maybe factor of two effect on the dose.

I don't know if that's important, but I think that it seems that there's a breakdown in parity between the way in which you approach the problem for Bethlehem Steel, and

the way you approach the problem for Simonds Saw. And it's of particular relevance here because the guy's a furnace operator, and I think in his case the Bethlehem Steel strategy might have been a little bit more claimant favorable. And we're talking about on the order of a factor of two in the dose, external dose.

MR. PRESLEY: John, can I say something about your hypothesis?

DR. MAURO: Uh-huh.

MR. PRESLEY: A billet of uranium is rolled about 800 degrees C. And there is nobody going to stay very close to a billet, a foot away from an 800 degree C billet. I mean, he may go in with something and check it and back off. Nobody.

DR. MAURO: So you mean after the heating process is over, see, I was envisioning racks of billets that he's putting into the furnace.

MR. PRESLEY: You put them in, but there's no way in the world you're going to stay that close.

DR. MAURO: Going to stay there after they come out, yeah. I may have, I created a

little picture in my head of what I think it might look like. I'm envisioning the billets show up for a rolling, and they show up and one of the first steps is you get them, you want to heat them.

And so I'm picturing a room where billets are stored for being put through the furnace. And when they come out of the furnace, they go off to the rolling operation. So I had a -- now I might be wrong. I had a picture that there may be open billets sitting in the room where this guy is before they went in -- I agree. Once it comes out, the temperature of this thing is off the charts, and they handle them with prongs at a distance.

MR. HINNEFELD: I guess our general view on the uranium dose model, and it probably has recurred in a number of ways in a number of manifestations, is that we are quite generous with our modeled time and the proximity, how long they spend, how close they spend, which to us provides a high estimate on doses in our dose model. We believe we are consistently assigning high doses for uranium dose modeling

because largely because of the proximity assumption.

So rather than to debate a lot of times what is the particular dose rate and what dose rate, you know, should you be at the 95th percentile or 50th percentile, and what exactly are the components of the radioactive material that contribute to the dose rate, and the impurities in the uranium that would contribute. We feel like that's all essentially dealt with by the proximity and the favorableness of the proximity and the time.

And that's kind of a theme. I think you'll see that over and over. And if you would look at dose rates assigned from our uranium dose models versus doses measured, you know, historically at the Y-12 plant where it was full of uranium, or at Fernald that was full of uranium --

DR. MAURO: You don't see that, yeah.

MR. HINNEFELD: -- you don't see measured doses where they were monitoring people who worked around a lot of uranium all day long that even approached what we assign on these

AWE models.

DR. MAURO: See, one of the things that happens to me is I see all these AWE calculations, so I'm very familiar with them. Now, right here you're assigning 0.7 MR millirad per hour and 0.285 for the one for the 0.7 is for the billet. 0.285 is for the rod. However, in Bethlehem Steel you assigned 2 millirad per hour, ten times higher than a rod.

Now I say to myself, is there any reason why you would assign workers at Bethlehem Steel an external dose rate that's ten times higher than what you're assigning at -- and I can't, and to me I say there's a breakdown in parity here.

MR. HINNEFELD: Now let's also be a little careful on parity because we have, our technical understanding and our technical approaches do evolve over time. And so I don't know that it's true that every case is going to be performed the same way in perpetuity. There may be new information becomes available, new ^ become available, and so there are changes to technical approaches.

And when the technical change approach changes doses up, we've got a PER and we go back we consider claims. But when that technical approach more fine tunes a dose, and it goes down, then we don't back to PER. We don't go try to take money away from anybody. We don't do anything like that. We just say, okay, we feel like we have a better technical, more defensible technical approach now. We're going to use that from now on. Versus this is really favorable than we used earlier on, but we didn't have as much information as we have now. So certainly I'm sensitive to parity for this program, but I think when you're thinking of what has to happen, what happens temporally through this program, it's really careful. Otherwise you're tied to the first approach you ever got.

DR. MAURO: I understand. I understand.

MR. HINNEFELD: Anyway, that's just where we come from. And also, because there is some big GSDs on these dose numbers. These GSD numbers, you know, the 95th percentile goes well above 2 millirad per hourly.

DR. MAURO: Yes, it does. Yes, it does.

MR. GRIFFON: But I think we can, I mean, I think the model, we need to re-examine a little more closely and make sure, I guess, for the question of this particular worker, is everybody satisfied that it's bounding for this situation. I'm curious about the proximity question that Bob raised, and you raised. So I think we want to look at that on the mini-site profile side of this. But I mean, this is really getting issues on the table more than resolving at this point.

MR. HINNEFELD: Yeah, in fact, I didn't really expect to resolve very much here. I just kind of thought I'd just put out a response.

DR. MAURO: Well, this is the first time we're engaging a site profile as part of our DR review process. I don't think we've done that before.

MR. GRIFFON: Right, right. That, too, yeah.

MS. MUNN: So this case is going to be revisited?

MR. HINNEFELD: Well, we have some things to, I think there's some stuff that we need to

concern ourselves with about the two site profiles we're talking about, Aliquippa Forge and Simonds Saw and Steel. And so we need to look at these as site profile-type comments, and there may be additional responses.

DR. MAURO: Yeah, I would say that in looking at it, too --

MR. HINNEFELD: We may need some more information from you as well.

DR. MAURO: -- Aliquippa, I have some problems, what I call more fundamental problems where you use the 1980 data, '70 data. I mean, that really goes to, I would say not that the doses are very high, but that whole strategy is very questionable, and it comes up many times. In this case I think the Simonds Saw site profile is very good. What I started to question as --

MR. HINNEFELD: That's what we're saying, Super-S operator -- so is one-size-fits-all really appropriate? And is it sufficiently, is our one-size-fits-all sufficiently favorable that it covers the 95th percentile?

DR. MAURO: Yes, exactly.

MR. GRIFFON: Anything else on 122 that is

new to bring up, John?

DR. MAURO: 22.4, that's, I agree, that's a global issue. This has to do with a resuspended issue, ten to the minus six resuspension factor. We're back there again.

MR. GRIFFON: So there's no --

DR. MAURO: Well, especially applicable. I mean, picture this guy shoveling this stuff. A resuspension factor of ten to the minus six you see in relatively quiet settings indoors. Now I'm picturing this guy, now, as a furnace operator, I know he's loading billets. Whether or not he's loading residue, because I know one of the things you do is you roast some of the cuttings that come off the, when you cut the processes away to avoid fires.

You know, we ran into this when we talked about Bethlehem Steel. You got residue. So if he's not only loading billets and heating them up, but he's also shoveling residue of uranium that is being oxidized so that you don't have a fire, then all of a sudden I'm picturing a pretty, an environment where there's a very great potential for dust generation. And a ten to the minus six

resuspension factor is not going to --

MR. GRIFFON: But this seems like this is -- correct me if I'm wrong. This seems like this finding is related to the residual time period, right? After the work would have been done, and the guy would have been still working there, but it was a residual exposure? Am I wrong?

DR. MAURO: I think that was Aliquippa, not Simonds Saw.

MR. GRIFFON: Oh, on 122.4 I'm asking because the --

DR. MAURO: No, I think --

MR. GRIFFON: -- it says resuspended residual uranium.

DR. MAURO: No, residual uranium doesn't, there's the residual time period, but there is --

MR. GRIFFON: I'm trying to understand what you meant by residual uranium.

DR. MAURO: I'd have to go look at it, but there is a distinction. In other words, there's the uranium that's airborne during operations because you're rolling it. It's flaking. It's becoming airborne. Then there

is, at the same time, there's also uranium that's on the ground that falls down, and that's residue, but it's during operations.

MR. GRIFFON: I understand your distinction. I just don't understand what you meant in this finding.

DR. MAURO: And I've got to check myself.

MR. GRIFFON: Because usually when we say residual, we're talking residual time period or we often have, so --

DR. MAURO: If it's, you know, nevertheless -- stay with me for a minute.

MR. GRIFFON: My question would be on this, do you have the same concern that you did in the Aliquippa?

DR. MAURO: Yes.

MR. GRIFFON: Did they use monitoring from a later time period to back calculate or is it current information or what data was used?

DR. MAURO: The activity on surfaces here I'd have to go check. I'd have to check. Remember, you did have data from --

MR. GRIFFON: From the time period.

DR. MAURO: -- from the time period at the time.

MR. GRIFFON: Not 20 years later.

DR. MAURO: Yeah, and my concern was that the resuspension factor was not the one I would have expected to see. But you're right, I'd have to go back and look at the ^ structure. It's in the write up. In other words one of the problems is that you have the summary here. I'd have to go back to my write up and see exactly where I was coming from here.

MR. GRIFFON: Like we've said, this is our first cut through, so this is really just defining the issues more than we may not resolve many, but we'll define them.

So the 122.5 and six. Five we just did. Six is recycled uranium --

DR. MAURO: Which is again generic.

MR. GRIFFON: It's generic, but it's also the response here I see is sort of a site profile issue. Do you agree that, the response says these are ^ Fernald/Hanford are consistent with those ratios.

DR. MAURO: But then it says once completed more -- in other words you're talking about 122.6 right now.

MR. GRIFFON: Yes.

DR. MAURO: If you read it says basically once the recycled uranium analysis is completed, a more authoritative analysis will be available and revisions will be made. So it's like the other one we talked about. It's just like the one we talked about before related to recycled uranium.

MR. HINNEFELD: This is a kind of a global issue.

DR. MAURO: It is a global issue, and I checked it off saying it's a global issue. I agree.

The next one, 122.7, I had a, I'll tell you conceptually what the concern is. I know you folks didn't respond, but the thorium inhalation question. It turns out that you have a lot of information on thorium through-put, lots of good data, and uranium through-put. But for the purpose of doing the inhalation from the thorium, I think you only had a single thorium measurement that was made.

And on the basis of that measurement, the inhalation dose was calculated. In other

AWE sites where you had good information on through-put, you did it prorated. You said, listen, if I know that this was the amount of uranium that went through, and I could estimate the inhalation of uranium for workers that were there, the amount of inhalation of thorium is going to be directly proportional to the through-put. Because they're both really moving through except one, you have a much smaller volume. The thorium's always a much smaller volume.

So my reaction to this was rather than basing the inhalation of thorium dose on a single airborne sample measurement, which is really very questionable, it would be better to perhaps use the prorating approach as you have done in many other site profiles for AWEs. That would be a suggestion.

MS. MUNN: So the action is going to be what?

MR. HINNEFELD: Well, we haven't provided the response yet.

DR. MAURO: But that was my thinking, and it's in the write up in my report.

MR. ELLIOTT: Which just helps clarify so

that we can respond.

MR. GRIFFON: 122.8 and nine are those global issues.

DR. MAURO: Global, global.

And ten I checked off as okay.

MR. GRIFFON: Yeah, the only thing I question on ten is it clearly would be a DOL issue.

Is there any mechanism, Larry, for us to, I mean, is this worthy that we should forward this to DOL? I know they're participating by phone anyway, but we don't advise them necessarily.

DR. MAURO: During the CATI --

MR. HINNEFELD: There is a close-out interview -- or someone interviews the claimant alluded to an additional cancer. And we may have checked, you know, we may have asked DOL, and they may have come back and said, well, they're talking about a secondary cancer, a metastasis. Or they may have already been investigated. It may not have been.

MR. ELLIOTT: When we hear the claimant say I have another cancer, we say to them you need

to go to DOL, and they determine eligibility in that regard for your claim. It'll be up to them. And once we hear from them that you have an additional cancer, we'll rework the dose reconstruction to that.

MR. GRIFFON: I understand that, but I'm just wondering from our standpoint here to close this. I mean, we can just drop it or we can say we found this in our audit, DOL, maybe you should look at it. Maybe you already have. And just FYI kind of, I don't know if it's --

MR. SIEBERT: We did just get this claim back for an additional cancer.

MR. ELLIOTT: Sometimes it takes a long time. Sometimes it doesn't.

MR. SIEBERT: Yeah, there's the initial 153.6.

MR. GRIFFON: So there was an additional cancer so --

MR. SIEBERT: So the DOL did add an additional cancer.

MS. MUNN: So it's still under review essentially.

MR. SIEBERT: Well, we rework it.

MR. HINNEFELD: We'll rework it.

MR. SIEBERT: In March of this year they assigned a new cancer.

MR. ELLIOTT: I think for purposes of your working group matrix though this is probably closed.

MR. GRIFFON: Right. That certainly closes it because we know.

Next, 123, John, what site is this?

DR. MAURO: I'm shifting off to Doug now.

Doug, we just left the AWEs.

MR. FARVER: You're off the hook now, John.

MR. GRIFFON: Well, actually, you know what? Before we get into a new site, this might be a good time to break. No, actually, there's only one finding. Why don't we try to get through this one, then break.

MR. FARVER: It should be pretty simple because this is one of these fission product findings.

DR. BRANCHE: We're at 123.1?

MR. GRIFFON: 123.1, yeah.

MR. SIEBERT: Which site is this from?

MR. GRIFFON: Hanford. It is Hanford?

MR. FARVER: So this finding you'll see pop

up in several of these cases coming. We also have one from the sixth set, didn't we?

MR. GRIFFON: I think so.

MR. FARVER: That had to do with fission products.

MR. GRIFFON: Right.

MR. FARVER: And what I'll defer, I'll ask Kathy. She's had time to look at this one because she's the one that clued me into the fission product issue. It actually predates me.

So, Kathy, have you looked at this one, this finding?

MS. BEHLING (by Telephone): Yes, I have. I've briefly looked at it, and I guess if I recall correctly, in this case they missed fission product dose calculated, and I believe they calculated actual fission product dose after 1970. And this goes back to a previous finding for the portion of the missed fission product. We, you always go into a radionuclide selection process for identifying what would be the most claimant favorable radionuclide for fission products.

And I think in this case it was like

Cerium-144. But we've questioned what about all of the other radionuclides that may have been missed. And I know at one point in time NIOSH indicated that they were possibly developing a workbook. And I think this finding goes back to those previous questions regarding is there a workbook being developed where you're going to be looking at all of the various radionuclides associated with missed fission products or are you continuing to look at just the radionuclides that will contribute the largest dose?

MR. HINNEFELD: You guys have anything on that?

MS. BRACKETT: Well, it sounds like OTIB-0054.

DR. MAURO: I was just going to say that.

MR. GRIFFON: Yeah, that's what I thought.

MR. SIEBERT: And we're looking at the application of OTIB-0054 to whole body count.

MS. BRACKETT: Oh, right, right, because it wasn't written specifically --

MR. SIEBERT: It's written for urinalysis.

MS. BRACKETT: And we have been looking at comparisons, but it's very complicated, and we

kind of keep letting it slip away.

MR. SIEBERT: And it falls into the other issues.

MS. BRACKETT: We have started developing some comparisons and trying to come up with a method for applying it whole body counts.

MR. SIEBERT: And we're starting off with the cases where this has been brought up in these matrices and doing those comparisons first.

MS. BRACKETT: You finished one of them, right? We have --

MR. SIEBERT: Almost finished with one. It's pretty clear at least for the first one that we've done that the overestimating use and the most claimant favorable was very claimant favorable even though we compared to the whole body counts in '54. But we are still working that.

MR. HINNEFELD: So in other words we then will, we are going to provide additional analysis of these cases.

MS. BRACKETT: What we had hoped to do is show that it's claimant favorable to do what we've been doing rather than having to change.

MR. SIEBERT: That's very complicated.

MS. BRACKETT: Right. So that will depend on the outcome of the --

MR. GRIFFON: So this isn't really OTIB-0054. It's a comparison against OTIB-0054, right?

MS. BRACKETT: Yes, right.

MR. SIEBERT: Fifty-four doesn't apply to whole body counts.

MR. GRIFFON: Right.

MS. BRACKETT: Well, right --

MR. GRIFFON: And I'm not sure where to send this.

MS. BRACKETT: Well, that's true because the outcome will be either we will demonstrate that what we're doing is claimant favorable or we'll have to modify OTIB-0054 to incorporate whole body counts in there.

MR. CLAWSON: Basically it's going to have to stay here until they determine --

MR. HINNEFELD: Probably.

MR. GRIFFON: Yeah. Okay, this might be a good point to break for lunch.

DR. BRANCHE: We're going to get together at 12:45 or at one?

MR. GRIFFON: I think 12:45.

DR. BRANCHE: We'll reconvene at 12:45, and so I'll turn the line off, and we'll open the phones back up and see you soon.

(Whereupon, a break for lunch was taken from 11:45 a.m. until 12:45 p.m.)

DR. BRANCHE: If someone is on the line, please let me know if you can hear me.

MS. BEHLING (by Telephone): This is Kathy Behling. I can hear you.

DR. BRANCHE: Thanks, Kathy, I appreciate it.

Okay, Mark, it's all yours.

MR. GRIFFON: Back on the seventh set, try to liven it up after lunch. Somebody help me out. Where did we stop off?

MR. FARVER: 24.1.

MR. HINNEFELD: 24.1.

MR. GRIFFON: We're on 124.1. And so I'll turn it over to SC&A I guess. I'm not sure which site this is.

MR. FARVER: I believe this is Hanford. Yeah, Hanford. And the finding was about inappropriate method to calculate missed photon dose, and it has to do with the

counting of the zeros. The workbook, the equation used in the workbook to count the zeros was the, well, it worked okay, but the headings of the different dosimeter parameters changed, but the equation stayed the same.

In other words sometimes you'd be adding up a shielded zero and the next time it'd be a gamma, and sometimes it's penetrating or sometimes it's low neutron and change over the years, but the equation would still be the same. So NIOSH apparently went back in and changed the workbook, and I have not checked the new DR report yet, so it's my action. And this also goes for 124.2 and 124.3.

MR. GRIFFON: Any follow up on that, Stu? Any clarification? Is that about right?

MR. HINNEFELD: I think what we said is they were right, and that tool's been corrected.

MR. GRIFFON: All right, continuing on to 124.4.

MR. FARVER: All right, 124.4.

MS. MUNN: Is this still open? Because --

MR. GRIFFON: Yeah, SC&A's going to look at the tool.

MR. FARVER: Has to do with the failure to identify an incident in the DOE records. What it comes down to is NIOSH agrees there should have been more clearly explained in the DR report, which is we agree. So we're okay with that finding and their response.

MS. MUNN: 124.3? So both two and three, right?

MR. GRIFFON: So we've got agreement on that one. That's 124.4, right?

MR. FARVER: That was 124.4.

MR. GRIFFON: Yeah, 124.1, 2 and 3 are all fall into that first, the tool, reviewing the Excel tool.

Okay, now we're on to case 125.

MR. FARVER: Case 125 is another Hanford site. 125.1, the DR does not properly account for all the photon dose. Apparently, a couple doses were not, for years in 1952 and '82, were not entered into the IREP. But they say regarding the '84 dose, they say it's in the IREP, but I still couldn't find it. So I'll still come back to them and say I could not find a 1984 dose in the final IREP file. The IREP entry that they referred to is for 1948.

MR. GRIFFON: Give him a chance to find that.

MS. MUNN: Nineteen eighty-four. So nothing has happened.

MR. GRIFFON: Stu, any follow up?

MR. HINNEFELD: Well, I'm not sure how much of this I can reconstruct right now. I'll see what I can get to.

MR. GRIFFON: I was just pausing to give you a chance to find it or whatever.

MR. HINNEFELD: Scott is doing some scrambling over here. I don't know if he's going to find anything or not.

MR. GRIFFON: So the follow-up question again just so I can --

MR. FARVER: Oh, the follow up question was the 1984 dose that they referenced for an IREP entry turns out to be a 1948 dose. So I still can't find the 1984 dose.

MR. HINNEFELD: I guess we'll just have to go back. Also, I think I'd like to know when all these are added, '52, '82 and '84, just to make sure that the case comes out the same way.

MR. FARVER: Well, what I try to go by is

what believe is the final IREP file, which would start with S-E such-and-such.

MR. HINNEFELD: Yeah, it will start with the two letter designation which is the DOL office, and then --

MR. FARVER: Well, I'm not saying that that IREP dose isn't contained in one of the working files. It may be. But the final file, it was not contained.

MR. HINNEFELD: We'll have to go back and look again.

MR. GRIFFON: That was for 125.1, right?

MR. FARVER: 125.1.

125.2 is, does not properly account for all the neutron dose. And then NIOSH gives their response and I agree with their response.

MR. GRIFFON: Okay, so we have agreement on that one?

MR. FARVER: Right.

MR. GRIFFON: So 125.3, I think.

MR. FARVER: 125.3.

MR. GRIFFON: See if there's any comments on that.

MR. FARVER: DR does not properly account

for variation in bioassay MDA. This has to do with over the years the MDAs on the bioassay analysis has changed, and we do not feel that they accounted for that. And I still disagree with them.

Using half the MDA, if you calculate using half the MDAs, you won't exceed the MDA values for 1964, which is what they claim. In other words they're claiming if you went back and used the half the MDA values, you would exceed your MDAs for later years, and therefore, it's not likely to be possible. And I'm saying that, yes, you can do that, and it won't exceed your MDAs for 1964. And I can e-mail them to you, the IMBA file if you wish.

MR. GRIFFON: I think we should do that, yeah, that would make it clearer so everybody can look at the data.

MR. FARVER: Right, so that's my action.

MR. GRIFFON: I mean, they're saying that by using half the MDA earlier on you would have anticipated levels later that would have been over the MDA. You would have seen it. You would have had positive results, just because I saw a lot of people looking a little

bewildered there.

MR. SIEBERT: Were you comparing against half the MDA or the MDA? Were you using half the MDA across the board?

MR. FARVER: I was using half the MDA just to calculate the intake, but it would not exceed the MDA of later years.

MR. SIEBERT: There's the rub. That needs to be compared to half the MDA. Projections out from half the MDA need to be compared against half the MDA. Because when we're calculating versus half the MDA, what we're doing is we're calculating the mode of the triangular distribution, which means the top end is actually at the MDA. If you project out what the MDA intake would be, it would have exceeded the MDA. That sounded circular.

MR. GRIFFON: Yeah, that did. Why don't we share the IMBA file?

MR. CLAWSON: That was clear as mud.

MR. GRIFFON: I'd like to see the number. It's always easier to see the numbers.

MR. ELLIOTT: Yeah, it's easier to see the number.

MR. FARVER: But really I'm just saying I'm

sure that's the difference. I am not comparing it to half the MDAs for 1960 later years because I don't think that's what your response said.

MR. GRIFFON: Okay, well, maybe we should see the numbers, but are you saying the difference between the MDA and the DL -- I mean, that's your distinction, right?

MR. SIEBERT: If you calculate the intake based on the MDA over two, your projections need to be compared to the MDA over two --

MS. MUNN: Correct.

MR. SIEBERT: -- for consistency purposes.

MR. HINNEFELD: Well, it may depend on the reporting mechanism for the site, too. For instance, if they report the result regardless of what the result was, and if so, then the result would be, then you would expect some of those results to exceed the DL. Well, they wouldn't exceed the MDA, they would exceed the DL --

MR. FARVER: Correct.

MR. HINNEFELD: -- if the higher intake rate had been used earlier. So a little bit depends here on how that site reported its

bioassay results. If they would just report less than MDA for a bioassay result, then as you say, there's no way to tell because those data points could, in fact, have been less than MDA.

But if they reported against the DL, for instance, they would just, say, report less than DL or the number. Or if they just reported the value that popped out no matter what it was, and those still were all below the ^ of the DL, then you would have, then what the dose reconstruction done would have been correct. Isn't that right? Isn't there a reporting thing here as well?

MR. FARVER: Right, I don't remember how they reported it.

MR. HINNEFELD: I don't either.

MR. SIEBERT: It's Hanford I believe --

MS. MUNN: It is Hanford.

MR. SIEBERT: -- MDAs if I remember correctly --

MR. FARVER: I don't know.

MR. SIEBERT: -- for plutonium.

MR. HINNEFELD: It was less than 0.05 then? Is that ^?

MR. SIEBERT: I can look real quick.

MR. HINNEFELD: Okay, well, we don't --

MR. SIEBERT: We'll look at it.

MR. HINNEFELD: -- necessarily need to belabor it here.

MR. GRIFFON: Yeah, let's look at the IMBA file and make it a lot easier, yeah.

Okay, 125.4.

MR. FARVER: 125.4, DR does not properly account for whole body counts. DR did not account for positive whole body count results from cesium and Zinc-65. Had they been evaluated it still would have been small doses. That was pretty much summing up NIOSH's response. They were not accounted for, but had they been accounted for the doses would have been small. And our contention is he still should have accounted for them.

MR. HINNEFELD: Well, I guess less than a 0.02 we should have. As a standard approach we don't enter doses less than a millirem. But it should have, the DR could have said that. And he could have put in the two millirem doses for the ^.

MR. GRIFFON: I mean, is this done, I'm

assuming it's in a workbook. Why wouldn't it have been --

MR. HINNEFELD: I don't know. Scott, can you answer that one?

MR. GRIFFON: I guess that's the question I would have. It doesn't seem, if it's all done in a workbook, it would just be there. You'd just put it in.

MR. HINNEFELD: We'll provide more information about how those doses are accounted for.

MR. GRIFFON: Okay.

MR. FARVER: 125.5, failure to account for internal doses from all fission products. And really if you look back at the case, the report that we issued, it really has to do with more that, well, it's two points.

One is the other radionuclides which is the ongoing OTIB-0054. And the second point is a QA concern where it was done with Type S ruthenium. And really Type F will give you much higher kidney dose, and really is what they used in their calculation. So the DR report said Type S and it wasn't. It was really Type F which is QA concern.

MR. GRIFFON: Is there any follow up on the second part of that, Stu? I think the first part we have is the procedure in question.

MR. HINNEFELD: It's just, I guess, a typographical that made it through.

MR. GRIFFON: Just a typo. So there's agreement on that part, yeah. How does that get corrected? Or does it affect this case?

MR. HINNEFELD: I mean, it was just a misstatement. I mean, the case was done, and we're using more favorable --

MR. GRIFFON: The correct thing was used. It was just a typographical error.

MR. HINNEFELD: It was reported incorrectly in the dose reconstruction. I don't think there's anything to do on this case.

MR. FARVER: Isn't that something that should be caught in the peer review?

MR. HINNEFELD: It should have been caught in the peer review and the tech review or the technical editing and theoretically, maybe not, and then in our review. So, yeah, it should have been caught in the review. I don't know why it wasn't.

MR. FARVER: Is that part of the peer review

checklist to check the intake types and quantities and nuclides?

MR. HINNEFELD: I don't remember the peer review checklist.

MR. SIEBERT: But typically -- I mean, once again, human error all with checklists. You're still going to get --

MR. FARVER: At least if it's in a checklist someone's going to say, yes, I looked at it. I checked it off as correct.

MS. MUNN: They did have a checklist?

MR. GRIFFON: I think this is why we brought up the quality control idea before was that how do we, okay, we have this. Standing alone it's probably not that big of an issue certainly. But then if we have questions related to quality that come up over and over, is there any way for our Board to review the peer review process, the quality control process, you know, that aspect. And I don't know, I think we reviewed some of the procedures in the procedures review, haven't we? Yeah. But I don't know that we've looked at --

DR. MAURO: The only thing we did in the

procedures review was to, the overarching finding was that there are lots of QA procedures, and it's not, there really is no place where they integrated the whole process, where you actually see cradle to grave the QA process. See, on one level is, is the QA program coherent and well communicated so that a person could see, understand it. There's another question of is it being implemented.

MR. GRIFFON: Or is it being implemented effectively.

DR. MAURO: Implemented effectively. We didn't do that. In effect we're doing that. I mean, that's what we're doing. By checking the numbers if we do find places where there's a problem, it means that, well, it might be implemented but on occasion, we'd have something that should have been caught during the ^ process.

MR. GRIFFON: But I guess from my standpoint what we have to -- and I'm not sure we can do it here and now, but something we might want to think about, other Subcommittee members or the Board, is that certainly, as Scott said, human error. I mean, you're going to have

some of these. Now do we at some point want to look at this systematically and say are there too many. Is this happening too frequently or are they of a severity that concerns the Board? You know, that kind of thing. We haven't done that yet.

DR. MAURO: In principle, it is in fact imbedded in all of our audits. In other words in theory we have thousands perhaps of findings, some of which are in fact, like this one, okay, here's a place where something can slip through. So in theory one could argue that we could actually sort on that, and say, okay, how many of the findings are, would be defined as a place where the Quality Assurance program missed it, and it got through, got through the gate so to speak. So in theory it still is already done or being done as part of this process.

And then it really doesn't matter how do we sort from our dataset and what does it mean. And let's say we report back, okay, out of reviewing -- I forget -- 240 cases, how many QA findings did we have, you know, not technical arguments or debates or discussions,

but something that where -- this is a perfect example where maybe something got through that shouldn't have gotten through.

That is something that we didn't talk about on how to use our database. In theory we could use our database for that. I'm not sure how easy that would be, but it could be done.

MR. GRIFFON: Well, we've already used it to some extent in our reports to the Secretary. I mean, we've used the spreadsheets which have some, I mean all that information you talked about.

DR. MAURO: We do sort a lot of categories. I don't know.

Kathy, are you on the line, Kathy?

MS. BEHLING (by Telephone): I'm here.

DR. MAURO: This conversation goes toward questions that out of, you know, the various findings that we have, some of them fall into this category called, well, I mean, I guess we would define this -- and I guess everyone agrees -- this would be an example of a quality assurance --

MR. GRIFFON: And I have a category. I've

categorized things that way.

DR. MAURO: And we do have that, okay, then it's already --

MR. GRIFFON: Because if you remember, I have these other three columns that are blank through this matrix. Before we submit these final reports, we always fill those in, the program site ranking, the section and the grouping.

DR. MAURO: So that is something to sort on.

MS. BEHLING (by Telephone): And that will be captured in the database. And even if it wouldn't be captured on a column like that, when we populate the database, and we put in a description, if we use a description such as this is a QA concern, the database can go in and sort on any term that's in there. That was something we built into the Procedures Review database, and it's also built into the Dose Reconstruction database.

MR. SIEBERT: To answer a question that was asked about the peer review checklist. In the peer review checklist it has the question is, is correct inhalation absorption types used. Which used was correct. Yes, there was just a

typographical error in the dose reconstruction report. We don't specifically have a separate line saying that.

MS. MUNN: That's good to know.

DR. MAURO: I mean, it's a matter of degree. Now there are QA errors whereby let's say the wrong absorption or wrong class was used. That would also be QA, but that would be a little more serious.

MR. GRIFFON: That's right, there's different tiers of it, too.

MR. HINNEFELD: I think certainly a large amount of the review that these cases get speak to the number in the dose reconstruction, and this is the number ^. And it was probably certainly a number of years ago far less attention to the words in the dose report before. So that could be --

MR. GRIFFON: Which might be something we need to --

MR. HINNEFELD: And it's something to think about. And I hate to make the new DR report sound like a panacea for this because people are still going to say things, use the wrong words to say things. I don't know that we

would even describe to the claimant the solubility class because that's probably going to be in the technical section of the report that they can get if they want.

MS. MUNN: Stu, it can be a very confusing factor.

MR. HINNEFELD: Scott has to keep explaining it to me. I cannot keep it straight.

MR. SIEBERT: And so I ask Liz.

MR. GRIFFON: Okay, let's move on. I think we beat that one around enough. 125.6.

MR. FARVER: 125.6, does not properly account for unmonitored internal dose, two time periods of concern, 1947 to '48 and '63 to '84. And NIOSH's response, for years '63 to '84, during that time the employee had some whole body counts which were used to calculate fission product dose. So that's, I believe that's acceptable. Although I still didn't find any unmonitored fission products dose for '47 to '48. I mean, I believe from your response isn't that that it should be calculated for '47 to '48?

MR. HINNEFELD: I believe what our response says is that the intake rate for '44 to '46

should also apply to ’47.

MR. FARVER: Correct.

MR. HINNEFELD: So yeah.

MR. FARVER: But in the files as it stands there’s still, there was not an unmonitored dose for that time period. And I believe this case is being returned for rework --

MR. GRIFFON: Yeah, that’s what I was just writing.

MR. FARVER: -- for Super-S. So really when a case gets reworked you just have to make sure you get that extra year in.

MR. HINNEFELD: Yeah, it’ll all be covered in the rework.

MR. GRIFFON: Okay.

MR. FARVER: 125.7, IMBA intake rate incorrectly entered into the chronic annual dose workbook. It was either entered as an acute. It should be a chronic or just the opposite in this finding here.

MR. SIEBERT: Which one are you talking about?

MR. GRIFFON: 125.7, right?

MR. FARVER: Yes. It looks like it was a typographical error. It should have been

884.1 dpm per day. It was 844.1. So I mean, it was a typo. Once again the concern here is just a QA concern. Should that have been caught?

MS. MUNN: In the typos in terms of ^.

MR. GRIFFON: Yeah, I think as John said earlier, I think there's different levels of quality concerns obviously.

DR. MAURO: Like in this case if the actual dose was calculated with the wrong number, even though it would be different than, the typing said this number, but they actually used the right number. And I don't know the facts of the matter. Is this just a matter of, this particular issue we're looking at now, the number that was in there was that just a typo, and someone typed in the wrong number, or when you go into the spreadsheets or the analysis they used the correct number or did they use the incorrect number?

MR. FARVER: They used the correct number. The report contains the typo.

DR. MAURO: So it's the lesser of the --

MR. GRIFFON: The lesser of the two, right.

MR. FARVER: It's a matter of if someone's

comparing intakes, they should have caught that.

DR. MAURO: Sure, sure, I understand.

MR. FARVER: Go on to eight?

MR. GRIFFON: Yeah, 125.8.

MR. FARVER: 125.8, NIOSH may not have requested all the exposure records. This has to do with the employee was at Hanford and then at NTS. And NIOSH's response says it should have been requested but --

MR. GRIFFON: It's going to be reworked anyway, right?

MR. FARVER: Claim has been returned for rework for other reasons.

MR. HINNEFELD: And I would think today if we had had this kind of situation, we would have asked DOL about the NTS employment. If there's indication there's NTS employment where the person said I was also employed at such-and-such, we try to wait on those, you know, put those on ^ until we get with DOL and say here's this evidence of this other employment. Can you add that to the claim?

MR. FARVER: This just goes back to where it's in the CATI report. After carefully

reviewing the CATI report, they should have caught this.

MR. ELLIOTT: They should have caught this but done what? I mean, if the CATI interview indicates additional employment, we can't verify the eligibility of the employment for the claim. We have to turn it back to DOL.

MR. HINNEFELD: Yeah, turn it back to DOL.

MR. ELLIOTT: So that's the only action on our part.

MR. GRIFFON: You should have probably kicked it back though, right?

MR. ELLIOTT: In some cases the interview may indicate that they thought they had employment at another site but DOL has already heard that and has deemed it not eligible. So you have to really follow the thread of the eligibility determination. And I don't know if this particular claim has that thread in it or not.

MS. MUNN: I guess we have to assume that this was a non-compensated case. Otherwise, it wouldn't --

MR. HINNEFELD: It wouldn't have been returned for rework.

MS. MUNN: This would not be a significant --

MR. HINNEFELD: Once it's adjudicated it's not likely to get returned for rework.

MR. GRIFFON: 125.9.

MR. FARVER: 125.9, NIOSH did not properly address radiological incidence and potential missing bioassay data. There were four or so incidents mentioned in the DOE files where bioassay was requested in three out of the four, and it gives specific dates in our report. I guess our concern with the NIOSH response is, okay, where are the missing bioassay results. I mean, there are specific dates the incidents happened --

MR. SIEBERT: Can I back up to the previous one? I'm sorry. I was just messing around. The previous one with the NTS, the initial application to DOL does have NTS listed as they said they worked at NTS. So that information was to DOL prior to us getting that information. So we pretty much made the assumption DOL already ruled on that.

MR. ELLIOTT: Moved on that and said no then.

MR. SIEBERT: Sorry to bump back on that.

MR. ELLIOTT: So in that case we have no action to take.

MR. FARVER: In other words we couldn't find bioassay data to even come close to the three 1957 incidents. And the incidents are elevated airborne, elevated airborne, potential fission product U/Pu inhalations with positive nasal smears. But the bioassay results don't correspond to the dates.

So without the data you could at least assess the intakes from alternate means such as workplace data. Maybe there's some incident reports or coworker data, but there's documented incidents right there, positive nasal smears.

MR. HINNEFELD: How was the internal dose assessed for this person?

MR. SIEBERT: Later data was used for limitation.

MR. HINNEFELD: A chronic exposure?

MR. SIEBERT: Probably.

MR. GRIFFON: So you used a later, apparently you used a urinalysis data point after all the claimed incidents or documented

incidents. I don't know which they are. And then you would assume chronic I guess.

MR. FARVER: Which may or may not be appropriate.

MR. HINNEFELD: Well, I mean, there could be a comparison of acute intakes on the dates of the incidents described on the earliest date that would match the bioassay, the first bioassay date. See how that would compare to the chronic intake.

That's a thought that, you know, the general rule, a long chronic intake usually is a bigger intake than acute in order to match a bioassay result on a particular date. It really depends on when the chronic intake started.

MR. FARVER: I guess if you have documentation that intake happened on a certain date, then I would use that date and say there was an intake and try to model the data around the documented intakes because that's what you know for documented incidents --

MR. SIEBERT: Well, if you have positive bioassay.

MR. FARVER: But we don't have the bioassay results.

MR. HINNEFELD: No, we don't have anything from those incidents. We have bioassay years later.

MR. FARVER: Right, it says bioassay was requested, but we don't have the results. So we really are claiming saying is missing bioassay data.

MR. GRIFFON: And that data point years later, is that a real value or is that less than MDA or something like that?

MR. SIEBERT: It's less than.

MR. HINNEFELD: Less than, so how big an intake could you have on that intake date? So the question is, well, I don't know the specific case like how long did the person work before the incident, for instance. Because presumably the chronic intake would have started with their employment, and so you'd have that much.

And then if you have acute intake on the date of the incident, that just misses the bioassay date just below the detection level on the first bioassay sample, you'd compare

it, that would be one intake regime. And then compare that intake regime to the longer chronic intake rates.

MR. FARVER: Oh, I agree. You could compare them, but there was no indication that any comparison was done.

MR. GRIFFON: Yeah, so I think you're saying you're probably going to need to do that as a follow up?

MR. HINNEFELD: Right, I would suggest that.

MR. GRIFFON: Although this is a whole PER review anyway, so I don't know.

MR. HINNEFELD: Well, it's back, right? It's back for being reworked. But I mean, the approach --

MR. GRIFFON: Liz, you wanted to talk?

MS. BRACKETT: Yeah, I was just thinking this is plutonium, right, that we're talking about? The method published in, what, I guess it wasn't in the Health Physics Journal. Maybe it was in the Internal Dosimetry summer school, but there's a method where if you've got exposure far in the past, and you have a bioassay, a contemporary bioassay result, it doesn't matter what intake routine you assign.

You can assign one acute intake, five acute intakes, a chronic intake, you get the same result for the dose based on the later bioassay results. And personally I didn't believe it when I saw this, and I did a bunch of calculations and demonstrated to myself that it really does work. But that does have the caveat that, because it was based on operationals generally assuming acute intakes rather than much in the way of chronic, but you're not supposed to have had any intakes for five or six years just prior to the result that you use. I don't know how it's impacted if you -- one of the scenarios is a chronic all the way up --

MR. GRIFFON: There's a buffer between -- this is for -- I remember this publication, yeah. Looking at retirees coming back from medical surveillance tests.

MS. BRACKETT: Well, we used it quite a bit when we did the Mound dose reconstruction because we were looking at historical intakes. But you generally do get the same intakes.

MR. GRIFFON: Well, if you can provide, I think you need to provide us an IMBA

comparison, and then if you want to reference this, that'd be good to know, too.

MR. FARVER: The point here is there's bioassay data that was documented as being taken on certain dates that do not correspond with the bioassay data that was received. Someone should have recognized that.

MR. GRIFFON: That's the data question, too.

MR. FARVER: I mean, that's the key right there.

MR. GRIFFON: And the quality question. I mean, that's a question of did you get all the person's records, and then the other part of that is why wasn't this picked up in review.

MR. FARVER: Correct.

MR. GRIFFON: And then finally, Stu, the final question, I guess, is what you're proposing. Does this bound, is the chronic approach that you described bound this situation. So sort of three parts to that.

MR. FARVER: Okay, 126.1, is that where we're at?

MR. GRIFFON: Yup.

MR. FARVER: It's a Hanford and INEL person, recorded photon dose uncertainty not assigned,

and I believe this has been brought up before in case 69. I agree with their response. I mean, their response is fine. They used a maximizing DCF value of one, so that one's okay.

MR. GRIFFON: Yeah. And there's no further action on this.

MR. FARVER: Correct.

MR. GRIFFON: Okay.

MR. FARVER: 126.2, improper hypothetical intake dose model used for calculating internal dose. And this has to do with the workbook that was used, the OTIB-0002 workbook where you can put in if it's a uranium site, reactor site, non-uranium site and so forth. And our belief was it should have been a uranium site-slash-reactor site. And NIOSH gives a description of why they don't feel that way.

MR. GRIFFON: What is the facility on this case?

MR. FARVER: Hanford and INEL.

MR. GRIFFON: Hanford and INEL, yeah, that's right.

MR. FARVER: I'm okay with that. I didn't

find any indication of uranium work in the employee's records when I went through.

MR. GRIFFON: So you had, even in Idaho you didn't have any indication of --

MR. FARVER: I couldn't find anything in the records.

MR. CLAWSON: What did they call out his facilities? I guess I'm sitting here looking at Hanford and they've got about everything that there is and in Idaho, too.

MR. FARVER: Well, I understand that.

MR. SIEBERT: We're not saying he didn't have potential for uranium. We're saying that it's not a uranium -- Hanford and INEL are not uranium facilities as pertaining to the overestimating assumptions in the method that we use. The methods that we use in a uranium facility is something where the limits were based on the higher limits for uranium facilities, and Hanford was not a facility like that.

MR. HINNEFELD: OTIB-0002 has, there is a uranium intake, right, Scott? In OTIB-0002?

MR. SIEBERT: Yes.

MR. HINNEFELD: For the non-uranium

facilities there is uranium intake. It's just the uranium facilities because of the controls --

MR. CLAWSON: I guess I'm looking at Idaho as after the dissolving the fuel, you've got everything right there, repackaging the raw uranium and so forth. And I'm just wondering -- maybe I'm getting off --

MR. FARVER: I think it has to do with their definition of uranium facilities.

MR. HINNEFELD: The uranium facility is defined in -- stop me if I say something wrong -- OTIB-0002 describes, gives a basis for how those intake levels were arrived at. And because the uranium facility would attempt to control intakes at the higher intake, activity intake rates associated with uranium limits versus plutonium limits or those other limits, that you have for a facility that's, a uranium facility and controls based on uranium, you're going to have these higher intake rates.

And so you have a bigger uranium intake, TIB-0002 uranium intake, at a uranium facility. Now in a non-uranium facility there's still a uranium intake, but it's not

as big, and it's not controlled.

MR. GRIFFON: And TIB-0002 for Hanford-Idaho situation, was this done earlier on?

MR. HINNEFELD: This must have been an early one to do to have done TIB-0002, because currently they have bioassay.

MR. GRIFFON: Because you probably use site models now, right for Hanford-Idaho? Or would it depend if it was overestimating would you still use a generic?

MR. HINNEFELD: Well, TIB-0002 was a quick way to do a lot of dose reconstructions, so I don't know if we use TIB-0002 very much anymore, do we?

MS. BRACKETT: Yes.

MR. HINNEFELD: Do we?

MS. BRACKETT: Because it's built into some of the external dose tools, so it's very convenient for the dose reconstructors to use. So they do.

DR. MAURO: Denial.

MS. BRACKETT: Yeah, denials.

MR. GRIFFON: But overestimating even for a place like Hanford-Idaho where you have site models, you'd still use TIB-0002.

MR. HINNEFELD: Apparently, we still --

MS. BRACKETT: I'm not 100 percent certain, but it's my understanding that dose reconstructors still would tend to use it. I don't know for specific sites, but I think that it is still used even at sites where coworker models are available.

MR. GRIFFON: And I guess someone's compared TIB-0002 to any coworker facility model and made sure that they're bounding of those I assume.

MS. BRACKETT: There's been no generic comparison done.

DR. MAURO: There have been a couple of circumstances I recall where TIB-0002 was not limiting, but those are very special circumstances.

MR. GRIFFON: It would be unlikely. The other concern you get into is the claimant's side of this when they say you didn't even use my site data.

MS. BRACKETT: If there's site data, well, if the individual --

MR. GRIFFON: Well, individual data, that's different. So I don't know what the

circumstances here, I mean, this was probably an early case I'm guessing.

DR. MAURO: Yeah, let me ask you this in terms of the hierarchy philosophy requirement. Let's say you do have bioassay data, but it's self evident that even using TIB-0002, which would be off the charts, would apply to this person, but he's not going to be compensated. Would you use TIB-0002?

MR. HINNEFELD: It has been done on occasion.

MR. SIEBERT: And this one was done in 2004. So, yes, it is definitely an early one.

MS. BRACKETT: There is a hierarchy that the dose reconstructors are given, that's also in OTIB-0060, the hierarchy of data to be used. But like I said, OTIB-0002 is built into the external tool, so it is still used in some cases.

DR. MAURO: So you did have this tension, as Louie used to say, between the hierarchy of data requirement and the efficiency requirement where they sort of play off each other a bit, and I guess some judgment is used. Is that still being done or --

MS. BRACKETT: Yes.

DR. MAURO: -- did you abandon the TIB-0002 approach when you do have real data for real people?

MS. BRACKETT: I can't -- Scott would know better than I because I --

MR. SIEBERT: You're right. There's a tension because efficiency and the actual data, I mean, I'm not going to sit here and say TIB-0002 is not used now because I know it is. But it's pretty much a judgment on the dose reconstruction part that, yes, it is an overestimate. If they have any positive bioassay, there have to be comparisons to ensure that it's limited by.

DR. MAURO: In the end this person would be denied no matter which way you went.

MR. SIEBERT: Oh, yes. If we use the actual data, it would be much less than it was.

DR. MAURO: Right.

MR. GRIFFON: Okay. I'm not sure if we need any follow up on that, but I don't think there's any follow up.

MR. FARVER: No, no, I was okay once I read how they determine uranium facility.

Otherwise, I was confused, too.

MR. CLAWSON: I've got some question on that, but I'll do at the site.

MR. GRIFFON: Okay. Go ahead.

MR. FARVER: 127.1, it's a Hanford-NNL case. The first finding NIOSH failed to properly address all work locations documented in the DOE records. So there's just some dispute over did they get the proper buildings and facilities right, and we've not received a response yet. So continue on with that.

MR. HINNEFELD: I think I got a response to that just recently, but it was too close to this meeting to try to get it out.

MR. FARVER: 127.2, failure to account for recorded photon dose uncertainty, and apparently the doses were entered as constants, and without an uncertainty we felt that there should have been as either a normal or non-normal with an appropriate uncertainty. And I guess the response was, well, they probably should have been done with the Monte Carlo combination of doses and DCFs, but --

MR. HINNEFELD: We put this comparison in there because it's easier than actually

running the Monte Carlo and seeing how the Monte Carlo would have turned out. We said that even if we used one as a DCF as a constant versus the most likely, it just wouldn't --

MR. FARVER: And I think the POC on this was somewhere around 40-some percent, 45.

MR. HINNEFELD: It could very well be. I know we were ^ in that range at this time. That's still, it's only what, ten percent or so additional risk. Even at 45 percent you need, I think it's more like 12 percent, you need like 12 percent additional risk even at 45 percent in order to get to 50 percent.

DR. MAURO: Dose.

MS. MUNN: ^ one millirem for that?

MR. HINNEFELD: Yeah, dose, quality factors and all that stuff added in.

MR. ELLIOTT: Depending on the cancer, too, I don't know which cancer this is. That's not the rule for all cancers.

MR. HINNEFELD: Well, that value going to 45 percent, 50 percent is pretty fixed because that's just the geometry of the POC calculus or the algebra of the POC calculation. It's

going 45 percent, you know, you're talking about risk. That's not exactly dose depending upon the dose, you know, whether it's alpha particle versus a photon and things like that. So it's -- and to that extent it also depends on the cancer and how risky is it. But it's, you know, the combination of dose and an effectiveness factor, you actually need to be at 12 percent more to go from 45 to 50 percent.

MR. SIEBERT: And it was originally 23.8 rem and adding 0.3, 0.4 rem is definitely not going to rise to that level.

MR. FARVER: For my clarification is it okay to enter recorded photon doses as constants without uncertainties?

MR. HINNEFELD: If we felt, and I believe we have a resolution in one of the early findings, 69, finding 69, that if the DCF range is below one, you know, that triangular DCF range is below one, it's okay to submit the recorded photon dose as a constant and a DCF of one as an overestimate for that photon dose.

MR. FARVER: But not to record a dose in DCF

less than one as a constant.

MR. HINNEFELD: I don't believe that should be done.

MR. FARVER: Okay.

MR. HINNEFELD: A recorded dose with a constant with a DCF of less than one, if you're picking like the most likely, well, a measured dose times a DCF where you use the most likely value of the DCF, not the whole range but the most likely value, and enter that product as a constant, I don't believe it's acceptable.

I believe it's okay if the DCF range is below one to take the measured dose times one and enter that as a constant. But other than that, it's I think what you do is you take the measured dose because a normal distribution typically combined with the DCF's triangular distribution, and you get the result. And sometimes it's normal, and sometimes it's lognormal. And it may change year to year.

MR. FARVER: Just for my clarification because I get confused.

MR. HINNEFELD: I believe that's the

position we've taken.

MR. SIEBERT: That's correct.

MR. FARVER: So I guess that finding's okay, or that resolution's okay.

MS. BEHLING (by Telephone): That position has not been proceduralized, has it?

MR. HINNEFELD: What position is that?

MS. BEHLING (by Telephone): Because I believe that --

MR. HINNEFELD: As much trouble as I had saying it, you want me to proceduralize it?

MS. BEHLING (by Telephone): No, I believe we had started identifying that as a finding because according to the procedure it indicated that the recorded dose should be entered with the uncertainty. But I think you're correct. We've agreed that that doesn't, that we didn't need to do that.

Although I have seen I know in previous cases, I think there was a thyroid cancer where you used the one, and it was actually supposed to be a greater than one. And so that didn't apply in that particular case, but I assume that there have been no procedural changes to indicate that that is an

appropriate approach, using a constant and the DCF of one if the actual DCF is less than one.

MR. HINNEFELD: Well, no one here can think of one of the top of their head.

MS. BEHLING (by Telephone): Okay, just checking.

MR. GRIFFON: Is there one in the plans or no, not necessarily? I mean, should there be one? That's the question.

MR. HINNEFELD: As a general rule we don't proceduralize every potential overestimating approach. As a general rule, we don't do that. If someone can take an expedient approach that will be a, provide a, for instance, in a non-compensable case will provide a higher dose than what following the technique would, we've just generally allowed -- I don't know of each example that's been proceduralized.

DR. MAURO: What would be helpful though is when that dose reconstructor decides to do that, he should mention, by the way, I'm doing it this way so that, in other words recognizing that this is not standard procedure, but I'm doing it this way because

it's an efficiency method and still comes up with --

MR. HINNEFELD: I think there's a lot of opportunity to do that if you're just writing a technical report for technical reviewers, you can make a shorthand note in your technical section about what you did there without having to explain it very well.

DR. MAURO: From our perspective we basically check your numbers against your procedures, and if it's not there, and we get this, we say, we don't know what to say about this. But explained the way you just explained it, you know, from our perspective it would satisfy us. It's been explained, and it makes sense, and we can move on. Even though it may not have been contained in some official procedure, that helps.

MR. HINNEFELD: And also, I think the technical section of the DR gives a lot of opportunity to make those kinds of brief technical descriptions that are really hard to explain in something that you want the claimant to read and understand.

DR. MAURO: Yeah, I understand. That's

again one of those dilemmas. You want to keep your report, your DR report, coherent and easy to understand by the claimant, but you also at the same time you are reading it and we're looking for the, you know, and we have this tension. How do you satisfy both?

MR. HINNEFELD: You give it a lot of credit and say we want to keep it understandable, but you kind of like to get it there.

MR. GRIFFON: Does any of this go back to the DR instructions that we've talked about?

MR. HINNEFELD: I don't know that anything's been set out like that either. I think we can't go up and look through them and see, nothing comes to mind of the people most familiar with what's out there. So I don't know. It would be a way to do it. But on the other hand, we've not generally tried to in every case write down even as an instruction all of the possible ways that it might be quicker to take a short cut.

MR. GRIFFON: The reason I brought that up awhile ago was that I thought that was one way to get at this question that John's raising because that sort of has some technical notes

that you give to the DR instructor at the time they were doing the DR because that's always the dilemma we have in looking back is that we don't know exactly what they were following then.

And if you had those DR notes, and I don't think you have them for all sites, but you do have them for some, DR instructions or notes or whatever they are. And I hope those have started to be included in the DR files. I think we said we were going to do that.

MR. HINNEFELD: Yeah, I think we said, now that you mention that I think we did say that. I can't remember for sure.

MR. GRIFFON: I think several times NIOSH committed to it.

MR. HINNEFELD: Did we commit to it?

MR. GRIFFON: Well, Stu, I thought you said definitely going forward retrospective would be very hard.

MR. HINNEFELD: Yeah, I remember that part now.

MR. GRIFFON: And I thought that was, I didn't know we needed a Board action to make that happen. I thought that was --

MR. HINNEFELD: Well, you shouldn't need a Board action. I think the issue might be for me to sit in this room and make that commitment to do that, see, I don't know what I'm committing in terms of resources to. I don't know how much work that is or how hard that would be to do.

DR. MAURO: In a way you almost can't be proscriptive about this. What you're really saying is, listen, you have to give enough information that, in the supporting notes, that anyone auditing your work, whether it's being audited within NIOSH or it's being audited --

MR. GRIFFON: I'm not asking for anything that's not being done already. Don't get me wrong. You know that, Stu. I mean, I'm not asking necessarily for what John's talking about. I'm asking for these DR notes that already exist, that you're already using, that they be included in, I mean, we asked for this a couple years ago, and I thought it was going to, I mean, I thought the big push back on me was that we can't go backwards and try to do this. It's impossible.

MR. HINNEFELD: Well, I remember that.

MR. GRIFFON: But going forward it wasn't going to be that impossible. I thought it was, I thought you did commit to it, and I wish you had told me the caveat.

MR. HINNEFELD: I don't remember. I very well could have. It's not like me to say that, to say something like that in these meetings.

MR. GRIFFON: Well, but I thought we talked about it on the Board, too.

MR. HINNEFELD: It might be. It might be. I'd have to go back and check, and I'll have to check with the contractor about anything I've sent to them about it, because normally I send that over pretty quick. But, and I'm just really drawing a blank on what happened after that.

MR. SIEBERT: I'm pretty sure I'd remember a direction to do that.

MR. HINNEFELD: Yeah, and so to me that sounds like something that may not be as easy as it seems to get that information into the DR supporting documents folder.

DR. MAURO: But doesn't that leave you in a

QA dilemma? That is, after your dose reconstructor --

MR. GRIFFON: Well, that's the whole reason it was brought up.

DR. MAURO: Yeah, doesn't that leave, and the work is being checked, and the person was creative. What you're really saying is, listen, you've got to leave a certain amount of creativity to your dose reconstructor to use common sense or what he thinks make sense to get through this process efficiently. And that's reasonable. But at the same time that sort of leaves you in a place where, wait a minute. What did he do, and how come he did this? It's not in accordance with this procedure. And a footnote or something, it's not even SC&A any more. It's really internal to NIOSH. It seems to be something that you would need.

MR. HINNEFELD: Well, I'll have to go back and be able to talk to some more staff about it. I'm not opposed to doing it unless it would be very difficult. I don't know how hard it would be. I don't know if these instructions are readily attainable and

clipable. Is there a convenient place for a dose reconstructor to go and get a copy of the instructions they're applying and put it in there. Or was it something that was put out in a note in a staff meeting or something like that. So it's a little hard for me to understand exactly what I'd be asking for when I ask for this. And so from that standpoint I'd like to have --

MR. GRIFFON: I think from what, the sampling I saw it varies --

MR. HINNEFELD: I do remember a conversation, and you --

MR. GRIFFON: -- the sample I saw varies from site to site. I mean, some sites have a lot more instruction, but I'm sure I haven't seen the universe, and I'm sure you're right that there's notes from meetings.

MR. HINNEFELD: Well, I don't see any dose reconstructors any more so I'm at a little bit of a disadvantage. So I don't see that many of them. But there'll be occasions where there'll just be an explanatory paragraph ^.

MR. GRIFFON: Well, if you can follow up on this because I really did think that was in

place going forward --

MR. HINNEFELD: Well now we're having this conversation, I have to go back because I remember the conversation, and I remember exactly what you said, but we just thought it would be very difficult to do it retrospectively --

MR. GRIFFON: Yeah, I knew that.

MR. HINNEFELD: -- but it might be doable. And so I absolutely do not recall what happened after that. Sorry.

DR. BRANCHE: How are you going to follow up with Mark and the work group?

MR. HINNEFELD: Well, I can send a message to the work group or to the Subcommittee when I figure out what happened and what might be possible here. I really want to understand what I'm asking for because it's not real clear to me what I would be asking the contractor to do if I told him to do this.

MR. GRIFFON: Yeah, I mean, Scott, you can probably answer better than anyone. I mean, these -- and I've seen different names for them that's why I'm not trying to be coy here or anything, but I've seen DR instructions and

DR notes --

MR. SIEBERT: Table top notes and --

MR. GRIFFON: Yeah, things like that, different titles, and there's no standardized name for these things. But different sites, especially Rocky Flats, had a couple sets for external and internal.

MR. SIEBERT: The complicated sites.

MR. GRIFFON: Yeah, some of the more complicated sites had, and it makes sense, it had an almost sort of like a triage approach, if-thens, you know. If you had this situation, use this or else use this or whatever. And I was told they modified over time so, and nobody necessarily kept archived versions of them. So to place them in time would be difficult.

MR. SIEBERT: It's something we had to deal with that wasn't a TBD but we knew there was an issue, we might deal with it there and try to look up the TBD. But since they were trackable documents, it did change over time.

MR. HINNEFELD: Like procedures and things like that that would be used would be referenced in the DR.

MR. GRIFFON: Yeah, the procedures is no issue.

MR. HINNEFELD: So that would be the issue. It would be the more informal instructions.

MR. GRIFFON: But these notes get into the, you know, if I remember them right, some of them get into the selection of solubility classes and different decisions that the DR individual has to make when they're looking at data for specific sites. And the questions that we sort of raise in the audit function, how did they decide on this. Well, some of that -- I'm not saying all of it, but some of it is proscribed in some of these notes, you know? So anyway, I guess as long as you have a clear action that you can check on, do you think we can have an answer for the Board meeting?

MR. HINNEFELD: I think so. That's what, two weeks away?

DR. BRANCHE: Yes.

MR. GRIFFON: Because I know we've discussed this on the Board before. So I'll raise it as part of the Subcommittee section, you know, report.

MR. HINNEFELD: Okay, I would think so.

MR. GRIFFON: Okay. Let's finish case 127 then, and then we'll maybe take a break I think. A couple more findings here.

MR. FARVER: We're on the third finding?

MR. GRIFFON: Yeah.

MR. FARVER: 127.3, recorded shallow dose is inappropriately entered into IREP as electrons greater than 15 keV. NIOSH calculated shallow dose and assigned it as electrons greater than 15 keV. The reviewer felt that it should have been less than 30 keV photon since the employee worked near plutonium as a claimant favorable measure.

NIOSH gives their response as to why they did what they did. And I'm going to have to go back and review OTIB-0017. So that's my action. For some reason I left this one blank, and I don't know if I just passed on it and didn't get back to it or got confused by it.

DR. MAURO: I seem to recall the low energy photons of the same. In other words you have the assumption of betas versus photons for shallow doses, the photons that have the

higher risk. I remember that one of your procedures, when you're doing a shallow dose, and you're dealing with low energy photons and low energy beta, both of which might be recorded in an open window. The assumption I believe you use automatically is the low energy photon, and that gives you the higher risk. I may have it backwards.

MR. HINNEFELD: I think there's a site specificity to it. I don't know that we have a general direction to it because I believe there would be some site specific criteria that would enter into the decision of what is this open window likely to be. And within certain sites it would be work location specific. So I don't know that we have a general direction out there about it because there's site specific information in most cases that would lead you one way or the other in many cases. The magnitude of the risk may depend upon the radiated organ.

MR. FARVER: The organ in this case is the breast. I know the special section in the OTIB-0017, and that's why I have to go back and just make sure what it says.

MR. HINNEFELD: Okay, and then and our initial response was we felt that this doesn't seem to have been a work location really that would be particular external plutonium photon dose associated with it.

MR. FARVER: I think it's going to come down to claimant favorability, because I think that one of the statements in the DR report is the shallow dose was attributed to electrons greater than 15 keV as a claimant favorable assumption. So let's see if that's true or not.

MR. HINNEFELD: Will that really be favorable in other words. It may actually be the wording in the dose reconstruction.

DR. MAURO: I've seen this before. I just don't remember how it goes.

MR. HINNEFELD: And I think it might be an organ specific.

MR. FARVER: 127.4, failed to properly account for all the missed electron dose. And NIOSH gives a very good explanation of Attachment C of OTIB-0017, and it's very proscriptive. It tells what to subtract from what, and if this is zero and this is zero,

then you assign this. So it's, I'm okay with their resolution.

MR. GRIFFON: Okay.

MR. FARVER: 127.5, failed to assign missed neutron dose. And I thought this was a particularly good response by NIOSH. In the first statement they say for reasons stated in the response to findings 127.1 B1 --

MR. GRIFFON: And there's nothing there.

MR. FARVER: -- and there's no response, so I like that.

MR. GRIFFON: Just kind of keeping us on our toes, right?

MR. FARVER: And this has to go with location. So I imagine when they reply, respond to finding number one, we'll be able to look at both --

MR. HINNEFELD: Yeah, I actually have 127.1, the original response that came on 127.1 I had questions about. And so I didn't include it. My questions have now been answered, but I just got the answer, and I didn't get it out to the Subcommittee.

MR. GRIFFON: There's location on this, but there's also the activation question, right,

the Sodium-24 --

MR. HINNEFELD: Yes.

MR. GRIFFON: -- activation question, and whether that is a viable --

MR. FARVER: I figured you had a response on there then took it out.

MR. GRIFFON: So we're waiting on NIOSH's 127.1 for this one.

MR. FARVER: Right, and then we'll just evaluate them all. I just thought it was a chance to take a shot at Stu.

MR. HINNEFELD: Why would you think that I would want to respond clearly to these?

MR. GRIFFON: You know what? I said take a break after this case, but there's about ten more findings. So why don't we just, this is a good on a laughing note, let's take a break. Ten minutes, is that all right? Ten minutes for people.

DR. BRANCHE: We'll put on hold for ten minutes. (Whereupon, a break was taken from 2:00 p.m. until 2:15 p.m.)

MR. GRIFFON: We're on, I think we left off on 127.6.

MS. MUNN: Oh, did we do five?

MR. GRIFFON: We did five, yeah, we have sort of a dual follow up on 127.5. NIOSH is going to look into their response to 127.1 is missing, and SC&A will review it.

MR. HINNEFELD: Just as a point to be made, it relates to 127.5. In this case the two in vivo counts for Zinc-65 and Sodium-24 are, in fact, non-detects. The original dose reconstruction that was done for this, when that dose reconstruction was done, we had a table of whole body count values that we thought were MDAs. So you compare essentially to an MDA over two to see if you're detectable.

Am I doing okay here?

DR. MAURO: You're good.

MR. HINNEFELD: So we felt, so we originally thought they were detectable. Subsequently, we learned that that table was actually a critical level for LDs so that a value below the LD values is, in fact, non-detectable even if it's greater than half of it. But lower than the LD it's not detectable. So those are, in fact, non-detectable bioassay samples. This case was then reworked for whatever

reason, additional employment or cancer or something like that, and was done as a rework.

Rather than explain in a dose reconstruction a second time that, oh, forget it, those really weren't positive bioassays, the dose reconstructor continued to call them positive bioassays so as to not introduce that confusion in it, and just was going to add in the dose. And so that's why there appears to be -- the question that gave rise to this was I asked how come we're seeing these things well after the single pass reactor shut down. How come we're seeing Sodium-24 if it's really an ingestion intake from the water supply. Well, the fact is they really weren't positive samples. We weren't seeing it.

DR. MAURO: I mean, this goes way back. I remember the meeting we had three years ago when this came up. And this is how it all ends, interesting.

MR. HINNEFELD: Certainly for this case.

MR. GRIFFON: So when this says further on 5/1/sometime, he had a positive whole body count indicating 660 picocuries of Sodium-24? It's not a positive.

MR. HINNEFELD: Correct.

MR. GRIFFON: You think you should modify this response in any way, Stu? Because I'm afraid that if this goes into a public record, you know, this is going to be really confusing to people. I think you might want to consider modifying that.

MR. HINNEFELD: I believe we can. I think '79 is one of those dates where we would, of those bioassays when we would say, yeah. In fact, we may just take that whole portion, that last portion out.

MR. GRIFFON: I have you both down as an action to follow up on this anyway. But given what you said, I think I'd appreciate it if it was modified.

MR. HINNEFELD: Okay.

MR. GRIFFON: All right, 127.6.

MR. FARVER: 127.6, reviewer unable to reproduce onsite ambient dose as described in the DR report. And NIOSH's clarifies on how the doses were calculated. And I accept their description on their ambient doses.

MR. GRIFFON: All right.

MR. FARVER: 127.7, inappropriate onsite

ambient dose uncertainty, and they also explained the uncertainty in their previous response, so that's fine, too.

MR. GRIFFON: Okay.

MR. FARVER: 127.8, failure to account for internal doses for all fission products. We don't have a response from NIOSH.

MR. GRIFFON: Right, this is a --

Stu, I guess this is still on your --

MR. HINNEFELD: Yep.

MR. GRIFFON: Okay.

MR. FARVER: 127.9 is reviewer questions the appropriateness of attributing the Zinc-65 and Sodium-64 doses to ingestion.

MR. GRIFFON: Does that go back to what we were just discussing?

MR. FARVER: This goes back to the positive, not positive whole body counts, so we're okay with their explanation other than they probably should put --

MR. HINNEFELD: We may want to put a little different wording in there.

DR. MAURO: Yeah, this wording here doesn't say --

MR. HINNEFELD: Well, it has to do with, I

mean, there seems to be in this finding, and I think maybe we've seen it before, this intimation that the fact that these people if they had had a positive bioassay for these activation products, that maybe that was an indication of a neutron ^ that they were exposed to. Our view in most of the response in 127.5 we plan to take out, kind of talks about this doesn't seem to be likely --

DR. MAURO: Be the case.

MR. HINNEFELD: -- even given the amount of other dose that would have to go with it. You know, external dose that would be associated with that kind of activation.

DR. MAURO: I recall when this issue emerged a couple of years ago. And the argument was made, no, it's from drinking the water in the Columbia River. I guess, we found, I guess, later that the water, that would have been upstream. In other words, the only way you would get the Sodium-24 from discharges from the Columbia River was from the water being acquired downstream from the discharges from the reactors.

But the water supply was coming from

upstream, and that was like subsequent to that discussion. So we found it hard to believe that the Sodium-24 was from discharges. Now if the real answer is that there is no Sodium-24, that's the answer, and that puts the whole thing to bed if that's the case. Just a point.

MR. SIEBERT: From an ingestion/inhalation point of view the dose reconstructor ran them both ways and assigned ingestion because it was the larger dose.

MR. HINNEFELD: When he thought it was positive.

DR. MAURO: When he thought it was positive.

MR. SIEBERT: When he was considering it a positive. He did it both ways to be on the safe side.

MR. GRIFFON: Yeah, but that doesn't account for the neutrons.

DR. MAURO: I have to say I think it's important that we put the Sodium-24, and it really isn't there because that's, that's a killer.

MR. GRIFFON: Because quite frankly, a lot of people didn't buy this water ingestion

idea.

MR. FARVER: 127.10.

MR. GRIFFON: Yep.

MR. FARVER: Failed to assign missed dose for several unmonitored radionuclides. Still waiting for a response.

127.11, NIOSH failed to address the breath sample monitoring reported in the CATI report.

MR. GRIFFON: Can you just stop at ten? What, the unmonitored neutrons is that? Do you recall? This is not fission product stuff obviously, is it? It's something else, right?

MR. FARVER: Such as Strontium-90, C-14, P-32, says radon gas and other nuclides. Looks like the reviewer mentions radon generator used for animal studies in the 1008-F Building. So anyway, that was ten.

And 11 is kind of related where we say they failed to address breath sampling monitoring. In the CATI report the EE stated that he was sure that he provided breath samples, especially when he was working in the 300 Area. And the records did not include any breath sampling results.

Then NIOSH gives their response that basically if the breath monitoring had been performed, records would have been included in the DOE response. Breath monitorings are not utilized to monitor radon, but rather measure radium body burden. Which would lead to the question, well, and then finally they say radon exposure would not contribute, would contribute almost no dose to the breast. If they did do breath monitoring for radium, that would contribute to the breast.

MR. GRIFFON: I was a little confused by that response. Yeah, I was a little confused by that response. You might want to re-look at that because you're saying the breath monitoring's done for radium not radon. But then at the end you say and radon wouldn't contribute to the dose.

MR. HINNEFELD: Well, the finding was about radon.

MR. GRIFFON: Yeah, I know. I think the CATI implied radon, right? Is that -- I think the CATI --

MR. FARVER: Well, and also in that previous finding, number ten, I believe the reviewer

mentioned something about a radon generator --

MR. GRIFFON: Right, okay.

MR. FARVER: -- and things like that.

MR. GRIFFON: So yeah, yeah.

MR. HINNEFELD: I thought the finding was about radon so that's why we commented on that.

MR. FARVER: Well, it was really just breath sampling, you know, are there results, and if they're not, what are you going to do? And if it was for radium, could that contribute to the breast?

MR. GRIFFON: Has any of this come out in the site profile review for Hanford, 300 Area, would they be, would they have done breath sampling?

MR. HINNEFELD: I don't know. Well, radon generator theoretically would have some radium there. It wouldn't be very much. I'm not aware of it. I don't know the site profile well enough to know.

MR. FARVER: I mean it's probably something the employee's not going to forget, giving breath samples.

MR. HINNEFELD: Well, it could be in a

spirometry test or a respirator fit test.

MS. MUNN: And that was very common in the 300 Area, very common. Practically everybody had it at one time.

MR. FARVER: Well, so did I, but I think the employees were aware enough that that was not a breath sample.

MR. GRIFFON: I think it's worth pulling the string. I do.

MR. FARVER: They knew that was for a respirator fit.

MR. GRIFFON: Yeah, I think so, too.

MR. HINNEFELD: Yeah, they should have known it was a respirator fit.

MS. MUNN: Well, even so --

MR. HINNEFELD: But it seems like they were taking my breath sample. I blew through a tube into a box. Sounds like they're taking a breath, it looks like they're taking a breath sample.

MR. FARVER: I don't know. How did they take a breath sample?

MR. HINNEFELD: Well, first of all the technique I don't think is used very much. It hasn't been used for a long time I don't

think. But normally what they would do is they would have a person breathe bottled air, aged bottled air, so that there's essentially no radon in the air they're breathing. And then exhale -- I don't even know how it's captured, how they captured the exhalant.

DR. MAURO: There is a procedure.

MR. HINNEFELD: There is a procedure somewhere.

DR. MAURO: We have a procedure on it, yeah.

MR. HINNEFELD: There's a procedure for interpreting it.

DR. MAURO: And how it's done, and how to interpret it. We reviewed it.

MR. HINNEFELD: So I'm not exactly sure how they captured the air. I would assume they count it in chelation bottles or chelation chambers of some sort. I don't know.

MR. FARVER: But I would think an employee would remember that as being unusual as opposed to the annual respirator --

MR. GRIFFON: Spirometry test.

MR. HINNEFELD: Well, it might be. My view is I think a spirometry test could easily be thought of as a breath sample, well, I left

some sort of breath sample.

MR. FARVER: I just don't remember seeing in the CATI reports that I reviewed people coming up and writing in there that they gave breath samples. And most of them I'm sure had respirator tests.

MR. HINNEFELD: Yeah, most of them had respirator tests.

DR. MAURO: Did they do at Hanford -- I know there was an awful lot going on, basically you'd worry about this if you were doing chemical separations of ore. And that's with Mallinckrodt, these other sites --

MR. HINNEFELD: That's where you'd have a fairly good amount of radium.

DR. MAURO: -- you had radium separated, and there was a very real possibility, especially when they saved it --

MR. GRIFFON: That's what I was wondering. What's the source term here?

DR. MAURO: Right, there would have to be because they were separating, they were processing ore, and they were chemically separating out the uranium. I think that was done sometime at Hanford.

MS. MUNN: No, it -- just a minute. Processing ore is not the same as dealing with powdery substances, and there was a great deal of centering that went on there. So powder was common, especially in 308 and 306. There would have been, it would not have been unusual for some of the health physicists to have suggested breath samples from time to time. It would make commonsense.

MR. GRIFFON: So that's consistent with the CATI so that's all the more reason to follow up on it I would think.

MR. HINNEFELD: Yeah. Well, I'll have to go see what else we have.

MR. GRIFFON: And you might want to ask the site profile people, too, what they found out about, because they've looked at the aggregate data I'm sure.

MS. MUNN: It would not be a common, it would not be too common simply because most of that work was done in gloveboxes, but the mere fact that you occasionally get a rupture in a glovebox would be an adequate reason for breath sampling.

MR. GRIFFON: To do the test. So I mean I

guess is there an action there? That's the question. I would say I think NIOSH should follow up on --

MR. HINNEFELD: We'll have to go back and look.

MR. FARVER: Yeah, I don't know, might want to chalk it up to a radium source term?

MR. GRIFFON: Right, right, but it sounds like -- can that be a NIOSH action to follow up on that, Stu?

MR. HINNEFELD: Yeah, well, certainly we may want to modify our response somewhat.

MR. FARVER: Then really this goes in with the number 12 finding, 127.12. NIOSH: Failed to properly address incident in the two CATI reports. In the CATI reports the employee gives a pretty good description about working in the lab. There was an incident, and his hair color changed for a few months. Does not appear to be addressed in the DR report.

And then NIOSH's response is if they existed, it would have been included. If the incident reports existed, then they would have been included in the record. I look at that, and I still say, well, you didn't request

additional information, and maybe this is something where they need to go back to DOE now and look for additional information such as incident reports, superintendent logbooks. I'm not sure we had a specific date on this incident or not. I don't believe so.

MS. MUNN: One would think you could at least get in the ballpark for the date in an incident of that magnitude.

MR. FARVER: Right. I would say it's pretty severe if it's changing an employee's hair color. Of course, that probably could be chemical.

MR. HINNEFELD: Sounds chemical to me.

MR. FARVER: Right, but --

MR. GRIFFON: It could be associated --

MR. FARVER: -- both.

MR. GRIFFON: -- radiation exposure. You usually don't have one without the other.

MR. FARVER: But it might be able to put it into a certain area, facility, building, something like that.

MS. MUNN: I've not heard of such a thing personally. But that would --

MR. FARVER: The concern was the NIOSH

response was that they, we felt they should go look for additional reports.

MR. GRIFFON: I mean, I'm a little perplexed by that last part of the response, too, Stu, that you assume since some other investigation reports were there that these would have been in there if they happened. I mean, are there ever --

MR. HINNEFELD: Maybe just that they were available. I mean, one thing to ask, one thing to consider about making additional requests back to a site on new, different kinds of information.

MR. GRIFFON: They may not find them anyway, right? They can look again, but --

MR. HINNEFELD: Yeah, they may just find what they found --

MR. GRIFFON: If they look in the same spot, they're not going to find it.

MR. HINNEFELD: Chances are that's what generally happens when you go back.

MR. GRIFFON: And the other, I guess, you have a question of incomplete records, but also a question of would there be any classified records. I don't know about

Hanford's, you know, if there were incidents that had parts of the documents, the write ups, were classified. Would they have not been included in the individual's records?

MR. HINNEFELD: Good question. I don't know.

MR. GRIFFON: Yeah, I don't even know if --

MR. FARVER: And you may be able to place it to an area, facility, and request incident reports for that facility for a timeframe instead of requesting bioassay data.

MR. HINNEFELD: Well, these were all survivor CATIs though. I mean the EE didn't, the actual employee would have passed away. So there's no firsthand account. This wasn't the employee giving this. These were the survivors giving these.

MR. FARVER: I understand, but you may be able to -- like there's a week in the 300 Area. If you could in a lab in the 300 Area, if you could pin that down to a timeframe, says it occurred in the '80s, and then what type incidents did you have in the '80s.

MR. HINNEFELD: There might be a way. Might be a way to find some more. I don't know.

And another thing is, are you going to get enough stuff to help you with a dose reconstruction above what you already have, and I don't really know what we have in this case.

MR. FARVER: But those two tie together, 11 and 12.

MS. MUNN: If you can tie it to an approximate timeframe, and by approximate I mean a couple of years, then the number of incident reports for the 300 Area shouldn't be that staggering.

MR. GRIFFON: I'm going to lump that action in with number 11.

All right, then we're on to -- that was a long case, 128.1.

MR. FARVER: 128.1, this I believe is a Savannah River case, and the first finding is NIOSH failed to properly address -- oh, no. Improperly converted recorded photon doses to organ doses, and we discussed this before about the range of dose conversion factors. You know, using just the AP geometry or using the range overall geometries. And this is one of those findings. They used the range over

all the geometries instead of just the AP. Like I say, it's been corrected.

MR. GRIFFON: I think that's right, and it's a compensable claim.

MR. SIEBERT: The tool's been corrected.

MR. FARVER: the tool's been corrected.

MR. SIEBERT: But it's a compensable claim.

MR. FARVER: It was a workbook situation. So this finding's okay as is 128.2 which was the same thing only it was improperly converted missed photon doses to organ dose. We'll see this one quite a bit from here on out.

MR. GRIFFON: 128.3 then.

MR. FARVER: 128.3, the intake mode listed in the IREP is not consistent with the DR. The IREP sheet lists the employee's intake as a chronic intake; however, it should be acute.

MR. SIEBERT: It's the other way around. It was listed in IREP as acute. It should have been chronic.

MR. HINNEFELD: These are internal dose numbers, right?

MR. FARVER: Yes, internal doses.

MR. HINNEFELD: Yeah, internal doses are

always chronic. And in terms of the IREP input sheet the dose rate is always chronic. It's the dose rate on the IREP input sheet that's the dose rate that's always chronic on the IREP input sheet for an internal dose.

MR. GRIFFON: So it was calculated correctly but the IREP, was the IREP --

MR. HINNEFELD: No, the IREP dose rate was run incorrectly. It was listed as acute instead of chronic.

MR. FARVER: Oh, it was split into two timeframes, that's what it was. So half of it from '54 to '80 in IREP was listed as chronic. And from '81 to '95 it was listed as acute when it all should have been chronic.

MS. MUNN: So you rewrite it and it didn't change it.

MR. HINNEFELD: Didn't change.

MS. MUNN: No change.

MR. FARVER: No, and this is not so much a dose concern as it is a QA concern.

MR. GRIFFON: No change or insignificant? It had to change something.

MR. HINNEFELD: No, it doesn't have to change. That DVREF only comes in at fairly

high dose rates. So until you get to a relatively high dose rate, acute and chronic will give you the same number.

MR. FARVER: 128.4, intake mode listed in the IREP is not consistent with the dose reconstruction report, and this is for plutonium, and it's the same situation. The previous one was for uranium, I believe.

MR. GRIFFON: 128.4, I'm sorry, I missed that.

MR. FARVER: It's the same as 128.3, and it's for plutonium.

MR. GRIFFON: 129.1.

MR. FARVER: 129.1, we'll group that with 129.2, and this has to do with the range of dose conversion factors. Again, it's a Savannah River EDCW tool.

MR. GRIFFON: So the same thing we had --

MR. FARVER: Same thing as the previous case. So both these findings, 129.1 and 129.2, have been corrected, and they're okay.

MR. GRIFFON: I assume had no effect on the case, right?

MR. HINNEFELD: This one's back for rework anyway. You're down to 129. Our response was

129.3, and this came back for rework. So it'll be done using the correct techniques.

MR. GRIFFON: Is it after rework under a PER review?

MR. HINNEFELD: Yeah. It's a Super-S Plutonium PER.

MR. FARVER: 129.3, failed to properly account for all the missed doses, missed photon doses.

MR. SIEBERT: Was an LOD over two issue.

MR. GRIFFON: Yeah, we've had that a few times.

MR. FARVER: Yes, the LOD over two issue. That's been corrected, so that's okay on that finding.

MR. GRIFFON: That was 129.3. And this has been corrected in PROC-6, right?

MR. FARVER: Yes. Where has the LOD over two been corrected? PROC-6?

MR. HINNEFELD: Actually, the correction looks like it's in --

MR. GRIFFON: Is it in the IG-001?

MR. HINNEFELD: Rev. 2 of the IG.

MS. BEHLING (by Telephone): I believe they're also trying to make a correction to

the workbook so this is done automatically, and the dose reconstructor doesn't have to look at this issue.

MR. SIEBERT: Yeah, that has long since been changed.

MS. BEHLING (by Telephone): Okay.

MR. FARVER: 129.4, NIOSH did not properly account for all the assigned neutron dose. This goes back to the photon dose to organ dose findings because they used a different range of DCF values, and to do neutron doses you do a neutron-to-photon ratio. It would affect the neutron doses. So that's being corrected.

MR. SIEBERT: In other words the neutron dose was done correctly at the time with what it was based upon. It's just what it was based upon changed.

MR. FARVER: Correct.

129.5, failure to account for internal doses from all fission products. I believe this takes us back to OTIB-0054.

Kathy, do you have any input on this one?

MS. BEHLING (by Telephone): This is the

same issue that we discussed before, the fact that they selected the highest, the radionuclide that gave the highest dose for, rather than looking at all of the fission products and the contribution from all missed radionuclides. So this is what we discussed before.

MR. GRIFFON: Is this particular one based on urinalysis or based on whole body? It looks like urinalysis.

MR. SIEBERT: Sure, it's whole body count. I have to look for sure, but --

MS. BEHLING (by Telephone): It's whole body count --

MR. SIEBERT: -- based on the highest. Yes, it's whole body count.

MS. BEHLING (by Telephone): It's whole body count, and this is the issue that they indicated they may add something to OTIB-0054 regarding whole body counts.

DR. MAURO: And this was a denial. Is that correct?

MR. HINNEFELD: Oh, yeah, it came back for PER, so it must have been.

DR. MAURO: So it's not --

MR. HINNEFELD: It's not compensable. If it were to come back under a PER, we're only looking non-compensables.

DR. MAURO: No, the only reason I brought it up is because it looks like you overestimated, used the worst radionuclide rather than some appropriate mix. And now it's coming back for PER, certainly not true for this but for some other reason.

MR. HINNEFELD: This is Super-S. Our response on 129.3 is we list what the reason is it's coming back, Super-S.

MR. GRIFFON: All right.

MR. FARVER: 130.1, we'll do 130.2, and it's the range of dose conversion factors again, improperly converted --

MR. GRIFFON: They're both the same --

MR. FARVER: -- dose to organ dose. And it's been resolved.

130.3 is the missed photon doses, LOD over two issue. So that's been corrected. And this claim has also been reworked to evaluate the Super-S Plutonium.

130.4, failed to properly account for all missed neutron doses. Basically, NIOSH

could not assign any neutron exposure, and the employee worked in the 400-D Area reactor facilities of Savannah River Site. We thought they should have some missed neutron doses for the years the EE worked at the reactor facilities.

NIOSH's response is that the neutron dose would have been accompanied by approximately five times the photon dose. Since they were either low or no photon doses in the years he was at the reactor, it's not likely there should be a neutron dose. And my only question is -- and I'll just kind of go to John -- I guess we're okay on the neutron-to-photon ratios with Savannah River?

DR. MAURO: Well, I don't know about Savannah River, whether or not that is on the front burner. I don't recall that being something --

MR. FARVER: I know we were questioning some of the Hanford --

DR. MAURO: At Hanford, yeah, but I don't know about Savannah River.

MR. HINNEFELD: I think there's additional investigation going at Savannah River as well

on neutron-to-photon ratios, I think.

MR. SIEBERT: It's on the table after --

MR. HINNEFELD: After Hanford, after the Hanford investigation, I think they're going to --

MR. FARVER: Since their response is based on the neutron-to-photon ratio being correct --

MR. HINNEFELD: I think there might have been another possible avenue of response here. I believe our Savannah River guidance has certain job titles in the reactor areas where you would consider them neutron exposed. Not everybody in the reactor areas is considered neutron exposed, but there are certain job titles that are. So our response may, we may be able to speak to that. I don't know what this guy's job title is.

MR. FARVER: Operator, foreman and supervisor in heavy water operations.

MR. HINNEFELD: Heavy water operations wouldn't be the issue. It would be to do with the reactor.

MR. FARVER: No, but I'm sure that was leading up to he was operator or foreman of

something, and then --

MR. HINNEFELD: I forget which job titles, but there are certain job titles which are specified as potentially neutron exposed in the reactor area. Reactor operator, I think, was one, but I don't remember. I'm not sure, maybe not.

MR. FARVER: The only concern there was if the NP ratios were correct.

MR. HINNEFELD: Maybe not.

DR. MAURO: Are you saying in here that you were using --

MR. HINNEFELD: Yeah, but I mean the photon should be an indication. If it's a photon-to-neutron ratio's okay, there should be a concomitant photon along with it.

DR. MAURO: I see according to the responses that you have five-to-one ratio neutron-to-photon, that's pretty high.

MR. HINNEFELD: Photon ratio.

DR. MAURO: Unless I'm reading this incorrectly. Neutron would have been accompanied by approximately five times.

MR. HINNEFELD: Five times as much.

DR. MAURO: Oh, okay, I didn't --

MR. HINNEFELD: It should read five times as much photon.

DR. MAURO: I'm used to the reverse.

MR. FARVER: Okay, are we ready for 130.5?

MR. GRIFFON: Uh-huh, yep.

MR. FARVER: Prior TBD revision used to determine medical doses. Basically the medical dose TBD that's referenced in the DR report is not the one that was used to calculate the doses is what it comes down to. And dose reconstructor consciously chose to leave the X-ray doses as is due to the newer values being lower. Although this is claimant favorable, NIOSH agrees that the latest version of the TBD should have been used.

MR. GRIFFON: That's closed. I mean, we've got NIOSH agrees.

MR. FARVER: 130.6, calculational method underestimates fission product dose. I've read NIOSH's response, and I agree with their response. We agree with 130.6.

MR. GRIFFON: Right.

MR. FARVER: Yeah, and they did give a good, thorough response.

DR. MAURO: Would this go in our database as

a QA concern in the box? See, you have an okay, the answer is the response to your question but is there something that would go into the little scorecard as a QA concern?

MR. FARVER: Well, I put the QA concern because it was, they used a different version of the TBD than what was referenced.

MR. GRIFFON: So I guess as we've seen often here, you responded to one but then you adjusted the tritium instead of being so claimant favorable, I mean, you're doing this on the fly I'm thinking or did --

MR. FARVER: Oh, no, I went to look at this case.

MR. GRIFFON: Oh, no, it's okay, because my question is, is that appropriate, I mean, the first time through you assumed tritium exposure for a number of years. And then you went back and said, well, now we're only going to assume it when he was monitored, right? Is that the essence of it?

MR. FARVER: It goes into the next finding. The next finding has to do with the tritium dose.

MR. GRIFFON: Yeah, so these two may

overlap. I mean, I --

MR. FARVER: Well, you're reading about how they changed the tritium dose, and that has to do with the next finding.

MR. GRIFFON: Oh, okay, but I'm saying you're about to close one out. That's why I'm asking if they overlap or can we still close that one out.

MR. FARVER: Yes, we can close it out.

MR. GRIFFON: Let's go on to the next one then, and I'll listen and see if I agree with closing it out.

MR. FARVER: Okay. 130.7, underestimates tritium dose. The tritium dose is from the --

MR. GRIFFON: I mean, here you're saying they underestimated it, and in 130.6 they lowered it.

MR. FARVER: Correct. The tritium dose is from the workbook used by NIOSH does not account for years when no tritium sample was submitted; and therefore, underestimates the tritium dose. That was our initial finding. And this goes back to the DR report that says, that has written in it, for years where no tritium samples were submitted, a dose equal

to the maximum tritium measured dose was assigned. And based on what we said, no, you didn't do that. And NIOSH's response is, well, the DR should have read where no tritium samples were submitted, no tritium dose was assigned, which is probably more correct.

MR. GRIFFON: And which was, I guess the assumption here is that any years in the tritium areas they would have definitely been monitored, right?

MR. SIEBERT: Their tritium monitoring was simplistic enough to keep it up. They just did it.

MR. GRIFFON: I mean, that seems to make sense. I just don't know if anybody examined that issue.

MR. FARVER: Yes, I believe that's come up before.

MR. GRIFFON: Okay.

MR. FARVER: And then they went back -- okay, and this is where we talk about where they adjusted the tritium dose. Apparently, they were using the maximum values, and I believe that you change it from maximums to actuals or something.

MR. HINNEFELD: Do you know, Scott?

MR. SIEBERT: Well, ^ for the unmonitored years, the 355 millirem should have went to zero because they weren't being monitored.

MR. FARVER: Correct.

MR. SIEBERT: Rather than overestimating what the maximizing, we just went with more realistic.

MR. GRIFFON: I guess what I'm trying to understand is, is your initial finding, 130.7, said that the DR underestimated the tritium dose, and that was when they were including dose for unmonitored years. So I would have thought you would have concluded almost that they overestimated it. I don't, I guess I'm trying to follow these two together.

DR. MAURO: I mean, it sounds like there was a judgment made here that if the person wasn't monitored for tritium, there was no need to monitor for tritium; therefore, we should not assign any tritium dose as opposed to what was done earlier where apparently you were, as a matter of routine, assigning some tritium dose perhaps if the person was in a reactor area --

MR. HINNEFELD: Probably just as an

overestimating --

DR. MAURO: As an overestimating --

MR. HINNEFELD: -- as why not just give it to him as his whole career. There's no ^ technique and get the case out of here.

MR. GRIFFON: And as you give him the best estimate, you got a narrowing, right.

DR. MAURO: But that's a pretty important transition. In other words you're confident then that if there was any potential at all that there was some tritium exposure, that there would have been a urine sample collected and an analysis done. And that's really where you're coming down as opposed to this earlier assumption where you --

MR. HINNEFELD: Right.

MR. GRIFFON: And the other note I had on my notes was does this jive with his work history, with the individual's work history. In other words was he in those areas, in those buildings, in that job and for whatever reason got overlooked.

DR. MAURO: The way I see it is there's a way in which you could confirm that assumption. That is, normally you pull a

silicon gel air samples in an area that has airborne tritium samples. And if the area that he's working in, dose samples were being pulled, but he was not getting a bioassay, then that would sort of belie the assumption you made.

I don't if -- see, I like the idea that if you do, if you are gonna go down the road you described, one way to confirm it is -- in addition, we know, the weight of evidence is such that there likely was no tritium issue here because there was no tritium air sampling going on.

I'm just assuming that because I know way back when when I was at these sites, if there was always a -- if there was any possibility of tritium, you had silica gel pulling an air sample, and you collected it and monitored for it. So for this person, if there was none of that going on where he was working at that time, that would sort of confirm your assumption.

MR. SIEBERT: Looking at the actual bioassay records, when he was in areas where tritium was needed, he's leaving it every week or two.

MR. HINNEFELD: And there were locations ^.

MR. GRIFFON: And you're saying his work history suggests that before he started leaving tritiums, he wasn't in those areas. He was somewhere else. You have that documented? I mean, you can crosswalk that is what you're saying. Because I, you know, we're only talking, what, 300, I mean the maximum is 350 millirem a year. But obviously, this must be a close case or else you wouldn't have stripped that away from this guy.

MR. FARVER: Well, I mean, there are specific years when there were just no tritium results, '64, '73 and '75 to '81. So for those --

MR. GRIFFON: Yeah, it's a missing data question.

MR. FARVER: -- and I'm kind of like Scott. If he would have been needing it, he would have had something that year. He would have submitted a sample. If he worked there for three months, he would have had three months worth of samples.

MR. GRIFFON: Yeah, it seems like, I mean, I

guess I'm just asking --

MR. SIEBERT: I mean, it's just generally one of those things we've seen at Savannah River, but there's either a lot of tritium sampling when they're working there or there's not.

MR. GRIFFON: I guess I would just -- because it seems like it is a close case, otherwise, you wouldn't have bothered to reduce this little amount of tritium dose, so I think it would probably be worth -- I don't know. If there was a way to at least check the work history and say, look, he was in this other area. That's why you don't see anything for these two prior years. And then he moves in here, and obviously, the tritium, every week we see it, you know? I guess I still have that question anyway.

MR. FARVER: I'll look into it.

MR. GRIFFON: Well, I think it's a NIOSH action probably.

MR. HINNEFELD: I'll see what we have. We might have some work assignment cards from Savannah River.

Is it Savannah River?

MR. FARVER: Yes.

MR. HINNEFELD: We might have some work assignment cards from Savannah River that would indicate the person's work assignments.

MR. GRIFFON: Okay.

MR. FARVER: Case 131, 131 the finding, 131.1, dot-2, dot-3, see if we can get rid of all of them.

MR. GRIFFON: They're the same DCF?

MR. FARVER: I think so. The first finding, two findings are DCFs range that we've dealt with in the last two cases. And the third finding is LOD over two and the missed photon dose.

MR. GRIFFON: All right.

MR. FARVER: Finding number four, improper method used to calculate electron doses.

MS. CHANG (by Telephone): I think we could do a little bit of them --

DR. BRANCHE: Chia-Chia?

MR. GRIFFON: No, really, we're interested in what you have to say, Chia-Chia.

MS. CHANG: Bye.

MR. GRIFFON: All right, 131.4 we're on, right?

MR. FARVER: Yes. I'm trying to figure out what I wrote here. I think this is another one where I'm going to go back and review OTIB-0017. This also has to do with a breast dose and shallow dose. Because my notes say how were the doses calculated, single DCF or a range. And I want to go back and look at some of that.

MR. SIEBERT: Well, but the finding was that we didn't do it per OTIB-0017.

MR. FARVER: Correct. And that's why I want to go back and look at that.

MR. SIEBERT: OTIB-0017 wasn't published for four months after this assessment was finished.

DR. MAURO: And had you used it --

MR. SIEBERT: Had we used it, it would have gone down.

MR. GRIFFON: And it would have been a lower, right.

MS. MUNN: Okay, acceptable?

MR. FARVER: I think it'll be acceptable.

MR. GRIFFON: Well, what was the, what was in place prior to OTIB-0017? Was it just -- I guess that's the question.

MR. FARVER: OCAS IG-001.

MR. SIEBERT: That was pretty much a straight interpretation of IG-001.

MR. GRIFFON: Right, so it was from IG-001.

MR. SIEBERT: Which is why we wrote OTIB-0017.

MR. FARVER: Yeah, I'll look at it.

MR. GRIFFON: Yeah, you can follow up on it. I mean, we understand your point though, Scott. TIB-0017 wasn't in there.

MR. FARVER: 131.5.

MR. GRIFFON: You should have anticipated TIB-0017.

MR. FARVER: The findings fail to properly account for all missed electron doses, and NIOSH gives an explanation of what they did.

MR. GRIFFON: Is this another case that's being reassessed in Super-S?

MR. FARVER: Yes.

MR. HINNEFELD: It is back.

MS. MUNN: Another Super-S.

MR. FARVER: I don't have a concern with what they wrote in their response. And part of this does go back to the fact that OTIB-0017 wasn't in place at the time.

MR. SIEBERT: And also LOD over two.

MR. GRIFFON: It is an LOD over two thing, yeah. So I think we're okay there, right?

MR. FARVER: Yes, we're okay.

131.6, failure to account for internal doses from all fission products. We've had this a few times today. And OTIB-0054 provides guidance for evaluating fission products, but this was also related to whole body counts. So this is where we're going to be comparing OTIB-0054, but they don't mention what they were currently using.

Now on to case 132.

MR. GRIFFON: 132.

MR. FARVER: Which is another Savannah River case so you can guess what the first three findings will be.

DR. BRANCHE: You're taking out all the mystery.

MR. GRIFFON: We've got DCF, DCF and LOD.

MR. FARVER: The first three findings once again have to do with, the first two are the range of DCFs. The third one is a little different.

MR. GRIFFON: It's not LOD over two.

MR. FARVER: It's not LOD over two. It's inappropriate exposure geometry, and it has to do with should you use AP or should you use rotational ^.

So 132.3 and 132.4 are both dealing with the exposure geometries. And this case is going back for a rework under Super-S.

Now 132.5, there's the LOD over two finding. I knew it would be there.

MR. GRIFFON: Okay, 132.6.

MR. FARVER: 132.6, improperly converted recorded shallow doses to organ dose, and it's just the same as the previous. So 132.6 and 132.7 have to do with -- oh, that's the range of DCFs that we talked about earlier. And then the missed photon dose, the LOD over two.

Where are we at, eight?

MR. GRIFFON: Yeah, I thought you were 132.6 and .7 you just did, right? Now we're up to eight, 132.8. I thought I lost you. You were just talking about LOD over two.

MR. FARVER: That's part of 132.7. It's a missed shallow dose to organ dose I believe that was part of it. No, I must have had the wrong page. It is strictly the DCFs.

MR. GRIFFON: Yeah, I didn't think it had anything to do with LOD. Okay, 132.8.

MR. FARVER: Improperly converted neutron dose to organ dose. Sounds like DCFs.

MR. GRIFFON: Right, it's just a three different, yeah.

132.9.

MR. FARVER: Reviewer questions whether the EE was exposed to Type S-Super Plutonium. And since the case is --

MR. GRIFFON: Under PER review.

MR. FARVER: It's been returned for consideration. The question I had was does the NIOSH response, does that contradict the one up above it in 132.8. In other words the case has not been returned from DOL for Super S Plutonium evaluation.

MR. SIEBERT: I think the "not" shouldn't be there. I think it has been returned.

MR. PRESLEY: The same as 132.5 to say it's been returned.

MR. SIEBERT: It has.

MR. FARVER: I thought it contradicted.

MR. GRIFFON: Yeah, it has been, yeah. Get that out of there.

MS. BEHLING (by Telephone): Can we go back to findings 132.3 and 132.4? I would just like to ask a quick question. This had to do with a change that was made to the external implementation guide. And because of that change it has to do with the DCF values and whether to use an AP or in some cases for certain types of cancers whether they should apply a correction factor to that DCF value. Is this a PER issue? How do we identify whether there were other cases that may have been affected by this change to the implementation guide?

MR. HINNEFELD: Are you talking about here the organs where --

MS. BEHLING (by Telephone): Yes, for cases of --

MR. HINNEFELD: -- the AP is not the most, there are some organs where the AP is not the most favorable.

MS. BEHLING (by Telephone): Correct, for certain types of cancers such as bone, esophagus, lung cancers --

MR. HINNEFELD: Offhand I don’t know. I can find out. I know that in many cases, those

cases have come back for other reasons. For instance, very, very many cases came back or are coming back for Super-S Plutonium, very many. And it could be that these will all be addressed in that fashion, but I could take a look.

MS. BEHLING (by Telephone): Okay, I didn't know if there would be a separate PER for this external implementation guide or not.

MR. HINNEFELD: I don't know for sure our plan on that.

MR. GRIFFON: I think we need maybe a ten-minute break again. People are taking their own breaks, so I'm kind of taking the hint. People on the phone, I think it's just Kathy, but there might be others.

DR. BRANCHE: Well, Chia-Chia seems to be on the line.

MR. GRIFFON: Oh, yeah, there's a couple people out there. Ten minutes we'll get back at 3:27 eastern, thanks.

(Whereupon, a break was taken from 3:16 p.m. until 3:30 p.m.)

DR. BRANCHE: The Dose Reconstruction Subcommittee is starting again now.

Mr. Griffon.

MR. GRIFFON: We're picking up on case 133.1, which is which site?

MR. FARVER: That's a good question, Mound.

MR. GRIFFON: Mound, yes.

MR. FARVER: And 133.1, inappropriate method used for deriving missed photon doses, just LOD over two again. No, I think this is a little different. It has to do with using the minimum number of zeros or the median number of zeros. And I wasn't real sure of the response from NIOSH. I mean, I didn't really understand it.

MR. HINNEFELD: Well, I think it was an oversight in a reworked case that they had --

MR. GRIFFON: Yeah, I think they're agreeing with the finding.

MR. HINNEFELD: -- they stayed with the minimized. We essentially agreed with the finding and stayed with the minimized number as opposed to.

MR. FARVER: Okay, that's good.

DR. MAURO: In the reanalysis, I see you, in fact, looked at this case again from two cancers to one cancer, and it was originally

compensable. Is it now not compensable? I haven't seen that. In other words if it's still compensable, the fact they minimized and used zeros wouldn't really be problematic except it's a QA issue.

MR. SIEBERT: No, it's non-compensable with one cancer.

DR. MAURO: Oh, it became non-compensable. So it went from compensable to non-compensable, but you kept the zeros in. That needs to be fixed.

MR. GRIFFON: But did you assess that fix, and would it affect -- it would not affect --

MR. SIEBERT: It's back for Super-S.

DR. MAURO: Oh, it's back for Super-S.

MR. SIEBERT: We will be once we deal with the neutron issues.

MR. PRESLEY: Is it compensable or not?

MR. GRIFFON: It's non-compensable as it stands.

MR. HINNEFELD: It's not compensable the way this reviewed dose reconstruction is not compensable. Now, since this one has been done and reviewed by you guys, this case has been returned to us yet again, this time for

Super-S Plutonium. We also have a Mound technical issue that, neutron technical issue that we're sorting out. So that has to get sorted out, and ^ Super-S Plutonium and the case will be reworked, and these things will be corrected in rework.

DR. MAURO: This one's a laundry list of issues that you're going to be dealing with, only one of which will be the zeros.

MR. HINNEFELD: Yes, yes. There are a number of things that will be done, changed when it's done.

MR. PRESLEY: As it's corrected.

MR. HINNEFELD: The last time it went over it was non-compensable, and it's back again with us to rework.

MR. FARVER: 133.3, reviewer questions NIOSH's -- no, 133.2, inappropriate method used for deriving missed neutron doses. And this is again the minimizing or median zeros.

MR. GRIFFON: Okay, and so you have under the site profile review, you're also reviewing the neutron issue as you say here, right, Stu?

MR. HINNEFELD: Yeah, there's a neutron issue at Mound that we need to sort out.

MR. FARVER: 133.3, reviewer questions the selection of dates of uptake for positive bioassay results. There's a little bit of description here. Basically, on this one this is for plutonium. There were two chronic intakes assessed and one acute inhalation. And the reviewer questions the intake dates that were assigned. NIOSH's response was intake dates should be moved forward as suggested. Moving it forward will result in a lower dose based on smaller chronic intake rate.

MS. MUNN: Is that an okay result?

MR. FARVER: That's an okay.

MR. HINNEFELD: Except it's got to be reworked.

DR. MAURO: That's one on the list that perhaps would bring the dose down. The others might bring the doses up. This one might bring the doses down. Got it.

MS. MUNN: But for our purposes here --

MR. FARVER: It's an okay.

133.4, reviewer questions whether additional radionuclides should have been assessed. The employee was monitored for PU-

238 and -239, and referring to a table in the TBD he could have been exposed to secondary radionuclides. Since the bioassay program didn't include monitoring for these nuclides, should you assess for these secondary radionuclides? And my only concern with NIOSH's response is they just talk about plutonium, and they don't address the americium or neptunium or thorium that are also mentioned in the Table 5.2.

MR. HINNEFELD: Well, this is Mound. You guys should know a lot about Mound. You guys must know something about Mound.

DR. BRANCHE: We know it's in Ohio.

MR. HINNEFELD: I know you're conflicted that's why you know a lot about it. Do you have ^ anything about the non-plutonium isotopes? Americium --

MS. BRACKETT: Well, my guess -- I don't know the details of this specific case, but americium was associated with a Plutonium-239 mixture rather than -238, so that would be why that wasn't included. But a separate process that would be worked on that's not associated with the plutonium, I would have to look at

the details of this case to see ^. I don't remember when thorium showed up on site.

MR. GRIFFON: I mean, I guess the question is -- I'd have to look back at the case, too. Where this guy worked and --

MR. FARVER: He worked in Buildings PP, SW, and R.

MR. GRIFFON: PP, SW and R.

MR. FARVER: And according to Table 5.2 of the TBD, there are, may have been exposed to secondary radionuclides such as, and it lists radionuclides.

MR. GRIFFON: So you're going by the TBD for these buildings.

MR. FARVER: So if he worked in these areas, could he have been exposed to these nuclides, and if so, should they be assessed.

MR. HINNEFELD: Well, the case is being reworked, but it sounds like this needs to be addressed in some fashion.

DR. MAURO: Isn't Mound a, I guess, in an SEC mode right now?

MS. BRACKETT: Yes, I was going to say the TBD is being reworked, and specifically these kinds of nuclides are being addressed in the

SEC group right now.

MR. GRIFFON: So this may also defer to site profile as well as the --

MR. HINNEFELD: Rework of this.

MR. GRIFFON: -- rework, yeah.

MR. HINNEFELD: The rework of this case would probably have to wait until those questions are resolved in the SEC arena to determine where they're going to end up before this case is actually done.

MS. BRACKETT: Because there is a lot more research being done into these findings, program nuclides.

MR. FARVER: 133.5, reviewer questions the solubility class of the plutonium, and this is where the reviewer just points out the possibility of Super-S.

MS. BRACKETT: Right. If it was assessed as 238 then we wouldn't apply Super-S.

DR. MAURO: I was on a conference call on Mound recently. We had one of these question and answer sessions with Joe Fitzgerald. He's leading up the Mound evaluation report and Joyce was there, Joyce Lipsztein, and there was something about Plutonium-238 being high-

fired pellets off of these what-do-you-call units, these --

MS. BRACKETT: RTGs.

DR. MAURO: -- yeah, RTGs, and that those pellets themselves have a very interesting unknown clearance. They go in, and they don't clear immediately, but that they start to break up.

MS. BRACKETT: Yes, they're very insoluble to start with, and then it becomes more soluble over time. Actually, we're in the process of evaluating that. There has been papers published on this material. There's been one proposed model. We've gotten the data on that particular case and several other cases. The paper's based on a Los Alamos incident. And we have the data from six of the cases there, and we've been trying to find Mound cases that look like that. We haven't found that many that actually exhibit that behavior. We've plotted every single person at Mound who had plutonium bioassay results, and we've gone through all of the graphs to see if we could identify --

DR. MAURO: To see a pattern?

MS. BRACKETT: -- and it doesn't, I thought that we had seen a few cases like that when we did the dose reconstruction, but we're having a hard time identifying any. But we are working on a model for the Plutonium-238 of this particular behavior that's actively --

MR. HINNEFELD: This is this issue from the Mound SEC or assessment --

DR. MAURO: That's center stage, center stage. And I only bring it up because then it almost begs the question can we address the issue for this particular person until these issues are discussed.

MR. HINNEFELD: No, this case is back to us. It'll wait. It won't be reworked until these are resolved so that those answers can be put in place.

MR. GRIFFON: You said this case is being reworked for Super-S issues, right? Under the Super-S PER review it's being reworked, Stu? Or this first part says that this particular heat source plutonium is not Super-S. It's a different kind of issue, right?

MS. BRACKETT: Right.

DR. MAURO: Ceramicized. It was ceramics.

MR. GRIFFON: Ceramics, yeah.

MS. MUNN: Absolutely ceramic.

MR. HINNEFELD: Our judgment, Mark, about PER evaluations doesn't always match DOL's, and sometimes they return cases to us for rework other than the ones we have identified. So this one's back for that reason now. It's back and these things will be taken care of. Once these things have been taken care of, anything that's not returned by DOL would be addressed in the PER. Since we've changed the Mound approach, we have to have a PER for Mound. Anything that wouldn't be brought back would be brought back in that fashion.

MR. GRIFFON: I was just looking in terms of inconsistency in your responses, but really, it's a DOL decision, right?

MR. HINNEFELD: DOL returns what they want to return.

MS. BRACKETT: So basically nothing will happen with this though, right? We'll send it back and say Super-S doesn't apply to this assessment.

MR. HINNEFELD: Well, this case right now is going to be pending. This case is going to be

pended if no other reason than neutron issue as well as the various technical issues that are being debated in the SEC forum at Mound. And the resolution of those then will influence how this turns out. And chances are we'll just hold this one here.

MR. GRIFFON: Okay.

MR. FARVER: 133.6, reviewer questions whether all positive tritium results were accurately reported by the DOE. And I guess this just has to do with the reporting at Mound. They reported annual doses for tritium at Mound.

Is that correct, Scott?

MR. SIEBERT: If I recall, correct. Once again since I'm conflicted, I don't see Mound cases that frequently. But I believe that is correct, and we only get annual reporting for tritium.

MR. FARVER: I believe that's correct, too.

MR. CLAWSON: Do you mean the monitoring of the people was quarterly?

MR. SIEBERT: Well, the monitoring was more frequently. The only records that we get are annual roll ups as to what the dose was for

tritium.

MR. GRIFFON: So what's the resolution here?

MR. HINNEFELD: Which one are we on?

MR. FARVER: The assigned missed doses.

MR. GRIFFON: 133.6, so SC&A's okay with the way they assigned the missed doses?

MR. FARVER: Yeah, the question was did you get all the results from DOE, and I don't believe there were any more results.

MR. GRIFFON: All right, case 134.

MR. FARVER: 134.1, acute intake date does not correspond to incident date.

MR. GRIFFON: What site is this? I'm sorry.

MR. FARVER: This is another Mound site. The initial review found there was an incident date or an incident on a certain date that did not correspond to the acute intake date assigned by NIOSH. NIOSH's response is that the intake, the incident did not have an internal uptake. It was a positive dose swipe from contaminated hands.

MR. GRIFFON: A false positive.

MR. FARVER: A false positive. It was from contaminated hands. As such, a subsequent chest count was negative.

MR. GRIFFON: Is that what the investigation concluded, Scott, that it was due to contaminated hands?

MR. SIEBERT: That appears to be what the DOE concluded.

MR. FARVER: And I guess I, I don't have a --

MR. GRIFFON: Nothing new there.

MR. FARVER: No, but somebody has a positive no swipe, I usually have a little concern with that, but --

MR. GRIFFON: Well, the other question I have, and not looking at the case, you know, right now it may be tough to remember this unless you guys ^ funny on it, but it says subsequent bioassay chest count. Was this chest count done close to that date of this incident or was it well after?

MR. FARVER: That's in the next finding.

MR. GRIFFON: Oh, okay.

MR. SIEBERT: Yeah, that's what DOE said.

MR. FARVER: 134.2, the chest count --

MR. GRIFFON: Not all my questions lead to your next finding.

MR. FARVER: -- investigative incident

report was not included in the records. So even though they say in their documents that there was a chest count --

MR. GRIFFON: Oh, so the investigation report said there was a chest count done, but it wasn't in the records.

MR. FARVER: It was not in the records, which leads you to wonder what other data and incident reports were also missing. And I don't know how you resolve something like that.

MS. MUNN: Did I miss it, Doug?

MR. GRIFFON: It was a compensable claim, right?

MR. PRESLEY: That's what I'm going to say. 134.3 says it's compensable.

MR. GRIFFON: Yeah, so the bottom line at the end, right?

MR. FARVER: Yeah, that makes it even more difficult.

MS. MUNN: How far apart did you say the intake date and the incident, reported incident date were?

MR. GRIFFON: I don't know if, was it in the investigation report? You never found the

sample, but in the investigation report they must have said it.

MR. FARVER: Was involved in an incident in Building R-131 March of 1983 there was an incident. And in the documentation of the probably DOE investigation, it lists that there was a chest count taken, and that it was negative.

MS. MUNN: They don't say what date?

MR. GRIFFON: Doug, don't say what date?

MR. FARVER: Oh, I'm sure there's a date but it's --

MR. GRIFFON: Yeah, it's in there, but we don't have it.

MR. FARVER: I don't have it exactly. It's March of 1983.

MR. GRIFFON: But it was done right after the incident apparently, right?

MR. FARVER: It doesn't say what date the chest count was done. But it says in their report a chest count was done and was negative.

MR. GRIFFON: I guess if this was a non-compensable claim, I would be struggling here on what do you do. But it was a compensable,

right? I don't think NIOSH had to resolve it because it was compensable.

MR. SIEBERT: We assigned it in April of '83 as opposed to March of '83, and it's compensable so it would have just been up.

MR. GRIFFON: Right.

MR. CLAWSON: That still falls under the information and integrity of the information.

DR. MAURO: Unless they just said we've gone far -- very often they stop. In other words they'll stop. We're not going any farther, and then that's not unreasonable.

MR. GRIFFON: I can see the point here. Why pull the string if you don't have to.

MR. FARVER: You know, on one hand you're wondering what happened to the lung count --

DR. MAURO: On the other hand, you don't need it.

MR. CLAWSON: But where it is compensable, but the bottom line is it still gets back to, you know, they're saying one thing. There's no data there.

MR. GRIFFON: Oh, yeah, if you're looking in terms of the overall site --

MR. CLAWSON: Right, that's what I was

looking at.

MR. GRIFFON: -- you're wondering, right, where is the data, and does this happen often. Then you'd be really concerned.

MR. FARVER: 134.3, do not properly address incidents in the CATI or DOE reports. And this is just, I know this is boilerplate from the template. It says right here in the CATI report section, no incidents were discussed in any interview or were found in the dosimetry records. Well, that's just not true. There was a lot of records. And NIOSH's response was, yes, they should have been included. So it's okay, 134.3.

MR. GRIFFON: Right, but it does get back to that, and I think we're going to bring that DR report template back to this group because, I mean, the benefits of a template are obvious because you want consistency. But the downside is that it is also obvious that you just fall into that trap of answering everybody the same way instead of really dealing with the question that's raised in the CATI. You just kind of --

MR. FARVER: There were several instances in

the CATI report that were mentioned about the employee had to be scrubbed down, had to leave urine samples, restricted due to an injury, and was several, many pages in the DOE records. So I'm going to bring this back to another QA concern. It's in the CATI. It's in the records, but it doesn't get caught in the DR.

DR. MAURO: Does the DR say something to the effect that though this was stated this was in the records, we did not pursue to get it because we didn't need it?

MR. FARVER: No incidents were discussed in the interview or were found in the dosimetry records.

MR. SIEBERT: Well, in the next sentence there's no information was raised in the interviews suggest the dose estimates in the dose reconstruction were not claimant favorable, which once you get the compensable part --

DR. MAURO: It's over.

MR. SIEBERT: -- it's a decided point. But we agree that that should have stated that rather than putting that paragraph in, should

have said it was not needed because we're already --

MR. GRIFFON: It's already compensable.

DR. MAURO: Because I see that all the time.

MR. FARVER: Now 135.1, a Y-12, K-25 case. The DR did not properly account for all potentially missed doses.

MR. GRIFFON: This is Y-12, K-25, both sites?

MR. FARVER: Yes. And I agree with NIOSH's response. I guess I have a question probably more because I'm not familiar with the Y-12 and K-25 cases. Was this a workbook error, and it was something that was corrected?

MR. SIEBERT: Unfortunately, I can't answer that because this is not my, Y-12's not my site.

MR. FARVER: The finding goes to missed photon dose should have included missing quarters of dosimetry data as well as zero entries. And I was just asking if this was a workbook error, you know, the counting of zeros so to speak.

MR. GRIFFON: This one must have also been a close POC I'm assuming. I don't know.

Liz, do you have that list of the POCs? I'm wondering in that first part of --

MR. SIEBERT: 46.77.

MR. GRIFFON: The first part of 135.1 you, I mean, my question is, is this a missed dose or unmonitored, or did you use a coworker to substitute for those missing periods of time not having looked at the case. I was just looking at the matrix. I didn't pull the case out.

MS. BEHLING (by Telephone): It seems to me there was some missing quarters as well as some zero doses. I think there should have been some unmonitored dose.

MR. GRIFFON: That's what I was asking, Kathy.

MR. FARVER: I mean, and their response says missed photon dose should have included the missing quarters of data as well as the zero entries. The necessary corrections were made and the dose increased to the point that it was necessary to reexamine the other assigned doses. In other words it was --

MR. GRIFFON: Give some, take away some other parts. It was enough to fine tune the

other calculations. And I guess you looked at the ambient dose because it was almost like you were double assigning, I think, right?

MR. FARVER: Correct. And I believe there's an --

MR. GRIFFON: Which makes sense.

MR. FARVER: -- attachment or a table in that procedure that says if the employee's monitored, you don't assign ambient dose. And I'm assuming that's probably what you went to and said, well, we don't assign ambient dose.

MR. GRIFFON: Right, which is fine. My question is in those quarterly, missing quarters or whatever, how was that filled in with dose. Was it --

MR. HINNEFELD: Yeah, your question is should the missing quarters, should they really have been missed or should they have been coworker --

MR. GRIFFON: Monitored.

MR. HINNEFELD: -- or monitored coworkers. Well, I don't know.

MR. FARVER: In other words how were the necessary corrections made?

MR. GRIFFON: Right. So I think we'll put a

NIOSH follow up on that one.

The 135.1, we're still on it. That's the one we're on. We move slow.

MR. FARVER: We're not through beating it yet.

Okay, finding 135.2, EE should have been assigned missed neutron doses.

MR. GRIFFON: This gets into the work location question for Y-12 I assume, right?

MR. FARVER: Well, there's a couple ways you could look at it from missed work location or this is what those NIOSH folks are hinging on, there's a Part Two Neutron Radiation Report that basically says if you didn't receive a dose in a certain timeframe, then you're not likely to get a neutron dose. And therefore, they don't assign neutron doses. Now I don't necessarily agree with that document, but that document's been approved, and that's what it says. So I would have to stick by their response.

MR. GRIFFON: Well, at the bottom of that response I have a question. If a worker ^ in an area where the source of neutrons, the film was not processed and a zero was recorded for

the neutron dose for that monitoring period, my question was how do you distinguish if it was processed did they record a, say it was processed, and it was less than detectable, would they put less than detectable or would they put zero? And if they're recording zeros in both instances, how do you distinguish?

MR. HINNEFELD: I think probably the attempt to distinguish would be based on, in this case it was based on the person's job title and the types of materials in 9212 that might give rise to neutron dose. If I'm not mistaken, the 9212, the potential neutron exposure in 9212 was from enriched uranium, thorium. And if someone is a machinist, they're going to be machining uranium or some other metal as opposed to --

MR. GRIFFON: Well, I understand that rationale, but Doug was just describing the other protocol which I think you're using which is this other thing described in the first paragraph. After what I just said you say, "Therefore, workers that had no positive neutron doses," so I guess you're saying --

MR. HINNEFELD: I think the first part of

this response explains why there would be a zero in the record, a neutron zero although there really was no potential exposure for neutrons. See, that's what they're saying is that the film included a neutron component. The badge included a neutron component. They wouldn't necessarily read it if they felt like there was no --

MR. GRIFFON: Yeah, but what I'm saying is how do you know if it was a real zero or if it was a zero meaning less than detectable. I mean, maybe they didn't put down zero for less than detectable.

MR. HINNEFELD: From looking at the record I don't think there's a way to determine whether it's a we didn't process or there's no potential exposure, and we didn't process the zero. Or if there was a potential exposure, we'd process it. If it's less than limited detections you can put a zero down. From looking at the record I don't think there's any way to tell. I think the way to try to distinguish what it might be and what is the potential exposure to neutrons is from the person's job title.

MR. GRIFFON: Going back to the job location.

MR. HINNEFELD: The job title and locations where he worked. So that's how that determination was attempted to be made.

MR. CLAWSON: That's correct.

MR. HINNEFELD: So that was how. Now there's an outstanding issue with this RPRT-0033 and the site profile and what's the correct list of neutron sources. Can that be explained better? And can that come up better? So that issue is out there already, which the resolution of that could, in fact, affect this. But as the information was provided, I think the determination or the decision that this person doesn't appear to have been neutron exposed was based largely on their job title.

MR. PRESLEY: He worked in the machine shop.

MR. FARVER: For a certain time period they were listing zeros, so you would think he'd assign --

MR. GRIFFON: Yeah, right. And that's what I was getting at. You don't, you can't tell if it's a zero or if it's a zero meaning not

processed.

MR. HINNEFELD: Less than LOD or not processed. You can't tell from looking at the record.

MR. GRIFFON: So you're deferring back to the process buildings for your determinant.

MR. HINNEFELD: And job titles.

MR. GRIFFON: So this is being discussed in the site profile. No, it's not. I'm writing the site profile.

MR. HINNEFELD: You're writing the site profile. You can talk about whatever the heck you want.

MR. GRIFFON: Well, you said it had come up though. Where is it --

MR. HINNEFELD: In their dose reconstruction report.

MR. GRIFFON: So I guess we'll have to pull back into that site profile discussion though.

MR. HINNEFELD: I think we would not, I think we don't want to lose it.

MR. GRIFFON: Right, we don't want to lose it.

MR. HINNEFELD: And it would be we either need to resolve it here --

MR. GRIFFON: It is a site profile-type issue.

MR. HINNEFELD: -- it is a site profile-type issue.

MR. GRIFFON: And Jim Neton actually recently e-mailed me asking something about Y-12 to close it out.

MR. HINNEFELD: What's the final list of items that were still on the table when the SEC decision was made? It doesn't affect the site profile.

MR. GRIFFON: So I think we might, that might be a good impetus to get that back on the table.

MR. HINNEFELD: And like I say you could say and by the way this one is, there's this issue that's come over from DR review that we also need resolved with the Y-12 site profile.

MR. GRIFFON: So I'm going to put we're going to defer that one to the site profile.

MR. CLAWSON: Are you sure you don't want to give it to Procedures to review?

MR. GRIFFON: I'd love to give it to Procedures, but --

MR. CLAWSON: I just thought we kind of

missed our opportunity there.

MS. MUNN: There is no opportunity that exists. Shall I read for you the charter of the Procedures work group?

MR. CLAWSON: No, thank you.

MS. MUNN: Or do I need to hold up a big sign?

MR. FARVER: Number three?

MR. GRIFFON: Yes.

MR. FARVER: 135.3, unable to reproduce the internal dose from missed thorium dose from in vivo analysis. Reviewed their files that they sent, and -- did you send those files? No, those were --

MR. GRIFFON: Were these files in the initial --

MR. HINNEFELD: I don't know if these files were included.

MR. FARVER: Oh, those were the original files in the case because I know I've looked at them. I agree with their response. Basically, they used IMBA to calculate the intake rates, then you plug that into the CADW workbook. So it's okay.

MR. GRIFFON: Because of the limits of IMBA,

yeah.

DR. MAURO: We're on 135.3?

MR. FARVER: Yes.

DR. MAURO: I just read the response. A person inhales the Thorium-232, and we have a bioassay or some method of estimating the intake of Thorium-232. And what I'm reading here is, of course, you've got the Radium-228 with its five year half-life rolling in. So he's probably taking in some, he might be taking in some Radium-228 along with the Thorium-232 in his work setting depending on what he's working with. But what I understand here is that, okay, now the Radium-228 is going in while the Thorium-232 is sort of stuck in his lungs. What do you do to account for that? I guess I didn't follow from your answer. What do you do about that?

MS. BRACKETT: We don't need to do anything. In addition, the software takes that into account. The problem is the coding within IMBA doesn't properly take it into account. It follows the previous ICRP-30 method where it assumes that all of the daughters stay with it, but there's independent kinetics for the

progeny following their own models, the newer models. IMBA cannot handle that, and so IMBA does correctly calculate the intake since it's based just on the parent. But the dose, we have recalculated the dose conversion factors based on -- well, Keith Eckerman actually helped us.

DR. MAURO: Keith put it together for you, okay.

MS. BRACKETT: DCAL, now we actually have DCAL, and Tom LaBone runs that if we need to do something. So we just calculated it based on the current model.

DR. MAURO: Yeah, we have DCAL provided to us also. Okay, quite frankly I wasn't aware -- so all the progeny in IMBA are treated biokinetically as their parent then.

MS. BRACKETT: And so there are several where IMBA is inaccurate, and in fact, we've gone through and where, they've all been updated in CAD-W. They're currently, the thorium numbers are documented in OTIB-0028, and that's in the process, it's been updated, and it's in review for other nuclides. The rest of them aren't as seriously off as the

thoriums were, but we have gone ahead and --

DR. MAURO: This could be a big one, yeah, because ^ coming in.

MS. BRACKETT: Right. The numbers that you get in IMBA are generally, some of them are three-to-four times larger than they should be because of the way it --

DR. MAURO: Because of the biokinetic -- oh, yeah, the thorium is going to be in the body much longer than the radium would be I would imagine. As the radium's going in it's going to move out more quickly than the thorium's going to move out.

MS. BRACKETT: Right, and it goes to different organs.

DR. MAURO: It can go different places. But you're saying the wherewithal exists to be able to deal with all this.

MS. BRACKETT: Yes, yes.

MR. FARVER: 135.4, tritium exposure reported by the EE in the CATI not considered in the DR. In the CATI report there's a section three on detailed work history. In that part the employee checked that he was exposed to tritium. There was no tritium

bioassay records and NIOSH did not assess a tritium dose. So our concern was since the employee said he was exposed to tritium, should he be assessed a tritium dose.

MR. HINNEFELD: Well, our response is oftentimes on CATI information where it's check a box or something like that, that we will, we kind of weight heavily the site activities and what we know about what we're getting from the records from the site and locations at the site where particular things might have been.

For instance, he may have known there was tritium at Y-12 so felt like he was exposed to it and checked that box, when, in fact, he perhaps wasn't particularly in a location to be exposed to tritium to any degree. He just knew it was there so he checked the box.

MR. GRIFFON: Is this a survivor claim, do you know?

MR. HINNEFELD: I don't know. I guess Scott could find out.

MR. GRIFFON: If it wasn't, was there any attempt to follow up with the individual?

MR. HINNEFELD: I don't know. I don't know.

MR. FARVER: Are there other tritium results for K-25 and for Y-12?

MR. HINNEFELD: I don't recall. I haven't seen any doses reconstructed for a long time. I don't remember seeing any tritium --

MR. FARVER: I mean, if there were other tritium results and none for him, then I might say, well, maybe he wasn't monitored.

MR. HINNEFELD: Yeah.

MR. SIEBERT: They were doing them.

MR. GRIFFON: Yeah, at Y-12 I would imagine there were at least some, weren't there?

MS. MUNN: Personnel engaged in processing materials with potential were required to submit three urine samples a month for analysis.

MR. HINNEFELD: I don't know enough about where tritium might have been used at Y-12 to really have an opinion.

MR. GRIFFON: I'm just pausing for a second to see if you know if it was a survivor claim or a --

MR. SIEBERT: No, it's the EE.

MR. GRIFFON: The claimant?

MR. SIEBERT: Yeah, the claimant is the EE.

MR. GRIFFON: And no attempt was made to contact them about the CATI or any --

MR. PRESLEY: He was a machinist --

MR. GRIFFON: -- that seems like an obvious thing to me if you're not sure.

MR. HINNEFELD: Our earlier responses say he was a machinist.

MS. MUNN: Based on the workbook.

MR. GRIFFON: And to me sometimes a simple phone call can clarify these things, too. And again, that may or may not be warranted in this case. I don't even -- if it was a close case. I guess I would think it would have to be a close case if you're worried about tritium dose. I don't know what the POC was on this one.

MS. BEHLING (by Telephone): Forty-six percent.

MR. GRIFFON: Forty-six percent, so you're getting up there.

MS. BRACKETT: I didn't think there was much potential for tritium.

MR. GRIFFON: Right, right.

DR. MAURO: Yeah, I don't remember. We had

the Y-12 site profile review, and I know we spent a lot of time worrying about uranium --

MR. HINNEFELD: Thorium.

DR. MAURO: -- thorium.

MR. HINNEFELD: Cyclotron products.

DR. MAURO: -- yeah, but I don't remember talking about tritium, but it could be in there. I'd have to go check.

MR. FARVER: It's in the technical basis document.

DR. MAURO: It is in the TBD.

MR. FARVER: Yes, however, the internal dosimetry program has included limited monitoring --

MR. GRIFFON: I'm definitely sure there was some.

MR. FARVER: -- cesium, technicium, thorium, plutonium, actinium and tritium among other radionuclides.

MS. BRACKETT: I remember in the '90s there was an incident there with tritium, but it involved gun sites. There was some leaking on them. There was some tritium, but that's pretty minor, and that's not a machinist working with...

MR. FARVER: And that's just why I ask has anyone seen other tritium data from Y-12.

MR. HINNEFELD: I've very rarely seen cases anymore. I don't remember seeing any. Normally, the Y-12 bioassay is uranium, either mass or activity units. Oftentimes there'll be whole body results, or ^ tell you that.

MS. BRACKETT: Or Doug.

MR. HINNEFELD: Or Doug.

MR. GRIFFON: To me, I guess, it's just the utility of the CATI. I mean, if an individual checks the box, we can sit around the table and say, oh, we probably assume he checked the wrong box or heard the word tritium once and checked it. On the other hand I can look at, I have a lot of questionnaires, and I see those on questionnaires.

Sometimes with chemical and radiation they check every box, and then I, you know, you sort of say, what's the use of this one. But then you see some that very carefully checked only like three items, and then I think, well, this person at least took the time to consider all these things. They didn't just check them all. So I would think

follow up with this person, maybe they were involved in something --

MR. FARVER: And at least --

MR. GRIFFON: -- special project or whatever.

MR. FARVER: -- something in the DR that says we reviewed the CATI report. Although the EE says they were exposed to tritium, we could find nothing to support this claim; and therefore, it wasn't assessed. That way it looks like you've considered it but couldn't find anything to support it.

MR. GRIFFON: Yeah, I mean my point is I don't want it look like we considered it. I want it to be considered.

MR. FARVER: But I mean if you look --

MR. GRIFFON: That's the problem that a lot of people in the program have is that they feel like their interview information is being given lip service, not being treated as --

MR. FARVER: -- I mean, if you look into this, and you don't have any data, you don't have any information that he was exposed, at least put something in there saying that you looked at it.

MR. GRIFFON: And like I said, if it wasn't, you know, this is a pretty close one, and tritium dose, if it was there, is not going to amount to much.

MR. HINNEFELD: Well, we can go back and see what we know enough about Y-12 and potential tritium exposures to make a better case for saying that. I think the point, if it strictly comes down to he said it in the CATI, and so we should have at least followed up with him, that's sort of a problematic for this case if this is the only thing. If that's the only thing, because this has been adjudicated for years.

MR. GRIFFON: Right, it's been adjudicated for years.

MR. HINNEFELD: And so we really don't have a good way --

MR. GRIFFON: Oh, yeah, I'm not saying to go back now. I'm just saying --

MR. HINNEFELD: But it may be at this point forward take a careful look at this CATI, checked boxes and things like that, and if there's information in there that doesn't match up with the kind of exposure records you

get, maybe make that follow-up call and say, okay, when you checked this box on what basis did you do that. You know, that kind of thing might be something that may be, enable us to get into the CATI for future portion of things.

MR. GRIFFON: It is the CATI procedure. We've had this discussion before in different forums, but I mean, I want to even turn this around, and it's probably good that this comes up when Larry's left, but turn it around and ask the question how many times has NIOSH called and asked about a CATI's information. And even better than that, how many times, you know, you ask them to list coworkers, how many times have they followed up on coworkers? I'm not sure it's a lot. I mean --

MR. HINNEFELD: I'm sure it's not a lot.

MR. GRIFFON: -- right, I'm guessing that it's not many at all, and you've done thousands of CATIs, so anyway, but I wouldn't say for this case, I wasn't implying that you should go back now and ask this --

MR. HINNEFELD: Right, but it would be, for instance, it would be a way to behave from

this time forward.

MR. GRIFFON: But I would appreciate at least checking to see if this has any potential validity at all, the tritium exposures during the timeframes that this person worked there, and et cetera.

I think we can move on to 136.

MR. FARVER: 136.1.

MR. GRIFFON: We've got about a little over half hour by my clock. I mean, I think we can only do so much of this. I'm not just cutting it off arbitrarily, but I kind of am sticking with the five o'clock because I think that's enough. We're going to burn out. We're getting there.

MR. FARVER: 136.1, photon dosimeter correction factors in the DR are incorrect and not properly referenced. The first part would be incorrect. It looks like it was a typo in the table. The second part has to do with whether OTIB-0027 should be referenced or not.

NIOSH believes it does not need to be referenced since it is in the references of the TBD, I believe, yes, since the TBD references OTIB-0027. So there is a typo, so

that's one concern, and it went through unchecked or not caught. The other question that comes up is what are the practices of referencing OTIBs? Because sometimes they're referenced; sometimes they're not. And to say that this didn't need to be referenced, well, how do you know?

MR. HINNEFELD: I don't know if we even have a standard practice for referencing.

MR. FARVER: I don't think so.

DR. MAURO: We had this conversation when we discussed site profiles, and one of the criticisms we had of one of the site profiles was there's an awful lot of other documents that need to be referenced in your site profile to make a complete story, but they're not here. And the answer was you never intended the site profile to be the encyclopedia.

The way you accommodate all the new information is the ongoing training programs, the fact that you've got a cadre of people that work this particular site, and they're exchanging notes. In other words there's a philosophy. It's important that it be

communicated to us. That is that the site profile was never intended to be a complete encyclopedic knowledge of a site and cover every possible situation that might arise.

Now, what I'm hearing is in a similar way when you do your dose reconstructions, there's a collective body of knowledge that you draw upon some of which is in the site profile; some of which is in OTIBs. Now, what I'm seeing here is that the site profile apparently references the OTIB?

MR. HINNEFELD: Apparently.

DR. MAURO: I guess where I come out is if that's cited in the site profile it effectively captures that, doesn't it? I mean, if the site profile has it, is it necessary for the dose reconstruction to break out the OTIB-0027 separately?

MR. FARVER: Where it becomes a concern is when you try to review these cases and determine how the numbers were calculated --

DR. MAURO: It's a struggle.

MR. FARVER: -- and you just refer to the site profile --

DR. MAURO: Yeah, it's a struggle.

MR. FARVER: -- it's not going to tell you sometimes.

DR. MAURO: I have to say we run into this a lot.

MR. HINNEFELD: In this case though our response seems to say that the same correction factors that are in OTIB-0027 were in this particular site profile. So if someone is looking for those correction factors, they can find them in this particular site profile. That's what this --

MR. FARVER: I agree with that, but -- okay, I realize my question was what's the practice on referencing OTIBs.

MR. HINNEFELD: Well, I would say the practice on referencing in general is reference the document that provides the information you utilized at that point. And so in this case if you're listing correction factors and provide a reference for that information for the correction factors, you could reference either OTIB-0027 or the specific site profile since they both contain that information.

MR. FARVER: Well, for example, OTIB-0017,

how do you do shallow doses, now I assume if you have a case that has shallow doses, you would reference OTIB-0017.

MR. HINNEFELD: I believe we would.

MR. FARVER: I mean, that's my opinion.

MR. SIEBERT: The difference in this one is Rocky Flats-specific. The OTIB was written for that, and then the information for it got folded into the next generation of the TBD. But rather than fold all of the OTIB into the TBD, they just changed the numbers in the TBD and referenced OTIB-0027 in the TBD. And then the TBD becomes more one-stop-shopping for that type of thing. Yes, that's what we referenced in ^. So something like OTIB-0017, it's across the complex and a very different comparison than something that's very site-specific that we've rolled into the TBD.

MR. FARVER: That's partly for my education, too, so I know when to write up the findings.

MR. HINNEFELD: I would say if the reference points you, if the DR gives a reference, and that reference contains the information that DR relied on, then that would be a suitable, that's a suitable reference. And whether it's

the TF or the site profile or whatever, as long as it provides the information, then it's being utilized at that point in the dose reconstruction.

MR. FARVER: Now, are these references, is this part of the template that is automatically created?

MR. HINNEFELD: I don't know. I think so.

MR. SIEBERT: Yeah.

MR. HINNEFELD: Yes, I think so.

MR. FARVER: And then they would, then the dose reconstructor would add references to it or --

MR. SIEBERT: If needed, or templates are really written with almost all the references you need at that site, and they would delete the ones that they don't use pretty much.

MR. FARVER: So it's not really tied to the workbook where if the workbook calculates a shallow dose, and then they're going to go pull that reference.

MR. SIEBERT: No.

MR. FARVER: Okay, because I have seen cases where there were references in the report that were not needed.

MR. SIEBERT: Right, and it's up to the dose reconstructor to make sure that the references tie across.

MR. FARVER: I'm trying to figure out how it works.

MS. MUNN: So the bottom line on this one is that we have essentially a QA issue with respect to ^, right?

MR. FARVER: Correct, and that's the same one for 136.2. It has to do with the neutron dosimeter correction factor. It's a typo.

MR. GRIFFON: Yep.

MR. FARVER: 136.3, medical X-ray frequency is not consistent with the CATI report for technical basis.

MR. HINNEFELD: Yeah, yeah, this is -- despite the fact that I sent this initial response, I still asked a question about it, and we're still checking on this. It could very well be that the file we had was the medical file, and which the site profile says for this period can't count on the medical file being complete in terms of the number of X-rays.

MR. FARVER: What this stems from is in the

CATI report the employee indicated that there was an annual frequency on X-rays. The table out of the technical basis document listed the examination frequency as being annual, but doses were only assessed for years when there were medical records, actual records. And we kind of felt that you have three pieces of information and two of them say it's annual, that you should assess it annually.

MR. HINNEFELD: Well, and in this particular case, as you quote in your finding, the site profile itself says that you can't count on certain, up until like '85 or something, you can't count on the medical file being complete --

MR. FARVER: You're right.

MR. HINNEFELD: -- in terms of including all the dose. So, yeah, we're dealing with this now. So we do owe additional information despite the fact that we've given this initial response. We do need to provide updated information based on what we learn.

MR. FARVER: 136.4, uranium material-type is not claimant favorable or consistent with technical basis. This has to do with uranium,

Type S or Type M.

MR. GRIFFON: Has this case been returned by DOL for rework, Super-S question? I mean, it seems like it would not be an issue, but...

MR. SIEBERT: Well, PER-21, which is Rocky Flats DR method modifications, a different PER, but, yes, it has been returned.

MR. GRIFFON: So that's for both neutron and -- PER-21, what does that mean? What does that cover? Just Rocky Flats overall?

MR. HINNEFELD: It's the cover all the changes in Rocky Flats that occurred as the SEC process was going along.

DR. MAURO: Are we on 136.4?

MR. HINNEFELD: We're actually getting there. We were about to get to that one.

DR. BRANCHE: But you interrupted.

MR. HINNEFELD: We got to that one, and then we asked the question has this one been returned.

DR. MAURO: Okay, because I was reading here while you were talking about the X-rays. Are we on number four now?

MR. HINNEFELD: Now we're ready for 136.4.

MR. FARVER: Okay, 134.4 (sic) has to do

with Type S Uranium. When NIOSH did the calculations, they assumed Type...

MR. GRIFFON: Type M, yeah.

MR. FARVER: I lost my spot.

DR. MAURO: You could have a lung dose that's higher by assuming it's Type M. That's a surprise to me.

MR. SIEBERT: Latency period.

DR. MAURO: Sure, has to do with the latency period. Oh, between the time of the exposure and the diagnosis?

MR. SIEBERT: Right.

DR. MAURO: Oh, how do you like that?

MR. SIEBERT: If diagnosis had been a lot further in the future, Type S probably would have been --

MR. GRIFFON: That's why it said Super S is probably not going to be an issue. But I just was curious whether it got sent back.

MS. BRACKETT: This stuff is not intuitive.

MR. SIEBERT: Whatever you think it is, maybe it isn't either.

DR. MAURO: You can't make any assumptions.

MR. SIEBERT: But they were run side-by-side.

MR. FARVER: Okay, let me get my, everything in a row.

MR. GRIFFON: Are those two of the IMBA runs that have been provided? You said side-by-side they'd been run? Were those --

MR. HINNEFELD: Yes, I believe those are the zip files I sent, I believe.

MR. GRIFFON: Those are the ones you sent, right?

MR. HINNEFELD: Yeah, there are two of them are IMBA files. There was one Excel file that showed a comparison of the doses.

DR. MAURO: So did you know this when you got into this or you just made up a number of -- see, I would have just jumped right to the Type S and made that error. But did you suspect this might be, or did you just get lucky and try a couple of them and see what...

MR. SIEBERT: Well, we don't get lucky. We try them all. No, we learned early on in the project that it's not intuitive so that's why we have the dose reconstructors run them, run all the possible and go with claimant favorable.

MR. FARVER: Here's the catch. If you're

just using an intake period from 1969 to 1977 using Type S, it does fit. It also does give you a larger dose. I can e-mail you --

MS. BRACKETT: As opposed to what?

MR. FARVER: As opposed to Type M for the entire employment period.

MS. BRACKETT: Well, why would you stop it, I mean, why would you choose that other one?

MR. FARVER: That I would have to go back and look to see if he actually had any positive results in that second -- I thought what you did you divided it into two periods.

MS. BRACKETT: Did the MDA change over time?

MR. FARVER: That's what I was trying to read. I'm pretty much just going by what was written in the report. It says fitting the uranium lung count and urine data to Type S U-234 yields a chronic intake of 233 dpm per day from 1969 to 1997, NIOSH's first intake period.

MR. GRIFFON: 'Sixty-nine to '97?

MR. FARVER: To '77.

MR. GRIFFON: Oh, '77.

MR. FARVER: So that's why I was assuming that NIOSH broke it down into two intake

periods. And when I did run that for that time period and fit the data, the urine and lung data, it did produce that 233.3 and did come up with a larger dose.

MR. SIEBERT: But you're saying just fitting the first portion.

MR. FARVER: I believe it also fits the remaining data. I'm not sure there was positive data.

MR. GRIFFON: What's the entire work period? Is it, it goes beyond that I'm assuming?

MR. FARVER: And I can e-mail you the IMBA run.

MR. GRIFFON: Yeah, maybe we should see that. Let's just share IMBA files and look at this. You'll e-mail that to the work group and NIOSH.

MS. MUNN: Change in job title, John. There's a place to account for that, too.

MR. SIEBERT: And this is based on MDA changes.

MS. MUNN: Okay.

MR. GRIFFON: I think we can table that one, right?

MS. MUNN: Yes.

MR. FARVER: Yes. 136.5, failure to properly apply CATI information to uranium assessment.

MR. GRIFFON: And what did the CATI, what light did the CATI shed on this? I'm just curious.

MR. FARVER: Umm.

MR. GRIFFON: So there was no work in 776. It was 444. Is that part of it?

MR. FARVER: The CATI says the main fires at the Rocky Flats plant occurred before the EE's Rocky Flats plant employment. However, to account for any small fires he may have been involved in, the assumption of insoluble material was assumed. I assume they were referring to plutonium in that statement. That was from the DR report.

From the CATI the employee worked in the building that caught fire, 444. The technical basis lists Building 444 as depleted uranium and beryllium. So the assumption of insoluble material referred to in the DR report should be also referred to the uranium one where they use class M instead of class S.

MR. SIEBERT: But which once again goes back

to point four that if we thought M was more claimant favorable --

MR. GRIFFON: You'd stick with M.

MR. HINNEFELD: We'd use that M.

MR. SIEBERT: Even if insoluble was --

MR. FARVER: So there are, those two findings are really kind of connected.

MR. SIEBERT: Right.

MR. FARVER: So I imagine once we resolve four, five will go away.

MR. GRIFFON: 137.1. I think we're not going to get through the entire matrix today, but we're getting close. You know, we're getting close. We have about a half hour left.

MR. FARVER: On 137.1, unable to reproduce missed photon dose for years 1977 to 1980.

MR. GRIFFON: Is this Paducah, this site?

MR. FARVER: This is, yes.

MR. GRIFFON: A lengthy response.

MR. FARVER: What it comes down to is, they did follow OTIB-0017. So because the reviewer was unable to figure it out -- I mean, they did follow what they were supposed to do in OTIB-0017 so that's okay.

MR. GRIFFON: SC&A agrees, okay.

MR. FARVER: 137.2, inappropriate LOD used for missed photon dose. Is there some debate going on about the proper LOD for Paducah, Portsmouth for the photon doses that I'm not aware of?

MR. HINNEFELD: I can't think of any.

MR. FARVER: Okay. As near as I could tell everything was done according to OTIB-0017, so I'm not going to say that the OTIB was incorrect or correct. I'm saying they followed the LOD that was in the OTIB. So really, that one's okay.

MR. GRIFFON: Well --

MR. FARVER: In other words if you're agreeing that the LODs are, there's no question that those are correct, then I'm fine. They followed the OTIB procedure, the OTIB-0017 guidelines.

MR. GRIFFON: But how did you come to the conclusion that it was an inappropriate LOD?

MR. FARVER: I didn't.

MR. GRIFFON: I thought it said inappropriate LOD used for missed photon dose.

MR. FARVER: Yes, the reviewer did.

MR. GRIFFON: Oh, you didn't -- oh, okay. Kathy?

MS. BEHLING (by Telephone): It wasn't me. It wasn't me.

MR. GRIFFON: Hans?

MS. BEHLING (by Telephone): That's it.

MR. GRIFFON: Get him on the phone.

MR. FARVER: That's why I said I went back to the OTIB to see if they followed what they should have been done, and they did. Now the reviewer just didn't figure that out that they followed OTIB-0017. And that's why I asked if there was a question about LOD.

MR. GRIFFON: But I mean, is there a root concern that the LOD in TIB-0017 is inappropriate. I mean, that's what I'm trying to understand.

MR. FARVER: Not that I know of. The reason I bring that up is I believe it's been brought to my attention like for the shallow doses at Portsmouth there's a question about what LOD to use for shallow doses.

MS. BEHLING (by Telephone): I think we actually have quite a few questions on the shallow dose and the use of the film badges

and whether they properly accounted for the shallow dose at Portsmouth and Paducah. But those are site profile issues, and I don't think they were incorporated into this dose reconstruction.

MR. FARVER: Okay, because the way I was reading this report the wording was it was kind of strange, and it led me to believe that maybe there was a question about the LOD being incorrect, not using the printed number that, they used the correct number, it's just there's a question about the number being correct.

MS. BEHLING (by Telephone): Yeah, I don't believe that's the case in either issue. We're really questioning the recorded doses, shallow doses, for both those sites. I think initially to be honest, OTIB-0017, when you first read through it, is fairly complex, and it is somewhat confusing until you get a better understanding of what's being done.

MR. GRIFFON: So you think there is agreement then?

MR. FARVER: Yes.

DR. MAURO: I've got a question though. Now

here we have a case where, let's say, they're following correctly their procedures. But let's say we've got a serious problem with the site profile for the OTIB-0017. What do we do -- and I know that's going to be addressed. There's probably a procedure review group and also, of course --

MR. GRIFFON: Yeah, but we're not just doing a procedures review and so --

DR. MAURO: -- but I'm saying you will, so --

MR. GRIFFON: -- yeah, and I think I know where you're going.

DR. MAURO: -- so what do you do about this? What do you do about this? The fact is I have a problem with the way in which shallow dose is calculated at these enrichment facilities. But right now we're accepting this dose reconstruction as if it's, we can believe it.

MR. GRIFFON: Well, I would defer -- if this is a -- yeah, that's a good question. I mean, I would tend to defer that to the site profile discussion.

DR. MAURO: Oh, all right.

MR. GRIFFON: I wouldn't want to lose it.

MR. SIEBERT: He followed the steps and procedures in place at the time.

MR. FARVER: John, what we're starting to do is --

MR. GRIFFON: But that's sort of a procedures review approach. We're saying did you get it right?

DR. MAURO: I mean, this has come up time and again.

MR. FARVER: That's been an issue at Portsmouth, I know, correct?

DR. MAURO: Yes, correct.

MR. FARVER: And what we've started to do in our reports is add findings from the site profiles, which I believe that is one.

DR. MAURO: Yes, it is.

MR. FARVER: So it would fall under and be in the report, but now how we handle those findings is another question.

DR. MAURO: Well, that's for the tracking system.

MR. GRIFFON: Well, that's why I asked if you were worried about the root number, the root LOD in this situation. Is there still concerns about that for Paducah?

MR. FARVER: That's why I asked.

DR. MAURO: No, but my concern is not with the LOD. It has to do with just the way in which you -- in other words is it possible that this person could have had ^ dose or breast dose but that was not captured by the film badge because of geometry issues, because of the positive material.

We talked about this material. You had mentioned to me. We talked about it before. Not uncommon for especially these sites for uranium to deposit on a person's neck and there's sweat, and it goes right down the collar and accumulates in the axilla. In other words there are all these ways in which you can get localized, relatively high exposures.

But that's not -- right now, I guess, we're in a discussion with NIOSH on this matter in how to deal with that scenario. And now given that, eventually we'll resolve that, but I think it goes toward this case. What do we do about this case? In other words, or this issue for this particular case. How do we track that? Do we track it?

MR. GRIFFON: But I'm asking does it or does it not go toward this finding? Is it linked to this particular finding?

DR. MAURO: I don't think you would even have this finding in here. I mean, it should be.

MR. GRIFFON: That's what I'm saying, it's not related to this finding necessarily.

DR. MAURO: No.

MR. GRIFFON: If it were I'd say you have to track it and transfer it to a site profile review, and until it's resolved there, you can't resolve -- yeah, that's how we've been handling it.

Is that right, Stu?

MR. HINNEFELD: Yeah, I would just say that it would be resolved, I think, presumably it will eventually be resolved, whatever that resolution is. If that's different than what has been done up to that time, then the cases would have to be pulled out and reconsidered at that time. As I understand it, that's not this issue here.

MR. GRIFFON: That's not this issue. That's what I'm trying to get at. I don't think --

DR. MAURO: It's important that what I'm hearing is let's say we have a case in front of us that's four or five, six, seven issues, and we're going through them, but some of the issues that are in the site profile review don't make it here, just don't make it here for whatever reason. That's okay because we will catch it anyway. And if we do catch it over there, it will find its way back here through a PER process.

MR. HINNEFELD: Yeah, and if you try to drag those in that sort of muddies the dose reconstruction.

DR. MAURO: That helps me out.

MR. FARVER: 137.3, NIOSH failed to consider missed neutron dose. Apparently, the employee was sandblasted cylinders in the cylinder yard, and there is a Section 6.5.3 of the technical basis that says dose reconstructors should add a neutron component to annual dose of individuals who worked in the cylinder yard before 1998. However, careful consideration should be given to work history. In general, only workers who were near cylinders for extended periods have the potential for

neutron exposure.

So the question becomes how long did this guy work in the cylinder yard, how many cylinders did he blast, and should we assess a neutron dose? And as NIOSH points out, the application is based on the judgment of the dose reconstructor, and it's not clear how much time was spent in the cylinder yard. And due to the uncertainty, that uncertainty and the fact that the neutron dose will not likely affect the claim, neutron dose should not be included.

I guess I feel the other way around, that you should go ahead and include it even though it's not going to affect the claim. If there's a possibility that, well, it's documented he worked in the cylinder yard, and your technical basis says if people worked in the cylinder yard you should consider this. I would add neutron dose.

MR. HINNEFELD: So you say it should be included.

MR. FARVER: I do. I think it should.

MR. HINNEFELD: So do we.

MR. SIEBERT: There's no "not" there.

MR. HINNEFELD: There's no "not" there.

MR. FARVER: I had them put a "not" in there.

MS. MUNN: Yeah, it's as it should be.

MR. FARVER: Oh, well, I'll find something else to argue with you about. Never mind.

MR. HINNEFELD: Just a personality trait.

MR. FARVER: Come on, I'm going to argue.

MR. HINNEFELD: Well, I mean, ultimately we probably owe, if we can get a resolution of all these things, just go ahead and put it in there and demonstrate what the change in the case is. I mean, that would be --

MR. FARVER: Never mind, I'll get you on the next one.

137.4, NIOSH failed to assess shallow dose from potential exposure to thorium and TC scanned clothing contamination events. The employee worked in C-400 Building where TC-99 recovery operations were performed as well as a couple other buildings, C-340, C-410 and C-420, which had greatest potential for things like thorium.

MR. GRIFFON: Is this your shallow dose?

DR. MAURO: Yes, it is.

MR. GRIFFON: It sure is. So here we go. What if we transferred this to the site profile review team?

DR. MAURO: That's where you're going to go.

MR. GRIFFON: Is there a site profile review work group for Paducah?

MS. BRACKETT: For Paducah? No.

DR. MAURO: We haven't opened one up yet.

MR. GRIFFON: Oh, so we can't defer it to that work group.

DR. MAURO: But there is a review of OTIB-0017, which is silent on this, and it's on the list.

MR. GRIFFON: What is it?

DR. MAURO: OTIB-0017 is on the list which deals with this issue.

MS. MUNN: Yes, it is on the list.

DR. MAURO: It's on the list, so we'll get to it some way or the other.

MR. FARVER: Well, I have this listed as open. I really didn't --

MR. GRIFFON: But is OTIB-0017 used -- all kidding aside, is OTIB-0017 -- I mean, because in this it references the Paducah site profile section. It doesn't really reference TIB-

0017. Is OTIB-0017 used across different sites to assess this issue or is it a site-specific kind of...

MR. FARVER: No, I think this finding has more to do with the work location and the nuclides, and OTIB-0017 was how you deal with shallow dose readings on the dosimeter.

MR. GRIFFON: Right. But even the shallow dose readings on the dosimeter --

DR. MAURO: Yes, it's silent on this other matter.

MR. FARVER: Correct.

DR. MAURO: That's the problem with -0017; it's silent on contamination problems.

MR. GRIFFON: Okay. So we have to deal with it somewhere, either here or -- it's not going to be picked up in TIB-0017 necessarily, the issue you're talking about.

DR. MAURO: Well, I've already raised it. When I did my review of TIB-0017, I put that in. It was more of a question. Did you deliberately not address this. In other words have you deliberately constrained TIB-0017 to only deal with beta exposure at a distance and not consider...

MR. GRIFFON: Yeah, but it's at least being partially addressed in TIB-0017 in the Procedures work group. I'm not sure what else to say here.

DR. MAURO: And it's definitely in the site profile but you haven't opened it up yet.

MR. GRIFFON: The site profile work group, right. We'll leave it open on this Subcommittee as well for now, but --

DR. MAURO: It's also being addressed at the Nevada Test Site.

MR. FARVER: 137.5, inappropriate surrogate organ used for the skin of the left forearm, and this has to do with X-rays, medical X-rays. So there really is no organ for the skin of the left forearm, the surrogate organ, the breast, was used, and SC&A believes a more appropriate surrogate organ for the left forearm is the stomach which is more claimant favorable.

NIOSH responds either the breast or the stomach could be considered an appropriate surrogate organ. Surrogate organ selection for calculating dose for medical X-ray exams is not prescribed by available guidance. It

is left to the dose reconstructor's judgment. I'd suggest developing some guidance on how to select surrogate organs.

MS. MUNN: Why did the reviewer feel that the stomach was more appropriate than the breast?

MR. FARVER: Probably because it's down like this, and if you're on the left forearm, it's probably more in line than up here. That'd be my guess.

MS. MUNN: I guess I could make some arguments in --

DR. MAURO: -- facing the film, right?

MS. MUNN: Yeah.

MR. FARVER: And it gives a slightly higher organ dose. In other words if you used the breast it's 14 millirem. If you use the stomach, it's 20 millirem.

MR. GRIFFON: So it's more --

MR. FARVER: Well, actually 200 millirem to 140 millirem. So it's more claimant favorable to use the stomach than it is breast.

MS. MUNN: It really sounds like a judgment call to me.

MR. GRIFFON: And I guess if you have --

what was the basis of the breast being chosen, Stu? Do you have any --

MR. HINNEFELD: No, I don't know.

MR. CLAWSON: That comes up that's the choice of the --

MR. HINNEFELD: You want something in proximity to the beam similar to your target like the stomach is, too. So you want --

MR. GRIFFON: But they could be working --

MR. HINNEFELD: There's something to be said for everybody doing it the same, and the guidance, and saying here you go. This is what you do. If it's here, if it's in your upper arm, you know, use the breast. If it's your lower arm, use the stomach or whatever. They even talk about maybe other organs outside the beam as what's the appropriate surrogate.

DR. BRANCHE: Are you saying that there's no algorithm?

MR. HINNEFELD: I'm saying that it may not be right. Maybe there should be a specifically prescribed surrogate --

MR. FARVER: This comes up on a lot of skin cancers where you'll see skin cancers on the

neck, back, shoulder, and they just approximate it.

MS. MUNN: We're talking X-ray exams here, right?

MR. HINNEFELD: Yeah.

MS. MUNN: So where was the primary beam?

MR. HINNEFELD: It was PHF so it would have been from behind the shield.

MS. MUNN: The chest, and therefore, wouldn't the breast have been closer regardless of --

MR. HINNEFELD: Well, I don't know what the DCFs are. Theoretically, it would seem to me it would be, too, but you have the ribs back there so you may have been shielded, the breasts may have be shielded and so that might be why the DCF was lower. I mean, there's a table of DCFs. There's one for the breast. There's one for the stomach. Apparently, the stomach is not --

MR. GRIFFON: The stomach is higher, yeah, obviously.

MR. HINNEFELD: The stomach is higher.

MR. GRIFFON: Yeah.

MR. HINNEFELD: Now, I don't know why that

is unless maybe the breast is shielded by the ribs or something.

MR. SIEBERT: This might be addressed in Attachment C in the update to Procedure-61.

MR. HINNEFELD: We may have some now.

MR. SIEBERT: Which was just January of this year.

MR. GRIFFON: Is that PROC-61?

MR. SIEBERT: Procedure 61.

MR. GRIFFON: Well, I put a note down to check that. Do you think that's the right one, Scott?

MR. HINNEFELD: There's some guidance here. I think maybe there may need to be some more.

MR. GRIFFON: Yeah, maybe you can look at that and I put down NIOSH is considering developing of guidance and then see PROC-61, Attachment C, as a starting point or maybe that says it all.

MR. FARVER: 137.6, reviewer questions appropriateness of solubility assumptions. This has to do with the solubility of uranium. Dose reconstructor could have selected Type F or Type M. Based on the work locations they chose Type F, and this is not the most

claimant favorable type.

NIOSH's response, solubility type should have been evaluated and selection made by ^ the bioassay data or to be claimant favorable, and the basis should be provided in the report and the appropriate file should be maintained to demonstrate the decision. Well, basis wasn't in the DR and the files were not included. I couldn't find them.

DR. MAURO: And you're saying your calculations, it is not correct.

MR. FARVER: Well, there's, when the reviewer looked at this they determined that Type M would have been more claimant favorable. And what I'm saying is you can't tell from the files because the files weren't included, and there was no basis described in the dose report.

MS. MUNN: Now, was this done prior to the time that we began routinely running all potential solubility tests?

MR. HINNEFELD: I don't know. We've been doing that for awhile.

DR. MAURO: According to your answer it looks like you looked at the bioassay data to

see which chemical form best fit the bioassay data, not so much what would give you the highest dose. In other words, am I correct? The way I read these words that, no, you aren't looking for the chemical form that would give you the highest dose, you were looking at chemical forms that best fit the bioassay data and then use that chemical form to do the dose reconstruction.

MS. BRACKETT: But it says, or to be claimant favorable.

DR. MAURO: Or to be claimant favorable.

MS. BRACKETT: It looks like somebody just wrote a generic answer.

MR. HINNEFELD: Yeah, I don't know that we've got a real specific answer here.

DR. MAURO: That's sort of like --

MR. GRIFFON: So NIOSH can follow up on this one. Was this a POC on this? Do you have a POC on this?

MS. MUNN: It's hard for me to tell reading the response whether you're saying as best we know, we looked at everything. Or whether you're saying it should have been done, and we don't know whether it was done or not. We

can't tell from that.

MS. BEHLING (by Telephone): POC is 43 percent.

MR. GRIFFON: Yeah, we got it, thanks, Kathy.

MR. FARVER: Three skins.

MR. GRIFFON: Three skin cancers.

MS. MUNN: Thanks, Kathy. Sounds like we need a more descriptive response from NIOSH.

MR. GRIFFON: That action's going back to NIOSH.

137.7, we're almost done here. We'll finish up 137, then we're going to cut it off.

MR. FARVER: NIOSH failed to calculate internal doses from fission products. This has to do with the fact the employee was monitored for fission products as shown in the records, but they did not assess doses for fission products. And you can read NIOSH's response. And in this case the employee was monitored for Strontium-90, tritium, Tech-99 --

MR. GRIFFON: Cesium.

MR. FARVER: -- I think a few other things, cesium.

MR. GRIFFON: For some reason.

MR. FARVER: If you look at the bioassay data, those were his results there.

MR. HINNEFELD: Well, I can't talk to the in vitro results because I don't know about that. But you refer to an in vivo result, ^ on the cesium printout ^.

MR. FARVER: Actually, I was looking at the doc-bio file for this which lists their bioassay data, in vitro, in vivo and everything, incidents.

MR. HINNEFELD: Well, the in vivo data that they listed Cesium-137 or something, but he said listed both?

MR. FARVER: Well, I know he was monitored for in vitro for Strontium-90, tritium and Tech-99.

MR. HINNEFELD: I understand those. I don't know why it would have been monitored either.

MR. FARVER: If I had to guess, it looks like it was some experimental program that was done in 2000, like maybe they were just sampling people and then analyzing for everything. I don't know.

MR. GRIFFON: This is current, 2000.

MR. FARVER: I believe it was later on.

MS. MUNN: What was the employment period for this claimant?

MR. SIEBERT: 'Seventy-four to present.

MS. MUNN: 'Seventy-four to what?

MR. SIEBERT: Present. If it's in 2000, all cancers were diagnosed by '98.

MR. HINNEFELD: It's an issue of whether he was exposed or not. Do you suppose they did a series of sampling in response to the issue of recycled uranium at Paducah? That you would think would have occurred before 2000, wouldn't it?

MS. BRACKETT: I know it was before 2000.

MR. HINNEFELD: Well, I don't know.

MR. FARVER: But if he was monitored, it should be considered, and your consideration might be, well, it falls outside the diagnosis date or something like that.

MR. HINNEFELD: Well, it would be nice to know a little bit more about it, that series of in vitro sampling. What I was going to say about in vivo data -- now, did Paducah use the portable counter or not?

MS. BRACKETT: I thought they used a Y-12.

MR. HINNEFELD: The Y-12 portable?

MR. FARVER: Well, that late they did, but they also had the portable up there sometimes.

MS. BRACKETT: Was the portable Helgeson or which --

MR. FARVER: I think it was just a sodium iodide, wasn't it?

MR. HINNEFELD: I think it was the Y-12 mobile. I think that went to Paducah. I think that went to Paducah and Fernald and Portsmouth.

MR. GRIFFON: I know I saw the Y-12 mobile.

MR. HINNEFELD: Well, the Y-12 mobile printed out a cesium result and printed out results of several photon-emitting nuclides, not because of exposure.

MS. BRACKETT: Right, it doesn't explain the ^ and tritium though.

MR. HINNEFELD: It doesn't explain those at all. I was just talking about that. And if there was an in vitro for cesium, I certainly can't explain that. But when you see an in vivo for some of these oddball photon-emitters, the mobile printer just printed those out. It doesn't mean that anybody was

exposed or being monitored for them.

MR. FARVER: Well, I mean, if the results are there.

MR. HINNEFELD: Well, the in vitro results are very puzzling, and so I think it deserves a little better understanding of why the results --

MR. FARVER: And in general, I mean, if the results are there, I think it should be assessed or acknowledged anyway.

MR. HINNEFELD: Yes.

MS. BRACKETT: We could contact the site and ask them --

MR. HINNEFELD: Might need to. What were you guys doing?

MS. BRACKETT: I think Kenny Duncan's still there, isn't he?

MR. FARVER: As I said, I don't know. I didn't hear anything different. Just give Kenny a call. He'll remember.

137.8, NIOSH failed --

DR. BRANCHE: I thought we were just talking at 137, what we just did.

MR. GRIFFON: No, we're stopping at the end of 137, Christine.

MR. FARVER: 137.8, NIOSH failed to properly address potential radiological incidents.

MR. GRIFFON: So in the second paragraph there you say that an evaluation of potential skin contamination incidents should have been included. Did you do any assessment of that? I mean, this is not real close, but 43 percent, you know, and it is skin cancers.

MR. FARVER: Yes, and then what this comes down to is in the CATI report the employee indicated he was exposed to TC-99 and in vitro monitoring was conducted for TC-99 so there was some potential. And also, the technical basis document says some skin contamination events involving TC-99 could have occurred without being detected at the time. That's what the basis for the finding is.

MR. GRIFFON: I have no doubt about that, especially if he goes back to '74.

MR. HINNEFELD: There's a whole series of 137. There's a whole series of these 137 findings where ^ is not complete. And so we need to go back and provide a more complete answer.

DR. BRANCHE: Are we done?

MR. GRIFFON: Yes. Just follow up again.

MR. HINNEFELD: Well, just in 137 in general, NIOSH is to provide better, more complete response to several of the 137 files.

MR. GRIFFON: Since we didn't finish, we're going to need time on the agenda in St. Louis -- no, just kidding. There is no time on the agenda in St. Louis. Wanda's taking it all. Any time we have for R and R, Wanda's filled it with a work group meeting.

DR. BRANCHE: The public comment section is very important so I wouldn't joke about that.

MR. GRIFFON: I know.

MS. MUNN: We can always slide over into Friday.

MR. GRIFFON: I think we're going to call it quits today. I'm not going to miss this flight tonight.

DR. BRANCHE: But do you want to go ahead and schedule when you want this group to meet next?

MR. GRIFFON: I think we'll do that in St. Louis if that's okay.

DR. BRANCHE: That's up to you.

MR. GRIFFON: We'll figure out, yeah, I'll

do a report in St. Louis and update on where we're at, and then we can look at our calendars and figure out when best it makes sense to meet again. But this format's best, I think, for everybody. It's better than doing it in front of the Board meeting because we get more of the detailed stuff done this way.

DR. BRANCHE: I think you cover a lot more territory.

MR. GRIFFON: Exactly, yeah.

DR. BRANCHE: Painful though it is I will admit, but you cover a lot more territory.

MR. GRIFFON: Enlightening is what we call it, not painful. Okay, having said that I think we're meeting adjourned, right? Anything else?

MR. HINNEFELD: Oh, I have one thing to add. The eighth set report is out. So it's either time for an eighth set matrix or a database. Are we going to go with a matrix, a course file matrix?

DR. MAURO: Kathy, you still with us?

MS. BEHLING (by Telephone): I'm still here. Yeah, I did put out a matrix, but I just sent

it to the Subcommittee at the moment. But it seems to me that we should have the database in place, and we could probably start on the database with the eighth set.

MR. HINNEFELD: I'm only asking whether, if there's a matrix, we'll work from the matrix.

DR. MAURO: Both, yeah, both, that's what she said.

MS. MUNN: The matrix is out.

DR. MAURO: Yeah, you have your choice.

MR. HINNEFELD: Okay, could you send us the matrix, too? Send it to me?

MS. BEHLING (by Telephone): Yes.

MR. GRIFFON: Yeah, send the matrix --

DR. BRANCHE: And me, too, please.

MS. ADAMS: Hey, Kathy?

MS. BEHLING (by Telephone): Yes.

MS. ADAMS: This is Nancy. When is a good opportunity for us to get together and talk about the database for this in St. Louis?

MS. BEHLING (by Telephone): I am having, I've done some testing, and I'm having Don make just a few changes. And I will also incorporate this PER issue we talked about today. And as soon as he's able to do that, I

will give you a call. Is that okay?

MS. ADAMS: That's great.

MS. BEHLING (by Telephone): It should be a few days.

MR. GRIFFON: Kathy, are you going to be in St. Louis?

MS. BEHLING (by Telephone): I'm not planning on it.

MR. GRIFFON: Okay.

DR. BRANCHE: So that answers my question to Wanda then.

MR. GRIFFON: Because I was thinking the three of us could meet there, but --

DR. BRANCHE: Well, Wanda wants her there, too, so you might be able to convince her in another separate forum. We're going to adjourn this call.

MR. GRIFFON: Okay, thanks everyone.

DR. BRANCHE: Thanks all of you.

(Whereupon, the meeting was adjourned at 5:15 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 June 10, 2008; 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 18th day of March, 2009.

_____

STEVEN RAY GREEN, CCR, CVR-CM, PNSC

CERTIFIED MERIT COURT REPORTER

CERTIFICATE NUMBER: A-2102