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NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH

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ADVISORY BOARD ON RADIATION
AND WORKER HEALTH

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SUBCOMMITTEE ON DOSE RECONSTRUCTION

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FRIDAY
MARCH 30, 2012

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The meeting came to order at 9:00 a.m., in the Zurich Room of the Cincinnati Airport Marriott Hotel, Hebron, Kentucky, Mark Griffon, Chairman, presiding.

PRESENT:

MARK GRIFFON, Chairman
BRADLEY P. CLAWSON, Member
WANDA I. MUNN, Member
JOHN W. POSTON, Member*

ALSO PRESENT:

TED KATZ, Designated Federal Official
HANS BEHLING, SC&A*
KATHY BEHLING, SC&A*
ELIZABETH BRACKETT, ORAU Team*
GRADY CALHOUN, DCAS
DOUG FARVER, SC&A
STU HINNEFELD, DCAS
JENNY LIN, HHS
JOHN MAURO, SC&A*
SCOTT SIEBERT, ORAU Team*
JOHN STIVER, SC&A
BRANT ULSH, DCAS
KEITH VARNADO, ORAU Team*

*Participating via telephone

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P-R-O-C-E-E-D-I-N-G-S

(8:57 a.m.)

MR. KATZ: Good morning, everyone in the room and on the line. It's the Advisory Board on Radiation and Worker Health, Dose Reconstruction Review Subcommittee. Let's do roll call.

We need to, because this is a Subcommittee, we need to do roll call a little bit differently in the sense that we have to speak about conflict of interest to -- with respect to each Board Member.

So we have to -- I brought it to make things, matters easier, but we have to acknowledge conflict of interest at the front end since this Subcommittee deals with really all the sites, in effect, even though we are not speaking about individual sites or focusing on them, but our dose reconstructions are from individual sites.

So let me find my list and we'll just do it this way, so -- because I'm not

sure all of you have an easy time rattling off your conflicts. So I'll just speak for your conflicts as we do roll call.

So, beginning with Mark.

(Roll call.)

CHAIRMAN GRIFFON: Okay. All right, welcome, everybody and I thank Ted for sending all the correspondence in the last two weeks or so, and getting a lot of deliverables sent in to us.

And we have the agenda and I think -- well, I'm not sure of the order, but I think it basically puts the case review stuff towards the end, so -- which I think would make sense.

So we can just probably start down the list. DCAS report on QA/QC analysis, the five cases from set 12.

MR. HINNEFELD: Well, I can, I can start.

CHAIRMAN GRIFFON: This is a different piece, I thought it was the other -

MR. HINNEFELD: The blind one is the next, right?

CHAIRMAN GRIFFON: Why don't we start there, because I'm --

MR. HINNEFELD: This will be really quick.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: We've got a preliminary analysis of the last -- of the latest five cases from the twelfth set and -- of the errors that have been identified in reviews, and you know, of errors, and you know, yes, these are errors, you know, they are -- the second piece that we were obliged to do though, is to say where in our system should we have caught this error, if we should have, and that part's not done yet.

We can provide, you know, we can provide everybody what we have, but we have the second part of where in our system should we have caught it, and should we have caught it, that's not done yet.

So we can wait -- we can also wait for that. But there is a judgement about whether -- on these cases -- and whether we think is really an error or just unacceptable, different from the way it was done. So that is written down in the five cases.

CHAIRMAN GRIFFON: Can you back up just a step and explain to us how this process started, because we are still --

MR. HINNEFELD: Well, this came from a discussion of well, how, you know, how are we doing now. In order to find out some information about the quality of the program and the conversation about many of the cases that are reviewed by the Subcommittee are old, quite old by the time they come through.

So let's try to get the most recent information available to look at for this question, so that's the most recent information on how we were doing it.

Even then it was not contemporaneous. It was somewhat -- at the

time we made the selection, the last case, the last set of findings that we had was the 12th set.

Now, there have been others since then, but let me talk about the 12th set. We selected from the 12th set the five cases that had the latest dose reconstruction completion date, you know, not the review date, but the latest dose reconstruction completion date.

We selected those five cases, went through the findings on the SC&A report and made, you know kind of made our own judgment, yes, this is a mistake of this nature, this one we think is just different acceptable ways of doing it, those kinds, those kinds of judgments.

That much judgment is made. So, then the follow-on, which is not yet done, is to say okay, for these mistakes, where in that system should it have been caught, and if there is nowhere in our system it should have been caught, what should we do then for the

system, if anything, in order to catch this mistake in the future.

So that's the part that's not done yet. So that was -- that's a big effort, and we are kind of midstream in terms of the totality of the effort.

So that's where we are. Like I said, we can share what we've done now --

CHAIRMAN GRIFFON: And these were -- and this task, this tasking was internal, right? But you decided from the 10-year review to do this? I mean we didn't drive this process, right? We -- did we, or -- no.

MR. HINNEFELD: No. I think we came to the Subcommittee with it from the 10-year review.

CHAIRMAN GRIFFON: Right, okay.

MR. HINNEFELD: The main recommendation of the 10-year review, I mean, it identified stuff. The main recommendation of it was to work with this Subcommittee --

CHAIRMAN GRIFFON: Okay, right.

MR. HINNEFELD: -- on the dose reconstruction and the quality issue.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: So we talked about it at the last Subcommittee meeting. I don't know that it was a tasking from the Subcommittee, but we kind of came to the committee with this idea that we would do this.

CHAIRMAN GRIFFON: We said we'll do this, right. Okay.

MR. HINNEFELD: Okay. Because that was one of the actions that -- if there were mistakes being found, it was actually straight from the dose reconstruction, we get there are errors being found in dose reconstruction, why didn't our system find it.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: And so that's to address that and then we hope to work with the Subcommittee going forward on the resolution, because the 10-year review is essentially --

has passed on it. To continue the work, in order to continue to follow it, there has to be a sort of a continuing issue. There's no way to continue the reviews checking a box.

MR. KATZ: So, should we have this on the agenda for the next meeting? I don't know what the timeframe is for that, sorting it out.

MR. HINNEFELD: Well, I would think certainly we should have it. I mean, we're kind of -- we're late with it already. We should have had it, you know, it was something we need to, it's like everything else, you know, you've got to keep it on your program list or nobody gets assigned it.

CHAIRMAN GRIFFON: And a little heads up, what did you find? I mean you said that you hadn't done the second part --

MR. HINNEFELD: No, you ran them more carefully than I --

DR. ULSH: It was a mix. There were -- for each of the five cases there were

multiple findings and some observations as well. Some of them we agreed with SC&A that they were indeed errors and that they represented quality assurance, QA issues. Some of them we disagreed and thought that it was not an error and some of them, we agreed with the finding but we didn't consider it a QA issue. So it's a mix of those.

MEMBER RICHARDSON: So the question that you are posing, why didn't the system find it, is only a question that you can answer about certain classes of these problems that you've laid out: those that are -- for those that you don't agree with, you shouldn't have found, so that's actually a success; those that are quality issues, those would be the ones you could engage with; those which are -- you said were findings but were technical issues, you are not necessarily going to have in place anything other than this committee I wouldn't think, that would be systematically going through or struggling

with those sorts of problems, or would you?

DR. ULSH: Well, you are correct that those findings where we agreed that an error was made but we don't feel that it was a QA issue, those are harder to address on a systematic basis because they tend to be unique.

I don't know that I want to go quite so far as to say we shouldn't have caught it.

MEMBER RICHARDSON: There would be a way to -- the dose reconstructor could send a flag and say this is an interesting problem.

DR. ULSH: I don't think I'd go quite that far, but I understand what you are saying. It's going to be harder to address in a systematic --

MEMBER RICHARDSON: And when you are going to go back and trying to understand the quality issue, is it looking through steps that are within NIOSH, or is going all the way back through, kind of contractors as well?

DR. ULSH: I think it's actually more --

MR. CALHOUN: All the way back. You would want to start from the very beginning, you know, you could have caught it at some point, we should have caught it at some point, what can we do to fix it?

MEMBER RICHARDSON: That's good.

CHAIRMAN GRIFFON: All right.

MR. HINNEFELD: That can be on the agenda for the next meeting.

MR. KATZ: I have it marked.

CHAIRMAN GRIFFON: All right. You know, this might be a good, a good time to go off the agenda just for one second, which is something I had mentioned at the last Board meeting, and we didn't get it on this agenda so I don't think we'll be able to discuss it a lot today but I think we, we should at least make a note of it for our next meeting.

And we had talked about this at a previous Subcommittee meeting as well, but

we'd like NIOSH and/or ORAU, I'm not sure who is in the best place to do this, but to provide an overview presentation, and also maybe some specifics, you know, the procedures or whatever, on their QA/QC program currently, or you know, and if it's been modified in the recent history, that's fine with modifications as well, but we had a presentation at the ORAU office, but I don't think that really -- you know, that was sort of an overview at the highest program level I think. It didn't really address the mechanics of what you are doing for QA, I don't think.

So I guess that's what we'd like to know, is what sort of QA was in place or is in place, and are you tracking errors, I mean, what are they doing on ORAU's side as well as NIOSH's side?

And Stu, I think you had agreed to sort of come back, you know, I'm sure we, you know, I forgot about it, we all forgot about it. But --

MR. HINNEFELD: Oh, we can -- yes, we can come up with that. But you're not interested in sort of a detailed error-tracking -- I was not able to make the meeting at the ORAU office so I don't know what was presented there.

But you're looking at -- you feel like that was sort of the general systems as it goes to the specific details, and whether -- what sort of, what information is coming out.

CHAIRMAN GRIFFON: Right. Right, that was the sense, that was --

MR. HINNEFELD: Okay. I would propose that --

CHAIRMAN GRIFFON: I mean for instance we had talked about the benchmark in question, you know?

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: Like, you are making all these changes which in theory, it seems, a lot of what was presented in that

meeting at ORAU, would you know, definitely have made improvements, because they were avoiding for instance physical data entry steps, you know, they were tying things electronically so there was no more physical re-entering of data in some cases.

So some of those things, you know, it seems obvious that they are going to improve or reduce errors, but it was noted by several of the, you know, was there any error-tracking and how do you know you were improving, you know, and other than just, you know, a gut feeling that this is going to make it better, how do you know? Are you tracking it, and going forward, are you tracking it?

MR. HINNEFELD: Well, I'd propose then that we have some sort of interaction between -- to try to focus, you know, between us and the Subcommittee Members about --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: -- this is the kind of stuff we found, and you can say, well,

that's not exactly what we want, and so, because I am a little worried we are going to run along the wrong --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: If we don't bring up some of these factors. So I guess we can -- I mean, Scott's listening on the phone, so --

CHAIRMAN GRIFFON: That's fine. Yes, we can do this off-line.

MR. HINNEFELD: I'm just thinking that, you know, we'll need to say okay, well, what do we think they want, you know, come up with something, and kind of share it. It's this kind of thing you are looking for, and then some back and forth as to modifying it.

I don't know that -- how much error-tracking particularly historical error-tracking we'll be able to come up with, and I just don't know --

DR. ULSH: So are you proposing that we maybe put together a draft agenda for

a presentation, or outline of a presentation?

MR. HINNEFELD: Yes, an outline of a presentation with some description, you know, but probably an outline is, it may sound right, but you know, you've got to have a little bit of flesh on it --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: -- on those outlines, as I say, to have details of this or not.

MR. KATZ: Yes, and if you just recall, in the last meeting, what I was saying was under ISO, International Standards Organization, if you have an ISO-approved quality system, you would have a quality manual that would actually make that very easy to present because it lays out all your parameters that you are evaluating your quality by --

MR. HINNEFELD: Yes.

MR. KATZ: What your metrics are, are laid out in a quality manual.

MR. HINNEFELD: Yes.

MEMBER CLAWSON: Mark, if I am hearing what you are saying, you want to be able to see what ORAU has tracked as far as problems and then the corrective action for that, kind of a historical, how they are doing, just like any different QA program should be set up as, as you even find these marks yourself, what are you doing to --

CHAIRMAN GRIFFON: Correct, and sort of like what Ted said, what are they doing, they indicated they are tracking and they are showing improvement and all those factors, yes.

I don't think -- I don't remember that being in our previous, you know, the presentation because, you know, it was useful. I'm not saying that it wasn't a useful meeting at ORAU, but I don't think we went there.

DR. ULSH: No, my thought is that we have some performance metrics but if -- the kind of things that you are talking about,

error-tracking and pursuing a reduction in error rate, I'm not so sure that we're doing that.

MR. HINNEFELD: Yes, I'm not sure what we are going to be able to come up with, but we will see what we can come up with.

CHAIRMAN GRIFFON: Well, it's useful to know whether they are doing it or not, so, yes.

MEMBER RICHARDSON: And I think those -- I mean all of those are important things to understand, but I would take performance metrics as a focus on production cost-efficiency and quality as a different set of metrics that you might also wish to track and which I think are overlapping with some of the findings, that they are not -- I mean all of these, I mean all of these issues, and they were all kind of laid out I think nicely in the 10-year review, of timeliness and those things, those are part of the performance issues, but there is -- I think that's what we

had a hard time in the discussion at ORAU, was asking -- and it partly comes from, I mean I can say, I had my own experience with having a programmer implement something which was supposed to be -- reduce human error and introduce technical error, instead, and you know, you find that the database system was not performing -- and so you need a metric, you need some -- I felt like I wanted to see some sort of metrics in place that let me say this was the error rate for the intervention, and after the intervention there's a demonstrable kind of increase in quality and so I think that's what we are back wanting to understand.

And there was -- I think there was receptiveness to that issue at the discussion, and so one of the things also was, now several months forward, is has something been put in place that's going to let us -- you know, you can look at the -- not at the past issue but at the state of the program today.

MR. KATZ: So, just one more example. So a critical factor -- I'm just thinking because I'm fairly familiar with what we do with the respirator certification, with -- we have a regulation on what kind of quality systems respirator manufacturers have to have, for the performance of the respirators according to the certification status.

And therefore, sort of analogous, I think, to this, I think you have different levels of severity or importance in your tracking system for metrics, and the most serious would then be of course, I think analogous here would be a case for which the Probability of Causation -- the decision was impacted by the error. That would be the most serious type of error or, you know, if you talk about degrees of error, a hierarchy of errors, but that would be the most serious kind of error, and that would be one example of the category to track --

CHAIRMAN GRIFFON: Yes, yes.

MR. KATZ: I'm just trying to --

CHAIRMAN GRIFFON: No, no, right.

MR. KATZ: -- illustrate the --

MEMBER MUNN: But that was essentially how we set up the form originally when we were talking about how we were going to track things. We had -- we were very careful to establish a level of consequence for -- but in the actual measures taken --

CHAIRMAN GRIFFON: In our review you mean. Yes, yes, yes.

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: So we'd like to know what -- internally what they are doing as well.

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: Yes. Okay. I mean I don't think we have to harp on that and I'll -- Stu, if you want to communicate on the side and --

MR. HINNEFELD: Yes, I think we'd

want to have a little bit of communication back and forth --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: Because I have --

CHAIRMAN GRIFFON: Yes, just to make sure --

MR. HINNEFELD: -- no idea what we would find.

CHAIRMAN GRIFFON: Right, right right, and/or forward, like here's what I -- here's a document that ORAU is going from or whatever. Is this what you're looking for, you know, that kind of thing. That's fine.

MR. HINNEFELD: All right. I haven't been -- I have met with a couple of individual people just on the side, kind of briefed because I'm going to be coming to this Subcommittee from now on, just, just -- I just can't keep my eye on this very much. I mean, Grady is the contracting officer representative for the ORAU contract, and so he's in more direct and constant communication

with them. So I think it'll be more effective with Grady here than me trying to show up in addition to the work that Brant is doing.

CHAIRMAN GRIFFON: I'm sorry, Grady.

MR. CALHOUN: It's okay.

(Simultaneous speakers.)

MR. HINNEFELD: I'm taking care of him by adjusting the lever on his chair.

(Laughter.)

CHAIRMAN GRIFFON: Okay, let's go on to the next topic, I think, the blind quality control evaluation.

MR. HINNEFELD: Yes, this could be an interesting topic.

CHAIRMAN GRIFFON: Yes. And does everybody have the -- you sent out your summary report --

MR. HINNEFELD: We did send our summary report --

CHAIRMAN GRIFFON: Is Paul on the phone by the way, is Paul -- Paul's on this --

MR. KATZ: He is not, Procedures.

MEMBER MUNN: That other one.

CHAIRMAN GRIFFON: Who chairs that? I can't recall.

MR. HINNEFELD: The assessment report is just a vehicle we had in existence for this kind of activity, where you go and assess -- we've done an assessment on contractor performance, that's been done. That's -- it was a vehicle we had that we just said, okay, this is how we are running this thing. We hadn't really thought about how we are going to run its results yet. But it fits exactly with what this is intended for, and if presented, the comparison that was done on the -- I think there were actually eight cases that were selected.

CHAIRMAN GRIFFON: Hey Ted, can you send this to David --

MR. HINNEFELD: Oh, David didn't get it?

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: I'm sorry.

MR. SIEBERT: This is Scott. Could you also send it to me because I don't seem to have it?

MR. KATZ: Okay, send it to --

MEMBER RICHARDSON: Did it go to the CDC account?

PARTICIPANT: Yes.

MEMBER RICHARDSON: Can you send it to my UNC account?

PARTICIPANT: Sure.

MR. HINNEFELD: Well, wait a minute, there's some privacy information on there.

MR. KATZ: That's why it would have gone it to your CDC --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: We can share, I guess.

MEMBER MUNN: I have a hard copy.

MR. KATZ: Thank you Wanda.

DR. ULSH: All right Scott, it's

on its way to you.

MR. SIEBERT: Thank you.

MR. HINNEFELD: I guess the meat of it is kind of at the end, the attachments. I mean there are conclusions drawn, the action that we felt like you pointed out to us that we clearly needed to take was to clarify the use of Site Profile, limit of detection versus actually a number that's reported on a bioassay result as the limit of detection for bioassay, because that actually -- there was a misinterpretation on our person's part, and what kind of comes out of this is ORAU is better doing these from scratch than we are, because they do them all the time from scratch, plus they have review and -- a review system on our side and we don't, and we didn't intend to put a review system on our side for this.

And so there was -- in that instance ORAU correctly interpreted -- I think I got this right -- they correctly interpreted

the Site Profile number as the correct limit of detection that you use, which is important in this dose calculation.

And our reviewer incorrectly chose a value that was reported on the bioassay result as the limit of detection in order to do the missed dose calculation.

So the missed dose calculation was smaller on our side. The case was actually compensable as it came over. But our review did not have a compensable outcome. So that was the big -- the big difference between the two and it was our error, because of the lack of clarity in the documents that described how to -- what to choose as the limit of detection value.

So that was the big finding and that is the action we need to take, we know we need to take as a result of this. There was another -- there's another on there if you look at it very much. I'll have to look at it to find the number. But there's one in there

where you have a -- it's like with the covered period -- the covered period ends and then there's a continuing commercial operation period.

So the -- our dose reconstructor included doses from the commercial operation that really should not have been included. It couldn't have been from the residual contamination of the covered period. The medical X-rays for that period that was covered, they should not have been included. So our person just made a mistake in doing that. Now, in that case both dose reconstructions were --

CHAIRMAN GRIFFON: It couldn't have been from residual --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: -- just from a policy standpoint, it couldn't be --

MR. HINNEFELD: It was probably a different isotope.

CHAIRMAN GRIFFON: Oh, different

isotope.

MR. HINNEFELD: Yes. So -- or, for whatever reason, it really looked like it couldn't have been from the residual -- from the residual, from the covered period and should not have been included in the dose reconstruction that our person did because their coverage continued into the --

CHAIRMAN GRIFFON: So this is the one that had like 12 years versus 19 years --

MR. HINNEFELD: That's probably --

CHAIRMAN GRIFFON: Yes, there was some big --

MR. HINNEFELD: That was probably the one, yes. Okay. So the -- now, both of those -- in both of those cases, the PoC was still less than 50 percent, so this did not change the outcome of the case.

And there were some other differences that seemed to be more minor and that would be what we would consider an acceptable variation in some sort of

selection.

A lot of these, I think, were overestimated cases because this is a, sort of an early artifact of the way the system is set up. We kind of -- these kind of lean towards AWE cases. The reason for that is the AWE cases are predominantly done by contractors who sit in our building, and you don't have to ask for an exposure history for an AWE case.

So these were assigned, you know, from our pool, from new cases -- isn't that right Grady? Don't we assign -- we assign them one a week from new cases?

MR. CALHOUN: Yes, at random.

CHAIRMAN GRIFFON: At random.

MR. CALHOUN: Yes.

CHAIRMAN GRIFFON: It used to be two, we are down to one case. We can't keep up with two people.

MR. CALHOUN: And then what actually happens is, is we -- our team is assigned to do the blind dose reconstruction

before we get it from anybody else. We do that first. The one comes in from either ORAU or our contractor and then we compare it, because we don't want to do one that's already been completed because we want to be completely -- we don't want to be biased at all. Yes.

MR. HINNEFELD: Yes. We don't trust our people not to --

(Laughter.)

MR. HINNEFELD: So, since it -- since you don't have to request an exposure history for a DOE facility, those get done quick. And so the AWEs are the ones that kind of show up first, where you have, you know, it's independent of how quickly the duplicate is done on our side, but what is the driving factor is when does the production DR show up.

And the production DR for an AWE shows up quicker and so that's why the first -- the first ones are heavily weighted towards AWE cases.

So that's why they are heavily weighted and then there are AWE cases tend to be overestimates, a lot of them are pretty simple, maybe not that long in duration and it's usually a uranium place and there are only a certain number of cancers that you can compensate with the uranium exposure usually.

So that's how that worked. This application is visible on my screen. I don't think the Board Members can probably see it. I can let you know in a minute if you can see the implication or not. I'd be surprised if you could.

And then the application just shows you the progress, shows you the cases that have been selected and the ones that have been deferred, and it gives us quality analysis, the attachment on the assessment just do that, that analysis of the two cases.

I think also, remember, this is are the first eight times we have done this and I think we need to work with our group to

get a little better documentation of their thought process in their review.

They haven't really gone through and decided, okay, why did you decide this technique that's supposed to be in there? There's not -- they haven't done that very well either. So we need to kind of bring our troops up to give us some feedback on how this is being done and improve what we are doing.

CHAIRMAN GRIFFON: Yes, this document here worked kind of all right --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: Is that what you are saying?

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: Yes.

MEMBER CLAWSON: That's been one of our findings through all the --

CHAIRMAN GRIFFON: Yes. From the beginning, yes, yes. State your assumptions.

MR. HINNEFELD: Now, we need to continue this discussion because I know

there's an expectation that this would go to Doug or to SC&A or something, and there was some sort of SC&A action apparently that was going to be done and that completely slipped my mind.

Now, these are not adjudicated cases. These are all -- they are still with FAB, so these are not adjudicated cases.

And so we certainly don't mind looking at the quality system but I think we have got to be careful about getting into another review of this case which has not yet been adjudicated, you know, and we are not calling ours a review of the case. We are just trying to see if the instructions are consistent enough that we do have the same, you know. The production, you know, the ORAU DR or the contract with ORAU, the DR is the production DR. We are not trying to substitute our judgment on that. That is a production DR.

Now, I suppose if we found one

that was flagrantly wrong, we stopped it, because I would have thought that --

MR. CALHOUN: But mostly, that would have stopped -- will get stopped anyway because those have not gone through the system yet. They come over to us from the contractor and we compare it to our individual one before it even gets into our normal QC processes and those processes, and those could be rejected just like any of the other ones are.

MR. STIVER: This is John Stiver from SC&A. We were kind of expecting a little more detail on the report that would kind of allow us to not really -- our intention was never to try to do a full, de novo DR audit on these things, but really to just try -- you know, as we have been talking about it this morning, to track the performance metric.

So we have two HPs with presumably comparable levels of experience on a particular site, all in the same documents, and so we would expect to see, not necessarily

in lock-step but pretty close estimates, especially under the external dose.

And a couple of the issues that Stu mentioned, like the detection limit for plutonium at Savannah River and I believe, what was the other, about the residual period on the AWE site, it appeared to me more a matter of the DCAS reviewer not necessarily having the same level of experience as, say as the person at ORAU, so there's another kind of level of uncertainty that's creeping in there.

But the kind of things we would like to see, you know, having a PoC would be nice, the type of case, whether it's, you know, a best estimate, a hybrid case, or an under- or overestimate, and then some documentation of these decision points, basically where the reconstructor has free will to exercise their professional judgment in making a determination about a particular exposure scenario or TBD interpretation to use.

And you know, presumably, they'd like all roads to lead to Rome and eventually it becomes a certain error limit in that it kind of concerns us that we are seeing factors of two or three in some of these comparisons.

And this may very well be from -- this is the first set that kind of learning and refining the process as we go and that type of thing. But just more documentation of the thought process with some decisions.

MR. HINNEFELD: Yes, well, we agree that that was intended if not --

MR. STIVER: Right. And I think we were basically talking the same -- about the same thing.

CHAIRMAN GRIFFON: I mean, I guess, to me, one thing that I was thinking about, and reading through these summaries it's a little difficult, I'm like -- it's hard to understand which ones are -- I mean it's obvious that many are over- or underestimates.

But just this thing you said

earlier about these decision points, or the assumptions that are made not being documented, I think that, to me, might be a bigger, more important finding than the Savannah River document.

I mean that sets an overall trend because I think that clarifies a lot in your quality review if people are documenting what DCF they use and why, and then when you are doing your reviews, the reviewer can theoretically see that and agree or disagree. But --

DR. ULSH: I think the errors, though, in that regard, Mark, where we didn't sufficiently describe the decision points, were on the DCAS side, not on the ORAU side.

CHAIRMAN GRIFFON: Was it because both --

DR. ULSH: Well, in other words, when the DCAS reviewer -- when the DCAS --

CHAIRMAN GRIFFON: Was it because the instructions weren't clear enough, though,

or was it because, I mean why, why?

MR. KATZ: I understand what you are saying.

CHAIRMAN GRIFFON: Yes.

MR. KATZ: Yes, well -- so I mean they are saying that -- I mean this is new for DCAS --

(Simultaneous speakers.)

MR. KATZ: -- concessions and they're not doing -- even though ORAU is in the practice of doing this document your assumptions and all that, the DCAS folks were not in the practice of --

(Simultaneous speakers.)

MR. KATZ: -- so their blind copies are not documented as well -- right, isn't that what you're saying?

DR. ULSH: Exactly. We didn't find ORAU to be --

CHAIRMAN GRIFFON: So they were documenting the --

DR. ULSH: Yes, they were -

CHAIRMAN GRIFFON: Okay.

DR. ULSH: It was the DCAS HP that was put in the --

CHAIRMAN GRIFFON: Okay. Okay.

MR. CALHOUN: I am not sure that you could go into an ORAU DR record and say I chose this DCF because of this, you know, there's tools that are available that select the DCF based on the organ, for example, that you're doing, you know, external dose. I don't think you're going to go in and find I used this neutron spectrum because of this. It's just a template that's used as part of their tools.

Now, I may be wrong but it's not anything we would see and I'm fairly certain that that - that does not exist to the level that you might want to see. But I'm not sure I think it needs to exist.

You know, I think it's more important for our folks to explain their determination as to why they made the decision

and then compare to that, to the mass production of these dose reconstructions that are coming out and then we can determine if their overall process meets our expectations. That seems to me like how I would like to see it go.

MEMBER MUNN: I agree with Grady. I think that's correct, and I have a little problem with one thing that John said. I don't know of any way that we can quantify the respective experience of individual dose reconstructors with respect to any given site. I just don't know how you could quantify that --

MR. STIVER: You could. It's just a matter of you -- you are dealt a certain hand and you've got people that are your best reconstructors and you know, they will learn over time as they do more of these things, but probably you'll see less of that as --

MEMBER MUNN: Yes. I can understand why you would say that you know

that --

(Simultaneous speakers.)

MEMBER MUNN: -- but I don't see any way that we can do that before the fact, and I don't see any real way we could do that even after the fact.

They are either cognizant of activities on the site or they are not. I --

MR. STIVER: Well --

CHAIRMAN GRIFFON: Just to go back to Grady's point, I mean maybe I misstated it in that the DCF may not be the best example but I'm just thinking of situations where, because we have run across this in the years of our reviews, is that we have -- you know, even for internal dose reconstructions, I can remember many times when Scott's on the phone saying, you know, well I think that what the dose reconstructor probably did was made this assumption, because when I redid it, this is the numbers I got, and so that the assumptions weren't stated and when SC&A reviewed it, it

was kind of a guessing game of what assumptions they made and so I'm saying critical assumptions, maybe DCFs are all, you know loaded into a workbook and you know, that may not be the best example.

But you know, for some that you have to make a decision, maybe it's a claimant-favorable case or whatever the decision is based on. Maybe it's on a worker versus a more environmental dose decision, you know, you -- somehow that is noted in the case and I don't know if that's you know, if you found that or looked at that in these cases. But that's what I was talking about, but I, you know --

DR. H. BEHLING: This is Hans Behling. Can I make a couple of comments here because I have been involved in the dose reconstruction process since the time we first got the contract back in 2004, and I have some fairly strong comments about this particular report that I have had the chance to review,

and I would like to make a few comments here that will perhaps rain on somebody's parade here a little bit but I think it needs to be stated.

I remember back in January 2005 when we first reported on our first set of cases that I came to a couple of conclusions that one, the guidance documents were not really sufficiently prescriptive. There was too much wiggle room, too much subjective interpretation that would allow a certain variability that was probably not warranted.

Secondly, I also questioned the quality of the dose reconstructors who were doing these things. In other words I came to a disturbing conclusion that perhaps not all dose reconstructors were created equal, which in combination of those two things, not sufficiently prescriptive documentation for dose reconstructors to follow and perhaps the quality of the dose reconstructors themselves, would ultimately lead to a situation where the

luck of the draw for the claimant whose claim was being evaluated, was potentially open to a high degree of variability.

And back in 2005, at one of the meetings, I went on record in stating that perhaps blind dose reconstructions should be done in-house, not by SC&A, to do two things: one, verify at the prescriptive level of each of the guidance documents; and two, make sure that it is not the luck of the draw that would decide whether or not a claim would be compensated or denied.

And apparently, obviously, my recommendation was ignored. But in looking at this document, first of all, currently the document is a little late in coming, and secondly, by design, it falls very short of what I thought it would actually do.

And the reason I say this is because I looked at the eight cases and I looked at the PoCs that were actually assigned to them, out of -- six out of the eight PoCs

were below 10 percent and three of them were below one percent.

And so when I read the conclusion in your report that all of the blind dose reconstruction there was one that had 59 percent and that was the only one that had a problem, but for the other seven, the statement says, "All of the blind dose reconstructions were consistent with the official dose reconstructions," in parentheses, "i.e. both calculated with PoC values greater than 50, of those calculated with PoC less than 50."

Of course that's something that comes as no surprise when you had cases here that six of which were below 10 percent, it would be absolutely horrid for me to say that any of those six would have actually gone over 50 percent and conversely.

And so what I really think needs to be done here for this process to have any meaning, is to not select the cases as is

stated here -- the cases are selected randomly with each week for the review.

I mean I think the issue that needs to be addressed here is what would happen if we had cases that had a PoC, DCAS PoC between 45 percent and 55 percent, five percent on either side of the pivotal point, and then determine how many of those cases would remain consistent as being compensable and non-compensable.

When I see PoC values less than 10 percent, in fact three of them were less than one percent, of course you are going to be consistent, and I would believe that the future cases that should be assessed, should have a PoC, a DCAS PoC, between 45 and 55 percent so that we can then assess is it really luck of the draw for the claimant in terms of a dose reconstruction that has -- that is sitting near the pivotal point, near the edge.

And if you were to tell me, or if

these cases would have been in that particular range of PoC, then I would say you've got a Quality Assurance Program that says yes, the guidance documents are highly prescriptive to the competence of the individual dose reconstruction is such, where we can reasonably assure that no matter gets this case, it's going to end up with the same PoC either denied or compensated. And I think right now I don't see that.

MEMBER RICHARDSON: Can I respond? I -- there are several -- there are a number of points there which are good. One had to do with variability in the dose reconstruction, and the luck of the draw in terms of the dose reconstructor, and how you could minimize that through what you have described as reducing the wiggle room in the guidance documents, and I think those are very valuable points.

And I had the same sort of question in mind. I imagined ORAU losing a dose reconstructor on Monday and being able to

offer a package which seduced a NIOSH dose reconstructor to go and work for them privately.

And we had a situation here where two people, both trained with experience, came up in one of these eight cases with different determinations and it was decided it was because, in this realization of that, the ORAU dose reconstructor was more experienced and followed the documents in a different way, and the NIOSH person had less experience with it.

But if that person had quit on Monday and you had hired the NIOSH person on Wednesday, that dose reconstruction may have been done by the less experienced person, and the decision would have slipped in the other direction.

I think that was the scenario you were sort of discussing. Now perhaps we will learn that in-house, ORAU does have a process in place which would catch that before it came out, but at least there's, I mean -- to me

this opens up the possibility that there are, as you said, not everybody is created equal, there are different levels of experience and there's the possibility that two people with the best of intentions could have led to the very extreme case of having different decisions.

DR. H. BEHLING: Well, in the reviews saying --

MEMBER RICHARDSON: If I could finish up, because you had a number of points and I wanted to get to them.

DR. H. BEHLING: Okay.

MEMBER RICHARDSON: The issue of sampling based on Probability of Causation as opposed to the process which is in place here of a random draw I think has a number of flaws in it.

It would be, it would be ideal to do if you knew the truth. If -- what you are proposing is to take the Probability of Causation as per -- what we want to audit is

the quality of the dose reconstruction. You would be able to find those situations in which that had erroneously been high, but you wouldn't find the situations in which it had been erroneously reconstructed low.

So we don't know what the gold standard is until we do the audit, so there is a real advantage to random sampling from the base in which you want to base your inference, and not targeting it on one of the, one of the data points which itself is measured with error.

So I think, I mean I sort of am leaning towards, I really like -- I like the process that has been put in place by NIOSH. It requires that you run this audit system --

DR. H. BEHLING: For a longer time.

MEMBER RICHARDSON: -- for a longer period of time before you are going to get the information, but the type of information you get is going to be -- allow

you to catch false negatives as well as false positives.

And if all you are interested in is the final -- the only metric you are interested in is the determination being true or false, which I really don't think is what this Subcommittee needs to be solely focused on. I think there are other quality issues.

Because there's risk coefficients that tie into the other, into the dose data in order to get that Probability of Causation, and that's -- we're -- the whole system is set up to be very, very insensitive to errors that are -- we're going to say are very low, like an audit of eight or 80 cases hopefully is not going to really be powered to find those problems.

DR. ULSH: I have a couple of comments.

CHAIRMAN GRIFFON: Yes, Brant. Go ahead.

DR. ULSH: I think we need to be

careful talking about the competence of ORAU dose reconstructors and focus on the product that comes out.

If we see some deficient dose reconstructions coming out from a particular dose reconstructor, that's a matter that NIOSH will bring up with ORAU for sure.

That's not what this process is designed to do, to root out weak dose reconstructors.

CHAIRMAN GRIFFON: No --

DR. ULSH: In terms of --

CHAIRMAN GRIFFON: And that's totally not where I'm heading, I mean, that's a blame the worker approach quite frankly, and if the system works, then those things are caught, and can be taken care of in training, whatever.

DR. ULSH: Yes. In terms of selecting cases and going after ones that are near the 50 percent Probability of Causation, if you want this process to be blind that's

not possible, because at the point where we pick the cases, the dose reconstructions haven't been done yet. We don't have an estimate of the PoC.

So if you want a different process, that's fine. We can discuss that. But that's not the way this was set up.

DR. H. BEHLING: Let me just make a comment here. It's obvious that the bulk of these cases, with the exception of 59th percentile are cases that were probably subject to best estimates and of course we know by definition that there's a tremendous amount of wiggle room built into the maximized dose.

And there's no point in looking for consistency because by definition, we allow a lot of leeway to the dose reconstructor to throw in everything but the kitchen sink to say given the worst-case scenario you are still not going to be compensated, and therefore there's a lot of

subjective issue here in the dose reconstruction with no penalty, because we are trying to convince the claimant that no matter how you look at his case, he is not going to be to compensated, and so for consistency point, yes, if we all come below the 50 percentile, we say we won the argument.

But the truth is there is really very little prescriptive approach to a maximized reconstruction, and so I don't see the value in it.

DR. ULSH: Well, the guidance document should be prescriptive enough so that the compensation decision is consistently correct. If two dose reconstructors do a dose reconstruction in a different way, but both are equally correct, in other words, let's say I have vast experience in internal dosimetry so I choose to look at the internal dose and that's enough to put the guy over. A second dose reconstructor comes from an external dosimetry background. He chooses to do the

external and that's enough to put him over. Is one of them wrong? No.

And the guidance document should allow that kind of latitude, as long as the compensation decision that is reached, is correct.

DR. H. BEHLING: Well, early on, when we were doing dose reconstruction and I was very much part of it, so it was the first several sets before I started to wean myself, but one of the things we always said, we need to really look at the best estimate, because that's where the rubber meets the road.

This is where quality assurance comes in. This is where prescriptive guidance documents come into play. All the other ones, as far as I'm concerned, were questionable because we always knew up front that those were the hanging low fruit, as we referred to them in those days, and they had very little to say about the quality of the guidance documents, because you were by and large in a

position where you could assign almost anything as long as we knew for a fact that ultimately they were not going to be a PoC that was subject to compensation because that's when we would kick in, into next year, where there would have to be thousands of iterations and review of everything.

And we have had cases where we had a PoC of 49 point some change percent. Those are the cases where obviously would have changed with the luck of the draw here. Where do we have the ability to say no, you are going to be denied a compensation or you will, and this is where I would love to see people -- the dose reconstructors sit down blindly and say how many of you would agree with you're not going to be compensated versus you are?

And this is where I believe the quality assurance would come at its finest test to see how consistent are we. Is it the luck of the draw or is it not? And we are not going to know this by the cases you are

reviewing right here.

MEMBER RICHARDSON: Could I ask, because John had suggested that the report indicate -- that the summary report indicate what the approach was taken, and I think that would be useful and it may actually guide how later on these descriptions develop, whether there's different levels of resolution or information put in for different types of dose reconstruction.

I guess one of the things I am not clear about is do we imagine that there will be situations where NIOSH -- a NIOSH dose reconstructor tried to do an -- or took the overestimating approach and an ORAU dose reconstructor did not, will there be, I mean, does that -- do we need three categories, or do you need a cross-classification of all possible categories?

MEMBER MUNN: Isn't that covered by the third of the purposes that we -- that were listed in your summary there? The

finding prepared decision points and assumptions used, doesn't that fall under that category?

MEMBER RICHARDSON: Maybe, but I am just imagining, is the summary report, is the -- the easy one is where let's say they are both doing overestimating approaches, and you have got a brief report that says they are going -- there's -- there's less, kind of, nuance that needs to be done on entry, but are there going to be situations where one dose reconstructor decides to do an overestimate and the other one has --

DR. ULSH: Well, I think at the outset that could happen. I mean, both ORAU and NIOSH dose reconstructors have a feel for what kind of cases tend to be compensable or not and so we might start out with a particular assumption, like --

MEMBER RICHARDSON: Prostate cancer --

DR. ULSH: Yes, if it's a prostate

with very little exposure, we are going to start with an overestimating assumption. Now, could it happen that ORAU and NIOSH would start out with different initial assumptions? Yes, that could happen. It would be unusual but it could happen.

But what should happen is if I start out with an overestimating assumption and I get a PoC over 50 -- let me make sure I'm saying that right -- then I've got to slam on my brakes and say I did it wrong. Then you go back and do a best estimate.

MR. CALHOUN: And I kind of think everybody is going to start out with either an over or an under. Nobody is going to start out with a best because it takes too long.

You know, that's just, that's just how we --

CHAIRMAN GRIFFON: You just want to get a feel for where you are, yes.

MR. CALHOUN: They're all, ORAU and us, we are going to start out either

overestimating or underestimating, and you know, there's really not just an overestimating and just an underestimating and just a best, it's a gradient and it's just a -- you know, you start out at one and you gradually work your way to the center, to the best estimate in all cases really.

But if the overestimate is successful, you are done, and if the underestimate is successful you are done.

MEMBER MUNN: Well, you have to be practical --

MR. CALHOUN: Right.

MEMBER MUNN: -- in your estimate approach when you think we have so many cases to look at.

MR. CALHOUN: Now the degree of overestimating or underestimating is certainly going to be different.

MEMBER MUNN: That comes in the comparison of the decision points and assumptions.

CHAIRMAN GRIFFON: And I appreciate, I mean, I understand Wanda's point. I also think the way we are sampling is correct for an ongoing program at NIOSH.

But I guess the concern I would have is the sampling rate or, you know, at what point are we going to have enough to address some of Hans' concerns, you know, if you're down to one a week now, it worries me a bit. I understand resource-wise, you know --

MR. HINNEFELD: I got to tell you guys, there's a lot of activity now being, you know, demanded by the Subcommittee, you know, we are, like Ted was pointing out earlier, we are six reviews behind.

CHAIRMAN GRIFFON: I'm asking. I'm asking.

MR. HINNEFELD: We're behind.

CHAIRMAN GRIFFON: I'm not --

MR. HINNEFELD: We've got this additional process that we're doing, you know, I made the decision to back off the one

because we weren't keeping up with two, and with the others, and you know, I'm not sort of crying on anybody's shoulder, we just had a resignation of one of our top DR review performers, of a guy who really keeps the DRs going out the door.

CHAIRMAN GRIFFON: Well, and this is something you can -- I mean you are doing one per week, you get in about 250 a month, is that, is that --

MR. HINNEFELD: Yes. Two to two fifty in there. Actually the new ones are closer to 200.

CHAIRMAN GRIFFON: So you are doing four per month and it's about -- two percent, around two percent, right?

MEMBER MUNN: This is close to what we originally said we would try to sample.

CHAIRMAN GRIFFON: So I mean I think you can look at the -- at least historically, how many cases have fallen

between 45 and 50.

MR. HINNEFELD: Not that many.

CHAIRMAN GRIFFON: And then how long is it going to take you to get a good number of those --

MR. CALHOUN: I thought that just was picked up here in the committee. I know I have --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: This is really a different process --

MR. CALHOUN: But still, still it's a process, it's going to go through the TBD and say okay, I don't believe this was correct and you don't believe this is correct and we'll kind of hash out our differences. You'll find it's similar.

DR. ULSH: I was going to make a --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: Yes, we are focused on those. You are right, you are

right. I'm just asking how long it might be --

DR. ULSH: It'll be a while --

CHAIRMAN GRIFFON: Well yes, right.

MR. HINNEFELD: But I mean, we've got a, we've got an inbox full. I mean we have done 80 and we were selecting two a week for what, four months?

You know, so we have got an inbox full and so --

MR. CALHOUN: Yes -- a lot of them, you know, assigned and --

MR. STIVER: And given enough time, you guys, we'll have a representative sample.

MR. HINNEFELD: But do you know off the top of your head -- the representative is going to be skewed towards low --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: So 45 to 50 is what, maybe five percent or not even?

MR. HINNEFELD: Oh I don't know. It's not a whole lot. Not even five percent. I'd have to go see what my -- I might have a slide somewhere that says something about --

MR. STIVER: I think that was on one of your summary slides has the stats on it.

DR. ULSH: I was going to follow up on Grady's point, and that is that we have other ways of looking at best estimate dose reconstructions. As you are all intimately familiar with, this committee focuses specifically on those dose reconstructions.

CHAIRMAN GRIFFON: Right.

DR. ULSH: But we also have other ways of evaluating whether our guidance documents are sufficiently prescriptive at the Procedures Subcommittee. That's one of the things that, you know, when SC&A reviews procedure, if it's unclear, that's one of the things that they comment on frequently.

So it's not like those topics are

being ignored. It's just that this particular process, the blind dose reconstruction review, is not designed to address those particular issues.

MR. KATZ: Actually, it's sort of integrative. I mean it addresses all issues, really, it's just that it can take a while to build up the data but --

MR. CALHOUN: And --

DR. H. BEHLING: The problem is I have seen that this whole process was in essence a final QA test and as such, I stand by what I said earlier, and in fact I even thought -- early on when I made those comments back in January 2005 to the Advisory Board, that maybe this whole process could actually be used to select dose reconstructors as part of the screening process. It's like accepting a candidate into graduate school, you have to pass a test, and for instance a blind dose reconstruction by dose reconstructors would be that test that says you came within five

points of our estimate of a PoC, and I think you make the grade in becoming one of the dose reconstructors.

And then I think this is exactly what I always felt, that blind dose reconstructions that initially was passed on to SC&A, we were the ones, we were asked to do blind dose reconstruction, and I questioned, what is the value? We don't do dose reconstructions; we audit them.

And it was always my understanding that that whole process was aimed at the final quality assurance test.

CHAIRMAN GRIFFON: Well, we may have some disagreement on that. But I mean I --

MR. HINNEFELD: With respect to training programs, ORAU has a more robust dose reconstruction training program, candidly, than we do.

CHAIRMAN GRIFFON: And see I think that's all part of this, of looking at the

quality program, because I am pretty sure, I mean just by knowing some of the individuals even at ORAU, that you get these difficult internal dose cases and you've got certain people that work in that area, right?

MR. HINNEFELD: Yes. Yes.

CHAIRMAN GRIFFON: And then the other, I mean the other, the other sort of checks that we're interested in is the peer reviews, and you know, sometimes -- and we've noted this in past -- some of the audits, I mean Doug has demonstrated this on several occasions, where you know, this, this is a big difference in dose, and not that it made any difference in the ultimate compensation, but how did this not -- how did this get signed off by three reviewers without getting caught? You know, this kind of -- so I guess that's the, the -- I think the system is more important than, you know, is the DR -- individual DR person competent enough. I think if it were a typical case then you have

certain people that are going to do certain elements of it, and you have a -- if you have rigorous review, then it gets caught, and if you are finding one DR is deficient constantly in one area, then you should have a feedback loop that says they need more training in this area --

MR. HINNEFELD: I suspect there's a lot of that that goes on on the ORAU side. To your question, how many are -- I'm sorry, 45 or 50, let's just get this out of the way. I don't have 45 and 50. I have 41 and 49 as of February --

MR. CALHOUN: I can find out.

MR. HINNEFELD: Out of 30,000 cases that had been done, 2,100. So that's less than 10 percent are using 41 --

CHAIRMAN GRIFFON: Forty-one to -- yes.

MR. STIVER: So we are talking five to 10 percent.

CHAIRMAN GRIFFON: Yes.

MR. STIVER: It's at 10 percent.

MR. HINNEFELD: Probably less because that was -- 41 and 49 is less than 10 percent, so 45 to 50 is below five.

DR. MAURO: Mark, this is John. If it's an appropriate place to jump in, I heard something earlier that went right by, that I think needs to be talked about a little bit, and -- or put to bed.

During the discussion, a statement was made that very often most dose reconstructions really start off as you know, either maximizing or minimizing the -- and which was -- and then of course, and if it's maximizing, and you come in above, you know, it slips, it gradually slips into more and more realistic.

Now, this is the concern I have. It has to do with the implications, if this in fact is the case -- it may have been not exactly the way it's done -- but what I heard was, well, we came in, we did a quick one and

we came in you know, at 58 percent or whatever it came in, you did a maximizing and you said, hmm, let's take a closer look, we probably threw in too many conservative assumptions, and let's get a little more realistic.

And I have seen a few of these and what happens is the skilled dose reconstructor could take a closer look and start to work on it and said listen, we could do better, this is just too crude.

And all that is very understandable but there is an unintended consequence here and I have run across these, where we get to the point where the ability to shave -- and it might be legitimate, don't get me wrong -- and it's a hmm, we could take a close look at this, let's take a close look at this, and little by little work your way and just dip it below the 50 percent and deny.

Now, all of that might be legitimate. What I mean by that is when you bring a level of excellence and saying listen,

we could do better, and do a better scientific analysis of the data and the assumptions and get it below, and one of the -- and there's nothing wrong with that except that what happens is, it goes back to Hans' point, if that's the process, I'm not saying that it is or it always is, but if that is the process, what you have is a process that on two levels could be problematic.

One is the optics of it, that is it certainly looks like you're working and I mentioned this once before, I got myself in a little trouble, it looks like you're working real hard to get below that 50 percent and you do not want that optic.

And the second thing is -- goes to what Hans pointed out about the skill of the dose reconstructor who has a great deal of knowledge on internal or external dosimetry and what the processes are.

So if what I just described is a fair representation of the process, there are

these unintended consequences of what appear on the surface to be certainly a valid approach, but it has this unintended outcome.

What I just described is there's a general sense that that process that I just described is in fact going on and is a matter of routine.

MR. CALHOUN: Well, this is Grady and one thing that I can clarify on that is that any time that we have a DR that a cumulative PoC, Probability of Causation, comes between 45 and 52 percent, there can be no aspects of that DR that are overestimated or underestimated.

So that would eliminate, I think, at least a portion of what you are getting to. You can't just eliminate some of the overestimating portions to get you to 48 percent. Once you get into that 45 to 52 percent, there can be no overestimates or underestimates as part of that DR, at least there shouldn't be, that's the --

MR. FARVER: You see that all the time. They call them hybrid cases.

MR. HINNEFELD: In the 45 to 52 --

MR. FARVER: Yes.

MR. CALHOUN: I'll check on that. I've never heard of a hybrid case, ever.

MR. FARVER: Well, we used to call them best-estimate cases and then we started tracking best-estimate and we said this is a best estimate, and you'll say, oh no, we overestimated these doses, just you know, a small --

MR. CALHOUN: That's okay as long as it's below 45 and above 52.

MR. FARVER: But not within that range of 45 --

MR. CALHOUN: Correct.

MR. FARVER: Okay. I believe we have seen them.

MR. CALHOUN: Yes, I have to check on --

MR. FARVER: I wouldn't --

(Simultaneous speakers.)

MR. FARVER: I'm not sure if they are under 52.

MR. CALHOUN: There's a selfish reason for that, in that it's a pain in the butt to run the thousand -- the EE runs on IREP.

MR. FARVER: The 10,000 runs --

MR. CALHOUN: Yes, and that delays us getting case out the door. So when I look at cases, and I'm sure that the other guys too, when they look at cases that are going to require that 10,000-iteration run, they make sure that there is no -- there are no overestimating aspects of that dose reconstruction.

DR. ULSH: You could both be right though, however, because we implemented that best-estimate procedure, 45 to 52, at a particular point in time --

MR. CALHOUN: Oh yes.

DR. ULSH: And before that, we

might have done something different and that --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: You might be remembering older cases --

MR. FARVER: Could we have that data at some point?

MR. CALHOUN: I am checking right now to see if we can get some numbers on the total number between 45 and 52 percent.

DR. ULSH: Grady, won't it be the -- the date that we made that change, won't it be about the time we did the PER and we re-looked at all those cases?

MR. SIEBERT: The PER on that issue, I'm looking to find it right now.

MR. HINNEFELD: But won't it be about the time you made the change, is when we did that PER?

MR. SIEBERT: Yes, I'm going to say it's somewhere around March to May of 2005. But let me pull that up.

MEMBER MUNN: That sounds about right. And, John, I have to take issue with something that you said. You continually made the assertion that anyone who was attempting to be more precise in their dose calculation was deliberately attempting to go below a certain point rather than to be accurate and, which would, in terms of accuracy, just as likely place you above the point.

That just doesn't seem reasonable that you would make the assumption that someone was attempting to avoid a just claim.

DR. MAURO: You know, it's funny, I didn't want to characterize it that way, Wanda, and I understand --

MEMBER MUNN: That's the way it came across, John.

DR. MAURO: Yes, what I, what I -- see, it's a process, the process being when you start off with the idea that listen, we want to move these out quickly, we'll do an overestimate, you come in and everyone agrees

it's an overestimate, we come in below 50 percent, we're done.

And that's fully -- that makes perfect sense. But what it does, then, is it puts you in a process that -- where you are not, you are not deliberately -- how can I say this. You are not deliberately trying to get the guy below 50 percent, but --

MS. LIN: Dr. Mauro, this is Jenny Lin with HHS, and I think the agency has a statutory responsibility to make best estimate, a reasonable estimate, dose estimate, under the statute for a compensable claim.

So I appreciate your input but I think we can rest that conversation at this point.

DR. MAURO: Okay.

MEMBER POSTON: Hello? This is John Poston. I just wanted to let you know I was about a minute late. Sorry.

MR. KATZ: Oh, John Poston.

MEMBER POSTON: I couldn't get a word in edgewise, so --

MR. KATZ: Well welcome, we are glad to have you, John. And I need to do my -- -

(Simultaneous speakers.)

MR. KATZ: I have to just announce your conflicts since you are on the line, because that's a procedure that we have put in place for all FACA committees across the CDC, Subcommittees.

MEMBER POSTON: Well, that should be everything, isn't it?

MR. KATZ: Yes, it's everything -- no. No, but -- so let me just -- I don't expect you to recall these but let me just note, these are BWXT, X-10, Sandia, LANL and any DR matters involving Dr. Poston's son, Y-12, West Valley Demonstration Project, Pantex and any DR matters involving Dr. Poston's daughter.

MEMBER POSTON: My son is pretty

well versed at making sure that I don't see anything that -- he keeps me straight.

MR. KATZ: Right, right. No, I -- and, John, this is just a requirement, I have to announce it for each Member, for the DR Subcommittee and same with Procedures when we go to Procedures Subcommittee meetings.

MEMBER POSTON: Thank you.

CHAIRMAN GRIFFON: Can I just follow up, I'm not exactly sure what -- why John was cut off, I'm not -- you know, but anyway, I think what we have seen, this could get to that point, what we have seen is, when we sharpen the pencil, I think it's more a question of, even in those best estimates, there's still assumptions that have to be made by the dose reconstructor often, especially in internal dose reconstructions, and when we have reviewed -- several of these in the first set were Savannah River cases, and they were very close, and I guess sort of to build on Hans' point, I don't think you want the luck

of the draw, and I think the system at ORAU has to -- and NIOSH has to protect from this that you don't give one -- you don't, by luck of the draw, get a more, a person that's going to make, you know, tend to make more restrictive assumptions as opposed to a more generous assumption. You know, it should be neutral to that, it should be -- and sometimes, just by the nature of people's backgrounds, they have done dose -- they have done it a certain way all their life, they know -- you know they really feel this is correct and right, they're not trying to bias or get the number low, they just feel like that's the way they're doing things.

On the other hand you don't want it to be a luck of the draw situation so that -- but I'm saying the system should catch that, if you find that this is happening constantly with one dose reconstructor, you may have to say well, you know, I understand the way you've done things, however we are

giving a little more, you know, claimant-favorability and this is the approach here. Whatever.

MS. LIN: Sure, I mean I understand that perspective --

CHAIRMAN GRIFFON: Yes, that's I'm trying to get at.

MS. LIN: But I would encourage that this Subcommittee to --

CHAIRMAN GRIFFON: I think that's sort of what John was getting at.

MS. LIN: -- the technical part of it as opposed to making a generalized discussion about how best estimate is never becoming a tool of minimizing compensability. That's all I'm saying here.

CHAIRMAN GRIFFON: Yes, I don't think -- I don't --

MS. LIN: It shouldn't -- I mean, for public members who may be listening or may be reading the transcript, it's very dangerous for the agency to be -- the agency's

credibility to be tainted by that kind of allegation.

CHAIRMAN GRIFFON: And I don't think John -- I don't think John meant that, but I don't speak for John.

MEMBER RICHARDSON: Can I ask --

CHAIRMAN GRIFFON: But anyway, we'll --

MEMBER RICHARDSON: Can I ask for clarification? The -- I mean this is all framed within how to -- how to usefully summarize the blind reviews.

And my -- my suggestion earlier, or thought, building off of John Stiver's comment, was the -- was that the dose reconstructors would each -- each indicate what type of reconstruction they had done.

It's sounding from Grady's comments like that -- that's a little bit fluid and actually what's -- you, maybe the name that would be given to most dose reconstructions is, is not purely that it was

an overestimating or a best estimate, but it has aspects of each to it.

MR. CALHOUN: Sure, we'll call it that. We'll -- if there's an overestimate of missed dose for example, let's say that we used the actual x-ray doses, which would be a best estimate, and we used a maximizing approach to missed dose, the case is still an overestimate because there was some portion of that dose reconstruction that was overestimated.

MR. HINNEFELD: But some people may refer to that as a hybrid of best -- I mean, there -- we haven't really defined it as a hybrid but some people could, you know, really use that --

MR. CALHOUN: I would contend that all DRs are hybrids then, because there's always a degree of over or under.

MR. STIVER: My experience -- this is John Stiver - is that what Grady's saying is true, that they are hybrid cases. It

depends how much refinement was applied and then what brought -- the type of scenario that was affected --

MR. HINNEFELD: And whether you gain any time, I mean, the whole idea of that overestimate is, it's got to be -- it should be more efficient. If it's not more efficient -- it's just as efficient to give the actual X-ray dose as to give the actual X-ray.

MEMBER RICHARDSON: And so, if we were to measure a report that had components of the dose broken out, and they would flag, okay the X-rays are best estimates, yes or no, the internal doses is a best estimate, they're a hybrid, or --

CHAIRMAN GRIFFON: We do that on our case selection matrices.

(Simultaneous speakers.)

MR. STIVER: There may be more, you know, in complete documentation, for if a particular aspect of the reconstruction, say, a measured photon dose was -- or a missed dose

was overestimated and then was changed later, just a comment to that effect.

MEMBER RICHARDSON: I mean we talked about --

(Simultaneous speakers.)

MEMBER RICHARDSON: -- in terms of summarizing, and I think it's fine to talk about, you know, briefly summarize those where the decision flips, but I am agreeing kind of with the idea that the intention of this sort of line review is less to focus on that, and in part is to -- I'm wondering if like the experience from the other sort of work that has been done by the committee, where we flag things that are quality issues, what the nature of, of those -- what are the processes that led to those and maybe we could try and kind of get, get those sort of -- are those, I mean, so you can help, you can remind me what sorts of -- where those came up. Are those anything from data entry onwards?

MR. SIEBERT: Oh, there were some,

I think it was a matter of transcription errors that were found, decimal point, it might be a millirem versus rem issue.

(Simultaneous speakers.)

MR. SIEBERT: It could probably be caught with an interview review I would think, or outside.

MR. FARVER: Or years were omitted in the final IREP table. In other words the workbook tool calculates the doses, they are in the workbook tool. Somehow they don't make it to the final IREP table.

MR. STIVER: Yes. There's the hand transfer of --

MR. FARVER: A year just gets cut out.

MEMBER RICHARDSON: And so that's where I was -- when I was first reading this, and there were kind of -- there was information about the number of years of dose from one organization versus the other, that was -- those were the sort of things I thought

I was catching which I think maybe I wasn't understanding.

But if there was -- if the summary report had a little bit more focus on these -- those things which we have been passing as quality issues, as separate from judgement issues, maybe that would be a way of --

MR. HINNEFELD: Yes, we could -- you are getting this, right, Grady?

MR. CALHOUN: Yes, our plan is certainly -- we -- I agree that we do need to improve the usability of the information that we get out of these blind reviews, and one of the things that -- one of the most important things that we -- that could come out of this and will come out of this, is that we're going to end up changing documents that add to that confusion between the ORAU team and our guys.

So this is the very first line, you know, we are going to add that TBD modified so that it is more instructive to people who are doing the dose reconstruction.

And that's what -- that's one of the biggest benefits I see coming out of this, is we should be able to come up with very similar approaches. You know, the degree of overestimate will always be an issue, but for this one in particular, there should be some more clarification as far as when to use a critical level or an MDA.

MR. FARVER: On these blind evaluations, are you looking at the IREP tables and comparing them, the final IREP tables?

MR. CALHOUN: Yes.

MR. FARVER: Or are you comparing the DR report?

MR. CALHOUN: We're not so concerned about the text as we are the numbers that have come out. But the text will help us see how they determined it.

Now, you've got a guy who does the blind DR, the calculations on our side, and we are -- I'm just going to say ORAU does the

other one, and then there's a third person who compares them.

MR. FARVER: Okay.

MR. HINNEFELD: And the -- our people don't really write the text.

MR. CALHOUN: No, they don't write the text, no.

MR. FARVER: That's okay --

(Simultaneous speakers.)

MR. CALHOUN: We have seen problems before with the DR text not matching the IREP table.

MR. FARVER: Right, and that's why I was wondering, you know, how are we going to catch that, or --

(Simultaneous speakers.)

MR. CALHOUN: No, we wouldn't catch that --

MR. FARVER: Okay, that's okay.

MR. CALHOUN: But we'd catch that here, as evidenced by the fine reviews that you just got

(Simultaneous speakers.)

MR. HINNEFELD: They should be caught in the internal review.

MR. CALHOUN: Yes.

DR. ULSH: And I think the kind of things that you were talking about, David, the QA issues and where should they have been caught, that's not the purpose of the blind DR, that's those other five cases that we picked from the 12th set, and they are exactly what I think you described there.

MEMBER RICHARDSON: I wasn't thinking about digging into them. I was just thinking about, kind of the usability, trying to break out sort of classes of problems with, with these blind reviews -- I was having a hard time just -- I mean it was the first stab at a summary.

MR. CALHOUN: I would have a hard time understanding it, you know, looking at everything that everybody had done, because it wasn't as consistent as I would like to see,

and I just looked, there's 93 in the queues right now for us to do, so we've done eight. It's our first eight that are complete, so we are going to get better at this, I promise. It's just a matter of getting a little bit of experience.

MEMBER MUNN: The process is always the harder barrier to go over.

(Simultaneous speakers.)

MR. FARVER: Could I ask a few questions about this batch?

CHAIRMAN GRIFFON: Sure.

MEMBER RICHARDSON: One thing I just, I would point out, is as was just said, I mean one of the purposes of this was to keep them timely. If they build up into this queue where you've got two years' backlog already. There's a problem of maybe wanting to purge that queue and --

MR. HINNEFELD: Yes, it's all -- it's a few months, you may be able to bring some of the earlier selections out. But we

only started selecting, what --

MR. CALHOUN: Yes. Yes. It wasn't very long ago at all. So we do need to just get a hold of this. This is just one more thing we started and just need to rein in -- I need to rein in.

MR. HINNEFELD: That's why he's coming.

(Laughter.)

MEMBER MUNN: But in some ways this is fortuitous because it gives us an opportunity to have this discussion, which should inform the entire process.

MR. CALHOUN: Right, I agree.

MR. KATZ: Doug.

MR. FARVER: The first was page 6, the first claim or the first case. And this is just -- well this is just -- I don't understand. I'm trying to learn.

If you look at B.1.4.

MR. CALHOUN: Hold on. I've got to find this still.

CHAIRMAN GRIFFON: B.1.4.

MR. FARVER: Yes. 1.4 talks about the DCFs for the one year. I believe it's one year.

CHAIRMAN GRIFFON: Oh yes. That's the one I was looking at, and that's why I brought the DCF up --

MR. FARVER: I don't understand how you can have an overestimate of one and an overestimate of 1.244, and both be overestimates. If it's higher than one, you should use the higher value.

MR. CALHOUN: I am still not there yet.

MR. FARVER: Perhaps that's one to follow.

CHAIRMAN GRIFFON: That's the exact one I was looking at when I made my example before.

MR. STIVER: How can that be an overestimate if you are using the value of one?

MR. FARVER: Well, one of them should not be correct.

MR. CALHOUN: Where am I? Which one is this?

CHAIRMAN GRIFFON: B.1.4.

MR. FARVER: I could see if one was 0.8 and the other was 0.1. Okay.

CHAIRMAN GRIFFON: Or one.

MR. FARVER: Right.

MR. CALHOUN: I'd have to see that -- I don't know what kind of cancer this is. The term DCF may be less than one.

MR. FARVER: Well, then the 1.244 is wrong. I mean if you just used that number, you would use one.

MR. CALHOUN: Yes, I can't, I can't tell you.

MR. FARVER: But I mean isn't that the proper process? If it's 0.8 you could round up to one, you know, we've seen that a lot. You don't typically round over one to some odd number.

MR. CALHOUN: Yes, see that's one of those things, I don't know what the process is. I'd have to look and I'd have to see actual documents.

MR. FARVER: Things like this, I would like to see more --

MR. CALHOUN: Exactly. Exactly.

MR. SIEBERT: Well, I can probably shed a little light on that, because as you guys say, when you do these enough, you tend to notice numbers.

MR. KATZ: Go ahead, Scott.

MR. SIEBERT: It's likely -- this is Scott Siebert -- it's likely a bladder cancer because that's the upper, the maximum number of the DCF in the triangular distribution, though using the maximum number would obviously be overestimating.

Using a one -- the way the triangular distribution is laid out, using a one actually overestimates the full triangular distribution as well. So both of them could

easily be overestimates of the full triangular distribution.

MR. FARVER: Which one would you typically use?

MR. SIEBERT: As an overestimate, likely one. But once again, using the maximum as an overestimate also would not be inappropriate.

MR. FARVER: But that's not the typical process, is my point.

MR. SIEBERT: Yes.

CHAIRMAN GRIFFON: Go ahead on your next --

MR. FARVER: Now, if you look at the second claim, or second case number, I like this, it started at the beginning and everything is -- it's a mirror, one side to the other. And that's the way I think it should be. That's what you would expect if you look down page 8, and that's -- that's how it should be.

MR. SIEBERT: What page were you

talking about there Doug? I'm sorry.

MR. FARVER: Page 8.

MR. SIEBERT: Thank you.

MR. FARVER: And then we get down to the internal dose, F.1.1 and we see a difference. And then in the comments section they say that the two selected different uranium intakes -- well, that kind of bothers me.

MEMBER MUNN: Wondering why.

MR. FARVER: Right, because you are pulling a number from a table. It should be pretty cut and dried. No, for this case, it won't affect the compensation claim, but you know, that tells me there's something different in the minds going on here.

DR. ULSH: You know, I think you make a good point. We should put in more explanation about why there was a difference. I would caution you, though that in cases where there is a difference, ORAU, probably did it right and we probably did it wrong.

I think it's reasonable to expect that we should have analyzed the differences and say --

MR. FARVER: Well, what they are telling you is two knowledgeable people looked at it and they came up with different conclusions, you know, they picked two different values.

CHAIRMAN GRIFFON: And also, no matter who did it wrong, the more important question is why, you know, was there not enough guidance there to --

MEMBER CLAWSON: Doesn't this come back to what we've said, show your work, so we'll be able to understand why we did -- why they did that? That's something we have been dealing with all the way through this.

MR. FARVER: And then if you go on to the next case, and you go down to the bottom of page 11 in the comments, this concerns the F.2.2, but it came up with different internal doses and it talked about -

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CHAIRMAN GRIFFON: Can I ask, before you go on to that one, just talking about your mirror images, on page 9, right below that internal doses -- go on the internal dose section. It says, "Correct solubility used per TBD." And there's a false and a true. I mean, is it that DCAS used the different solubility and that's why they got a different number? Is that -- anyway, I don't just --

MR. FARVER: That could be. They might have chosen the wrong value from the table. But that's an error.

CHAIRMAN GRIFFON: Okay, anyway. Go ahead. I'm sorry.

MR. FARVER: Okay. Bottom of page 11, if you look through those comments, and -- I took a look at the internal dose and they used reporting level or MDA. The TBD does not specify. Well, maybe it should.

MR. STIVER: Is this one of the

findings you said was pretty important that was going to maybe result in a PER?

CHAIRMAN GRIFFON: Is this that one?

MR. CALHOUN: This is the one that, that we believe that ORAU did correctly, but I have already put out a request to ORAU to look at this and clarify that, so that's the one --

CHAIRMAN GRIFFON: Clarify the instructions.

MR. CALHOUN: There's going to be a change in the TBD.

MR. HINNEFELD: Yes, this is the one that gave rise to the --

MR. CALHOUN: Yes.

MR. HINNEFELD: Observations that we --

(Simultaneous speakers.)

MR. CALHOUN: And that's exactly what we're looking for, is when we can find things that we can improve our process and our

instruction, that's what we're going to do.

CHAIRMAN GRIFFON: But for this kind of situation, do you think that there was a possibility that other people at ORAU made the mistake that -- you know, made the assumption that DCAS made in this case? In other words is it a broader --

MR. CALHOUN: We'll have them look at that, because this could be very well embedded into a program that they don't have a big selection for.

MR. FARVER: We'll move on to page 12 on the next case, just by reading you can see it's an AWE case. It's using TBD-6000, and if you go to the bottom of page 13 and read the comments, a lot of it stems from choosing rolling operator as opposed to plant-floor load and I believe this has been an issue that's been brought up before about what value do you choose from the table.

And in some cases we believe you should choose a different one than what is

chosen by ORAU, by the, you know, the dose reconstructor.

So this is an issue we've run into in the past and it's obviously something that the dose reconstructors disagreed on. I don't know which one is right, I'm just saying there's some disagreement here.

MR. CALHOUN: Right, and I just looked, the person is listed as a lab assistant and I don't know the details of all these cases to that level, but I agree, when there's something that was different, we should have a sentence or two that says why.

MR. FARVER: And I think somewhere in there it says that the DCAS person did it because it was more claimant-favorable, which tells me that he wasn't sure, so he used the one that was more claimant-favorable.

MEMBER MUNN: There's some kind of comment about that in the text.

MR. FARVER: Is there? Okay, I'll comment about that. And if you look at the

internal doses in you know, F.1.1, it's off by a factor of 10 approximately. So for this case it didn't matter, but it could.

DR. MAURO: This is John. In OTIB-70, one of the things that we found very favorably, was there is a statement in there that says whenever there's some ambiguity regarding what category to assign the worker to, the direction is to give him the benefit of the doubt and put him in that higher category, which is a very good posture to take.

And what I'm hearing here is that, and most of the time -- I do a lot of these AWEs -- most of the time that's exactly what's done, that is I've seen on very rare occasions, they give a lower assignment to a worker. It sounds like you do have one case here that you looked at, where a lower assignment was given, and there's reason to question whether or not that was the right thing to do.

But I'd just like to make sure everybody recognizes that OTIB-70 is very good with regard to this, giving direct instructions to give the benefit of the doubt when there's any question because, where to place the person.

MR. FARVER: So maybe ORAU didn't do an overestimate on this dose. I don't know.

CHAIRMAN GRIFFON: And I guess this could become important. I'm just thinking of this 45 to 52 criteria that they have, that if ORAU chose an -- what they viewed as an overestimating technique, which you know, based on this DCAS review, wasn't quite as claimant-favorable, and it didn't, you know, if you used DCAS's model and I'm not saying it happened in this case, obviously it didn't, but if you used DCAS's model it kicked them into the 47 percent say, they would kick into a best estimate, whereas the -- you know, so I don't know how often that scenario would

actually happen, but do you follow what I'm saying, that if your overestimating technique is not truly overestimating, and you, you know, follow your procedure, if you get the 45 you'll go to best estimate but it doesn't, you know, get you to 42 percent, then you would, you know, you never may do that more sensitive analysis.

MR. HINNEFELD: So in -- yes, but specifically in this case, I mean, you said he was the lab assistant.

MR. CALHOUN: Yes, it's the lab assistant. I just looked up the CATI and they didn't ever knowingly work with radioactive material. They entered areas and oversaw steel operations.

CHAIRMAN GRIFFON: So there's overestimating and overestimating -

(Simultaneous speakers.)

MR. HINNEFELD: But we don't have any specific instruction about that.

MR. CALHOUN: Or discussion as to

why --

MR. HINNEFELD: -- a discussion as to why I selected this category, which probably should be here.

DR. ULSH: Since you just brought up the 45 to 52, to answer an earlier question, Scott just emailed me. "PER-16 states that we started doing the 30 IREP runs on June 6th of 2006." And that's that procedure we were talking about earlier.

MR. FARVER: Okay.

MEMBER RICHARDSON: There was an ORAU response for -- this is on page 13 for E.1.1, and I've -- this is one of these places where it seemed like there were several types of information maybe within this box. There was -- there's the -- if I am understanding it correctly, there's the total medical dose, which differs by a factor of 10 between the DCAS and the ORAU, which may be it's a DCAS key-punch error. And then there's a comment that says, "An X-ray for each year of

employment but in accordance with TBD-600, possibly should have also assigned a pre-employment X-ray for the first year of employment.

So three X-rays could have been assigned and it seems like there's a lot of, you know, I don't know, hedging there. Is the TBD not specific about that, and if so, did neither DCAS nor ORAU, but only the person who audited the comparison of all three, I mean, it seems like there's -- there probably is a clear statement about what was supposed to be done, and maybe nobody did it. If so, that should just be stated. I -- again, that would be another category of types of errors that could be captured. That was my reading anyway of the comment, was it sort of implied nobody had done it.

MR. CALHOUN: Yes, again, I am just going to have to take these all back and look at them.

MR. HINNEFELD: I mean, it's good

that there's a lot of information in here and that you can look at.

MEMBER RICHARDSON: I am still, I am just, I am still thinking about trying to synthesize it, because it's making me imagine that there's actually a third category.

There's the concordance between he two reconstructors, and then there was an audit which was done which suggested, well in fact, maybe nobody, nobody did what could have, what should have been done according to the document.

MEMBER MUNN: I can't address what TBD-6000 says, right?

DR. ULSH: So both did it correct, this is one category. Another category is one side or the other did it correct, and the other didn't. And what you are saying is a third category is we all screwed up.

MEMBER RICHARDSON: That's what I think --

DR. ULSH: In which case you would

wonder why, maybe the guidance document --

MEMBER RICHARDSON: I get it, right.

DR. ULSH: and they're all just boneheads.

MEMBER RICHARDSON: But I mean, that's because you've got multiple eyes looking at the same one now, and so I can imagine that, but that is another category of thing, it's the last person who does the judgment.

DR. ULSH: That's probably the worst situation because it means there really is something that's not clear that everybody is missing.

MEMBER RICHARDSON: Right.

MR. HINNEFELD: Yes, and the way the reviewer wrote the finding makes you wonder if even TBD-6000 is very clear about this situation.

MEMBER RICHARDSON: Right.

CHAIRMAN GRIFFON: Any others,

Doug?

MR. FARVER: I'll try and close it up here. I think you get the gist of it, just by looking through, you can identify the differences and kind of say, well, I wonder why those are different.

And even if you just look at their comments, I don't know, we can look at the page 18, let's look at the unmonitored dose, B.3.1. It came up a little bit different unmonitored.

CHAIRMAN GRIFFON: What was it, B.3.1?

MR. FARVER: Yes. And there just some confusion about the hours and one person looked at it one way, one person looked at it another.

MR. HINNEFELD: Yes, that's one I know that there was some issue with that tool that, maybe, we'll have to take a look at.

MR. FARVER: And I mention that because we have seen that before in the

unmonitored dose with the hours and so I'm familiar with that problem.

MEMBER RICHARDSON: Yes, this is a great one for what a blind review should catch, right?

MR. FARVER: Yes.

MEMBER RICHARDSON: Suggesting that somebody independently couldn't replicate something which you think is embedded in the equation there, in their tool.

MR. FARVER: When you're pulling things from tables, and --

CHAIRMAN GRIFFON: It's not even used in that table, I think it's in the workbook, right?

MEMBER RICHARDSON: I think it's in their --

MR. FARVER: Oh, it's in the workbook but it's in the document table.

MEMBER RICHARDSON: Right.

MR. FARVER: I mean that's how we usually go in and look at the table and see if

it matches and try and get it to match the number in there.

MEMBER RICHARDSON: But am reading what this person says, that they couldn't recover that value independently because there is some question about an error in the equation used to adjust the hours worked.

So it's -- maybe the table is correct, but whatever ORAU is using as a tool.

MR. FARVER: Could be. And I'll bring that up -- because I get after our own people when it's a value from the table, and they can't put it down in our document and make it match a NIOSH number.

Because something is wrong. You're just pulling it from the table. Somebody is wrong.

MR. STIVER: Yes, this was just an adjustment, to go from 8,760 down to 2,600 hours so it should have been pretty straightforward.

MEMBER RICHARDSON: You mean it's

not a very complicated equation?

MR. STIVER: Right.

MR. FARVER: I guess that's enough comments. You guys kind of get the idea.

Page 21, another unmonitored dose. Oh that's a prorated dose I'm sorry.

DR. ULSH: So I guess going forward --

MR. FARVER: No, I just suggested that -- I was kind of looking at some of these differences and saying you know, you wonder why they're different, two people looked at things differently.

DR. ULSH: Yes, the message that I got from all of this discussion so far is that number one, we need to more clearly define why there were differences and whether or not an error was made, and I think a third part of that, I don't know if we have explicitly said it, is if there was an error made, what corrective actions have we taken as a result.

So going forward, you are going to

see another report on the next set of blind DRs. That's one item. My question is, what about this report?

MR. CALHOUN: There will be close-out report for that one, and the observations and recommendations from the group.

MR. HINNEFELD: Meaning the corrective actions --

MR. CALHOUN: Yes when they are completed.

MR. HINNEFELD: and the actions that are recommended --

MR. CALHOUN: Yes. Officially we don't need to do it for findings but I'll do it for -- if we only need to do it for findings and concerns, but we'll do it for observations and recommendations for improvement on this one.

MR. HINNEFELD: But part of what Doug was saying is that in order to make, you know, get the value out of this, we really

need to investigate these differences and make a judgment about a preferred method to the extent that there is some -- some of that -- when you are talking about 1.24 times 1.0 and they are both overestimates, I don't know that there's -- we're going to come up with a confirmed method for that. I have to be honest with you.

But some of these, it seems like there is a preferred method, that should be done, and they should be done the same way, even though they are both overestimates and they are not -- it doesn't affect the case, that there should be a preferred method.

MR. FARVER: I have never seen an overestimate where they have chosen the maximum of the distribution. I have seen the ones where they choose one, you know, if it's below one.

DR. ULSH: Well I don't know the particulars of that case but it does go back to the principle that you said, that if it's

just as easy to pick one number versus another, then we should pick the --

MR. HINNEFELD: Well, there should probably be a preferred method.

MR. FARVER: From what I've seen you pick one, or you just -- the DCF is greater than one, then you use the DCF.

That's all. We don't have to beat this to death any further.

CHAIRMAN GRIFFON: Right, and I am trying to think, I mean, maybe once we have this other discussion on the Quality Assurance Program at ORAU, this might gel better.

But I mean you said if we find -- if we find errors in this, the other thing is to correct that, what are we doing, you know? And, but you know, from my other line of work right now, I guess I would caution, and I think, Stu, you said this at a couple of meetings, caution that you're -- we're not just -- you know, you might want to look at this systematically, like fixing one thing at

a time is not what you are setting this program up to do.

You may look at the more root cause of why, you know, why did this happen so yes, in some cases, I think you are right that certain procedures in identifying that, you know, what value to use as the MBA or whatever, I mean, that, that's pretty clear, but there might be others that are -- it's not just fixing the immediate problem but it's looking beyond, like why did that -- why is that happening? Why is that getting through -- yes.

DR. ULSH: To give a totally made-up example, if we discovered that there's a problem with the DCF and the Idaho tool, all right, we fix that.

If we see the same kind of a problem in the Hanford tool and the Savannah River tool, maybe something's going on and we need to figure out why this is happening.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: Right. You're talking about you know, you --

CHAIRMAN GRIFFON: Or even the 8,760 hours, I mean you might want to step one further back and say let's check our other tools to make sure that they are doing this calculation correctly, you know, that we --

MR. STIVER: Well I wish this would be captured in the V&V with the tool itself.

CHAIRMAN GRIFFON: It should be yes, right, right, right. Anyway you -- yes, I think you get the idea. Anything else to add before we -- I think it's a -- I am worried about the production but you need to hire some more --

MR. HINNEFELD: I am quite worried about the resource demand. And while so far federal budgets -- our federal budget is okay, every year I get called about when can you start turning some of this money back. I get that call every year. In fact I just got it

for 2015. Do you really need all that money? We still think you should finish the backlog. So I just got that call. But yes, it's a worry.

MR. KATZ: We can circle back on this question after we get the other resources used to -- that we'll need to talk about today.

CHAIRMAN GRIFFON: Right. Well why don't we -- let's take a break.

MEMBER MUNN: Let's do.

CHAIRMAN GRIFFON: For early lunch? No. Let's take like 10 minutes or so and then we'll work through to lunch, right?

(Whereupon, the above-entitled matter went off the record at 10:44 a.m. and resumed at 11:03 a.m.)

MR. KATZ: We are back from a short break. Mark.

CHAIRMAN GRIFFON: Okay. The next couple of items on the agenda are -- looks like DCAS reports really. The question of DR

efficiency process and you've looked at this and whether it was going to save any time, what the impact of doing all I guess best estimates as opposed to -- I think that was the original question.

MR. HINNEFELD: Why don't you just go ahead while I look for this?

MR. CALHOUN: Okay, I just didn't know if it wasn't the right place, I didn't think, but we asked about the 45 to 52 percent in the last five years and we started tracking that. It's been 1.9 percent of the DRs.

CHAIRMAN GRIFFON: All right.

MEMBER MUNN: That's pretty close to two.

MR. CALHOUN: It's very close to two, it is, in my mind.

MEMBER MUNN: I'll have to think about it, though.

MEMBER RICHARDSON: You said that's 45 to 52 percent?

MR. CALHOUN: Correct. So if

there's --

MEMBER RICHARDSON: So are you talking about it's two percent within that bounds, and at 10 percent over the range, which is -- which is a 10 percent range, 40 to 49, versus 45 to 52 which is a seven percent span, which only owns two percent of the mass. It's a weird distribution.

MR. CALHOUN: I don't know what that means.

MEMBER RICHARDSON: I certainly don't, because when they cross that threshold, they get scrutinized and bounced back out of that threshold. Right?

I mean that must -- something is driving observation data there.

(Simultaneous speakers.)

MR. CALHOUN: -- overestimate one underestimate portion of the DR that falls --

CHAIRMAN GRIFFON: That is the process, yes.

MR. STIVER: If you looked at the

adjacent three or four percent which makes you --

MEMBER RICHARDSON: You do, because the 45 to 49 holds 10 percent of the observations and yet you've got only two percent.

MR. STIVER: Forty to 49.

CHAIRMAN GRIFFON: Forty to 49. All right Stu, we gave you time to look at your update and --

MR. HINNEFELD: Yes, the history on this was that we have an analysis from our contract about the impact of doing away with this and it included information that we thought they might consider confidential.

And so we just send it back to them and say hey, can you give us a version of this that you are okay going public, you know being public, because once it's hear, it's essentially public?

And they made some -- they modified it and they sent it to me with so

many caveats on it that I said, well, what good is this, you know, you said it shouldn't be shared, you know, this is just for our internal conversation and it shouldn't be shared and I said well, hey, the idea for you to change it was to share it. So can you kind of lighten up on your message?

Now, I think she's done that but I want to make sure I get the right version here, and I can share her most recent one, if -- when I'm confident I have it. I hate to make the judgment sitting here today but I'll send it to everybody after this.

I think we talked about this a little bit verbally at the last meeting, is that there is a very large cost associated with doing away with the best estimates -- with doing away with the overestimates.

Because right now to the majority of the claims are an overestimate rather than an underestimate of some fashion. To the extent that for a given manpower loading which

would -- this is actually a little dated because we don't have this much manpower working on dose reconstructions right now. But the time they did this, they could produce about 76 dose reconstructions a week and only about 10 percent of those were best estimates.

And if we had gone to 100 percent best estimates, production would have been half, about 35 -- about 35 a week. So you would have to double -- in order to maintain the same production level, you would kind of roughly double the price, for dose reconstruction if you didn't do any best estimate.

So we just said well it's not something we want to pursue right now, and then there was some additional analysis of partial -- of what, some things we could do. And I'm going to have to study this a little bit I think to make much more sense of than I said last time. I think I talked about it a little bit at the last meeting.

There's not a -- nothing that really seems to get us very much in terms of really reducing the number of -- of really reducing the number of overestimates, is a low cost item.

You know, if -- you know, even skin cancers, for instance, skin cancers are a big chunk of claims, and so it's not really a low cost item to do all --

CHAIRMAN GRIFFON: Yes, that's the one we did talk about because of the chances of secondary cancers. Yes.

MR. HINNEFELD: But even that's a pretty significant cause. And we've talked -- I talked earlier today a little bit about the ways we are behind for the Subcommittee, and so taking on, so I really hate to take on a more expensive, existing process, you know, to make the existing process for dose reconstruction more expensive, which is time really, I mean, just people's time, in light of the fact that we have all this other work

that we really need to focus on to catch up.

So as much as I hate to have to explain to people why their rework went down, you know, when they got an additional cancer, because I had a lot of those conversations, you know, as much as I hate to do that, I don't see a way out of it right now that we can afford. You know, that's kind of where we are.

I apologize, I didn't get this ready, I've had kind of a busy week, and, and I just failed to pick it up off the agenda when the agenda came out, I said oh it's just something I think I can get in.

I'm pretty sure I have that, that revised non-business-sensitive analysis from ORAU that I will share. And I'll just go ahead and send all of it to everybody here.

But it's -- the original analysis kind of talked about how many hours it takes to do a dose reconstruction, things like that that ORAU feels may be a little business

sensitive because realistically, all these contracts are competitive, and you know, and in fact we are only about a year away from beginning that process again.

MEMBER RICHARDSON: So, you know, one of the things that struck me in the past is not so much the logic of doing the overestimate as the communication issue of doing an overestimate, and I certainly appreciate the time -- the kind of the time demands that make it not feasible to do best estimates for everybody, and I took from that report raising the issue that it was kind of the -- it was an issue of kind of the perception of the program and the kind of -- the feelings that people had when their dose -- their Probability of Causation was changing and the compensation decisions seemed to be backing in the wrong direction.

Some of it seems to me like it's a secondary product of kind of a false level of precision in which certain numbers are

communicated to claimants.

Like, when you say, well, we calculated your Probability of Causation and our best estimate, or you know, or our estimate is 43 percent.

You know, and then it's going to get back and it's going to be -- and when there's -- when that's not in that sense the best estimate, because I'm wondering if there's a way of pulling off from that.

I mean, I just -- yes.

MR. HINNEFELD: Well, that's interesting.

CHAIRMAN GRIFFON: If the PoC is less -- yes.

MEMBER RICHARDSON: It's in this range, it's in the bottom quartile. You know, I don't know, if that -- it's useful to people or not, but I think one of the things they're seeing is that number is shifting.

MR. CALHOUN: They don't see the actual PoC. They just see the dose.

MR. HINNEFELD: Labor tells them.

MR. CALHOUN: And every time we have an overestimate, there is a sentence in the dose reconstruction that says, "This is an overestimate and any changes could result in a lower dose."

CHAIRMAN GRIFFON: That was actually a result of our, our work.

MR. HINNEFELD: I think that came out --

MEMBER RICHARDSON: They have been in place for a long, long time. They get a PoC thought, don't they?

MR. CALHOUN: Not from us. No.

CHAIRMAN GRIFFON: They see the PoC --

MR. CALHOUN: They get it from Labor.

(Simultaneous speakers.)

MR. CALHOUN: -- that it's over or under 50 percent. You know, it will say that is the internal dose alone resulted in a

Probability of Causation greater than 50 percent. We won't say it 's 55. And -- or we'll say even under these assumptions, the dose for the -- the dose will not reach a Probability of Causation of 50 percent or greater, and that's the only thing they get from us.

MR. FARVER: And that's in the DR report.

MR. CALHOUN: Yes.

CHAIRMAN GRIFFON: So they are getting it from one agency or another. But -- and they do get the specific doses, even though we -- even though you qualify, correct?

And that's why they have come before the Board several times saying you know, I've got, you know, here I was 20 rem and now I've got another cancer, and now it's 10 rem, or you know, how has this happened. The next time I get a cancer is it going to be two rem? You know, I mean, they -- it creates that mistrust I think so yes.

MEMBER MUNN: Several is a very conservative number.

MR. HINNEFELD: Yes.

MEMBER MUNN: It's been more than several. But the language has been changed on two or three different occasions, to try to be more and more clear and to be as specific as possible.

MR. HINNEFELD: Yes, I struggle with this because I would dearly love to have fewer of those conversations, or have some other way, you know, having people not have to face that, gee, I was 40 and now I'm -- got another cancer, I'm 25, what are you guys doing to me here? I'm 30, or you know, you are changing the rules so you don't pay me.

But I really struggle with how well you communicate this idea. I mean, you know, what comes to mind, I'm just thinking, I don't know if you knew this or not, you know, rather than give them their dose numbers, then you know, your dose would be less than this

number.

I mean, but that's going to be buried, I mean that's going to occur as the dose reconstruction is now, as it comes designed, it's going to occur at the various places where you have an overestimating dose. You get to the extra dose and you are saying our dose reconstruction indicates that the dose would be less than this number as opposed to the number.

You know, but I don't think that is fixing it. I don't know --

MR. CALHOUN: No. I mean --

(Simultaneous speakers.)

MR. CALHOUN: There's a space in the top and the bottom to give the overall dose.

MR. HINNEFELD: Yes.

MR. CALHOUN: For cancer. And you could say, and I know Chris used to put into there, "We determined that your dose is no greater than" for non-comp cases.

MR. FARVER: Is this something that the Worker Outreach Group could help out with? Ask the workers how they -- how best is it to present this to you. Say this is what could happen. You know, we -- this is the process and if it gets reworked, these things can happen. How's it best to explain it to you? You know, what --

DR. ULSH: Well you know, I was thinking of not necessarily Worker Outreach Group, but and it's always dangerous to think on the fly, I get in trouble a lot. In situations where -- okay, the problem is that we have got this perception about what happens when my dose goes down, and I wonder if, in those situations, if we could develop a communications piece that goes into more detail and says look, this is the situation, let's walk you through an example case, here's why you're seeing what you're seeing, that we insert in with the dose reconstruction when we mail it out to them the second time around or

whatever. That would be cheaper than eliminating best estimate cases.

MR. CALHOUN: Or even just a full paragraph --

MR. FARVER: That's kind of what I was getting at, you know, you work through the workers and find out what they -- what they would want to see or what would help them understand better, and I just thought the outreach group, that might be something for them to work on.

MR. KATZ: I am not so sure the Subcommittee -- the Work Group is really the place to have expertise on this. This is a communication issue and this is something you would do, you would develop some -- with communications people you would develop some different approaches and you would test them out on a focus group of people you determined and that's how you would figure out what works best.

I mean, that's as good as it gets

I think for this kind of behavioral issue -- communication issue.

DR. ULSH: I think that would be a more plausible and economical way of dealing with it.

MR. KATZ: But that -- and that would be sort of a very robust, professional approach to it.

CHAIRMAN GRIFFON: I mean, you know, there's a lot of -- it's probably outside of what we're doing here, I agree. But there might be other -- because it's part of the -- unfortunately it hits at questioning the credibility of NIOSH, and I think even outreach, NIOSH doing outreach, for some of the larger sites, you might even want to tie in with the unions, as long as they are supporting your position, you know make sure they understand -- because when you go to these things, I mean I can tell you, if you do a town hall meeting or a meeting in a local union, and try to explain this, you have got

the best intentions and but you are going to get some people saying oh yes, oh so now you are trying to explain away this?

You know, and I mean -- well it's big government telling them how -- whereas if you have some local people that they trust more, it -- the message is more credible, you know?

I mean that's a lot of what we do with the medical surveillance program was that -- this is getting off track a little bit -- but with the Department of Energy, they didn't have a lot of trust for the Department of Energy but they had more trust for these more neutral programs, university-based, union-based relationships.

And we went in with DOE which was initially awkward but you know, you sort of -- it was building the trust thing. So that might be another way but it's all about the -- that's part of it. I mean I was hoping, I'd still be interested in that report, Stu, the -

- you know I hear what you're saying but it seems like a big fraction of these were -- could be the skin cancer type things, but even that's going to be a large cost impact.

MR. HINNEFELD: I apologize, I'm pretty sure I have this. I got the, I got the, quote, sanitized analysis but with the caveat, and I think I got that -- I certainly got an apology when I raised the point, because hey the whole point was to make them public.

I got an apology but I don't know if I actually got a version that they had gotten an okay from you.

MR. CALHOUN: You know, we actually cover this in the workshops we do. But I think it could be improved because I do most of the workshops and dose reconstructions when it comes to overestimate and underestimate, and you know, we go all over and dose these things, and we've got union reps there and we've got DOL reps there and

we've got worker advocates there to help explain the process to people.

And maybe just beefing up, you know, the portion that talks about, in the overestimate section, what if my dose reconstruction goes down, just even a few slides, I think that would certainly help, because those people are there to help educate the people that come to them for help on this program, and I think that would be at least one -- it would be easy to do.

MR. HINNEFELD: Good, this is your action.

MEMBER RICHARDSON: So the other thing it relates to is how overestimates are derived right now. So, like this example of a triangular distribution where an overestimate, if the assumption for the overestimate was that you took the rightmost tail of the triangle as the value and did the reconstruction, then when you went and redid that with a best estimate approach, the dose

is going to shift much more dramatically than if you had taken a point of the mass which was more central.

So to the extent that there is clarification on how overestimates are done, which is in some sense still being overestimating but not being wildly overestimating, there should be less shifting of the dose upon -- I think, you know it's --

MR. KATZ: That was a point of conversation actually. That was exactly a point of conversation, about how do we at least moderate the overestimation so that it's not so extreme.

DR. MAURO: This is John. You know one of the things that came out of the skin conversation the last time we had, and I was thinking a little bit more about it, I notice when I do a dose reconstruction, most of my time is on the internal. That's the tough one. External, it seems to me a realistic estimate of external, the difference

between let's say doing an expedited analysis, a maximizing, and actually trying to do the number itself, I don't know if there's that much of a difference in the cost for that side, and that has a direct bearing, and really dominates the skin and the prostate, and I think between skin and prostate we are talking about perhaps 30 percent of all the cancers that are -- you have all the numbers.

I mean that's -- skin and prostate are the ones that by far dominate the cancers that people get, if you add them up. And I think those -- I think when you speak to ORAU, you may want to make a distinction, is there that much of a difference between overestimate and realistic for external exposures?

MR. HINNEFELD: I don't know but I know if Scott would talk or anything, I think if you really do a best estimate on the external, you Monte Carlo the dose in the DCF, don't you?

DR. MAURO: Yes.

MR. HINNEFELD: So, I mean, you've got a Monte Carlo then built in just to get each external dose number.

DR. MAURO: Okay, no, if that's their experience then that's that. I know from my experience, I found the externals a lot easier.

MR. HINNEFELD: Well, I won't deny that externals are a lot easier. I just don't think that the efficiency -- it's not a fact that efficiency processes in external dose don't save you much time, because I think they do.

MR. CALHOUN: Yes, I think you get the biggest bang for you buck with externals when it comes to like, assuming missed dosed badge change-out frequencies, rather than using these and the actual number zeroes in their records, or with X-rays, instead of assuming a frequency, you just go with a number of records in their file.

That's my thought.

DR. MAURO: Okay, it was just a thought.

CHAIRMAN GRIFFON: Well, so Stu, you can have this sort of version next time, right, this report?

MR. HINNEFELD: Oh, I'll email it.

CHAIRMAN GRIFFON: Okay. But it seems like, I mean, the preliminary --

MR. HINNEFELD: There's not a lot to gain there.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: I mean we have taken some preliminary steps with some DOE sites that don't normally send us medical history when we send exposure requests, but we can get it.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: So why don't you just send it to start with so we've got the record, because that, you know, just do a best estimate on it, just count the X-rays because it's a little extra and that doesn't seem to

be a lot extra.

CHAIRMAN GRIFFON: I guess we -- yes. It might be most interesting for our discussion, the middle stuff, you know, that -- not whether you can or cannot do this, but are there certain --

MR. HINNEFELD: And there are some things that --

CHAIRMAN GRIFFON: Well we might be able to -- yes --

MR. HINNEFELD: There are certain things that fall into that category --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: That maybe cost two, three, a couple of million dollars or maybe out of the year, a couple of million out of the year, and that's --

CHAIRMAN GRIFFON: So then it's the cost benefit you know, and if you analyze that a little bit it would be useful, I think to discuss that further --

MR. HINNEFELD: Yes, and some

stuff, but again, I'm behind. You know, it's not like I'm staying even. I'm behind.

CHAIRMAN GRIFFON: Yes, and they're taking money away.

MR. HINNEFELD: Yes, I know, you can call them about 2015 when you call them about 2014. I don't know how it's going to go in 2014. They finished them off last year, 2013, I think.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: The President's budget request went in okay.

CHAIRMAN GRIFFON: Was there anything more on that item then? I'm not sure we can --

MR. HINNEFELD: I don't really have much more to hand there I don't think.

CHAIRMAN GRIFFON: How about the DCAS follow-up on ORAU quality management system?

MR. KATZ: We talked about that.

CHAIRMAN GRIFFON: We just kind of

talked about that.

MR. KATZ: We did --

CHAIRMAN GRIFFON: I thought you didn't have it on the agenda, yes, so you kind of did --

MR. KATZ: I did, yes.

CHAIRMAN GRIFFON: So the action there is that for the next meeting Stu, do you think that we can -- we'll talk in between to figure out exactly what we'd like to see. But for the next meeting I'd like to plan some sort of -- and if you need some ORAU folks to be in attendance or whatever.

Alright, SC&A – oh, okay. The evaluation of sets 10 through 13. This was looking for the sort of trends or bins or like type of findings, right?

MR. STIVER: At the last meeting, remember, there was concern about this ever-widening gap between our production rate what's actually being reviewed -- but I believe that we are talking about sets 7 or 8.

It sparked this discussion about how best we could kind of expedite this intervening set of about four, I believe it was sets 10 through 13, and there was already discussion about how best to do that, and the conclusion was that we would bin types of findings by categories.

And I believe we looked at overarching scientific issues as one kind of broad category with three sub-categories within that.

And it really came down to looking at worker placement, basically the spatial and temporal placement of workers in their radiation environment.

There was development of the exposure scenario within the placement basically while potential sources and modes of exposure accounted for.

And within that really are sub-headings to that or related to them, what are the appropriate models for external and

internal dose used in the analysis.

And then we added two other categories to this. One was quality issues basically, the things that we have been talking about today, were the TBDs properly applied, were mistakes made on the part of the reconstructor, were there shortcomings identified in the guidance documents themselves.

And then the final category was basically those that really didn't fit any of those other five categories, which would include replicates, findings that have already been resolved in previous discussions.

And so Doug went through and put all this together into a report. We looked at I believe there were about 275 findings and 116 cases within those four sets.

And they were binned out by those categories, and I believe what was about four percent came in as a worker placement issue, about 10 percent were scenario development and

notably, what was about 28 percent were related to the selection of the external exposure models, a small fraction -- 28 percent.

This is in the report. I believe it's the last table here. It's in the executive summary and also on page 15, there's this summary conclusion here.

But the executive summary lays it out, and so basically, yes, 27 percent were external, 14 percent were the internal models, 12 percent were related to quality issues and 33 percent actually came into this category of none of the above.

And so we have looked at different ways to deal with the -- how best to implement the process and the meetings, but before we get into that, I'd like Doug, who was the author of the report, to maybe give you a kind of a more detailed description of how the categories were selected and the various findings.

MR. FARVER: Do you really want to know how the categories were selected?

MEMBER MUNN: Sure.

MR. FARVER: I went back and read the transcripts for the last meeting, because during the meeting, I'm sitting here thinking I haven't a clue how I'm going to do this. I went back and read the transcripts, and from the transcripts, I determined the categories, the work location.

We talked about exposure scenario. We talked about the dose-modeling assumptions where you break it down into internal and external, and then I threw in quality because we talk about that a lot, and just so everything tallies up, I have the other criteria.

So it was not an elaborate process determining the categories. Now, when you try to group these into the categories, that's a little bit more difficult. It's always a little bit subjective and I'd say in all

cases, I had to go back at least to our report that we wrote, and in many cases I went back to the DR report for the actual files, the DR files, for each finding.

And just because -- you can't always, just by what's written down in the finding, you can't tell what that means. So there really was an elaborate process, once you get the criteria established.

Then I tried to go through and give examples, you know, maybe for an external dose and an internal dose example, two examples for each type of -- each category of findings.

I don't know if you want me to go into details about those, or just let the folks read those.

MR. STIVER: You may as well just kind of go through and give them an overview.

MR. FARVER: Okay, so the first category is work location. And if we go to -- we can look at page 7, we're onto page 7,

where I give an example.

The work location -- the potential radiological sources were not documented. This is kind of a hairy case because this talks about Oak Ridge Institute for Nuclear Studies and Oak Ridge Institute for Science and there's an odd one in there.

Oh, nuclear studies, which was not around very long, I don't believe. And you know, the management changes and the name changes, ORAU and ORISE.

And you know, to come back to our finding, we talk about well, they used doses from Y-12 and X-10, and those might not have been appropriate, might not have been the proper work location for this person, having worked at the institute for nuclear studies, worked on a facility hospital doing cancer studies.

So that's kind of what brought about that finding. So that raises a little question about is there -- are those the

appropriate doses to use. I don't know.

Example two, external dose from penetrating radiation is underestimated. And this is something we talked about earlier where you choose plant floor low, or what other value you choose from the table in TBD-6000.

The person's position was a motor inspector and then I believe it goes on to, there's electrician and crane operator. So there's some concern, is plant floor low the proper category or should it be plant floor high?

These are just two examples where work location comes into play. Now I guess you could consider that second example exposure scenario. I don't know. But I kind of grouped it into work location.

Move on to exposure scenario, and on page 9 I give two more examples. We talk about the CATI information, identifying uranium fires that could affect skin doses.

And this goes back to the skin-dose issue, because I mean there's some particles on the skin as a result of the fires. Me, I believe this would be an exposure scenario for external dose.

Number two is a failure to assign external neutron dose and this almost falls into is it the right work location, but it kind of falls on the edge of whether it's a work location issue or a -- the work location is what determines the neutron dose.

And that's a Pinellas case, I guess there's some issues about neutron doses in Pinellas. We can go on with you external dose and a few more examples of -- excuse me -- issues.

Incorrect accounting of medical doses. They may not have accounted for all of the exams that were listed in the dosimetry records.

And I pretty much just cut-and-pasted these findings from our reports

and so they may not be extremely detailed, there should be more details in the report.

CHAIRMAN GRIFFON: I am looking at your -- just going down your listing in the back, the appendix, well, the findings and the categories.

Category F interested me the most. I just glanced through and I mean, in my quick review, it seems like a lot of those had the word medical in, or the word CATI, and several other ones I thought fit into internal dose, but I am sure you the judge.

(Simultaneous speakers.)

MR. FARVER: -- for the AWE PFG medical dose, you know, we have talked about that before and I believe that's been resolved.

CHAIRMAN GRIFFON: Well that was my question. How --

MR. FARVER: This is one of those findings that's redundant, it's been resolved.

CHAIRMAN GRIFFON: Okay. Because

some of these, 33 percent, I mean do you know many in that other category are resolved versus just didn't fit into the bins?

MR. FARVER: No, I got all, and there's also, in that group, ones that are redundant, ones that had been identified and put into a bin, but I didn't repeat them and they just keep crawling in the bin.

I mean it's been identified once, and we're just going to throw all the others into F because if you identify it once and correct it, then I can deal with it again.

MR. STIVER: This is John. So if I could jump in for just a second. One of the reasons we went with this particular process was, in the interest of making these meetings a bit more efficient.

And while we haven't changed any of the aspects of the actual dose reconstructions and the findings and how we go about doing that, we felt that it might be more efficient for the use of the

Subcommittee's time to, instead of going through and plodding through each individual case, one at a time, for each of the different sets, and doing that, we have -- at least I have noticed during the time that I have been involved with this process -- that there's a lot of revisiting of old issues, of things that have been talked about maybe a meeting or two back and which -- our memories aren't quite up to speed yet so we end up talking about a lot of these things over again, some of which have already been resolved in different venues.

And so we're thinking maybe the best -- or better approach would be to look at these by -- these bins, these categories of like types of findings.

And so, for, say, sets 10 through 13, we would just dedicate a meeting to say, looking at say, quality issues across all these various reconstructions.

Now we would probably have to have

some adjustments to the matrices and things as to how that was handled, the mechanics of it. But then we would have the advantage of, we could focus in on a particular topic and granted the first two or three might take as long as it would be in the conventional approach, but after that I think that it would probably go quite a bit faster. The focus would be on one particular subject, there would be a lot of similar types of issues, different aspects of the same type of problem coming up.

So we thought that might be a better use of the Board's time to help get up to speed to where we are kind of looking at the same sets.

And also, given the fact that, you know, the budgetary issues at DCAS are such that it doesn't appear to me that there's going to be more funding available for more meetings and more resources dedicated to this type of thing while the other activities are

going on.

So I just want to put that out there as an idea for discussion that maybe that would be a --

CHAIRMAN GRIFFON: Yes, and we had talked a little bit and I mean the question I would have is just, and it's hard to do this in theoretical terms, but would we actually gain these efficiencies? I think if, say we are looking at sets 10 through 13, or whatever, was it -- we'll say 10 through 13 -- and if -- I would totally agree with this approach if NIOSH has already done responses to sets 10 through 13, and it was just the Subcommittee that was holding up, that I'd say okay let's just not, let's do it like you are saying.

My question is, and this is sort of directed to you guys, you know, would this process gain you efficiencies because if we have -- if we decide to take this work location one, you know we said okay, we've

found, in sets 10 through 13, there's you know, 12 cases that involve that, well, then NIOSH still has to go back and review those 12 cases and their specific findings.

Then if we do the next bin, you are doing 13 different cases maybe, and then we might back to other findings and those original 12 cases at some point -- I'm not sure if the gains, you know, I'm not sure if --

MR. HINNEFELD: Well from my standpoint there is a certain disadvantage to do it by group because you are going to go back and look at the same, the same case, multiple times.

(Simultaneous speakers.)

MR. HINNEFELD: I think there's an opportunity here, depending on how comfortable the Subcommittee feels, with SC&A's sorting into group F of the result, duplicate, you know, that category, in the 37 percent, to in our responses, you know, mark on the matrices

which ones are F's and just say no response Category F, and just not worry about those particular findings.

CHAIRMAN GRIFFON: But that's why I was asking what Category F meant, because I think it's more than just the already been resolved, right?

MR. FARVER: It's others, some that I didn't feel fit into the other categories.

MR. HINNEFELD: Okay so it's going to be other things.

MR. STIVER: So there could be some other things that -- so that's something that we could probably work on.

CHAIRMAN GRIFFON: But if that has already been resolved -- well explain to me the duplicate. The only concern I have about thee duplicates is you get into a situation where, did it affect the case?

MR. FARVER: Typically it would be -- remember we talked about the Hanford

fission products?

CHAIRMAN GRIFFON: Right.

MR. FARVER: And we went and we rattled that around for, I don't know, it seemed like years. And we finally got that resolved.

And I think, you know, in these groups, we still have identified issues, just like for Savannah River case when there was an issue with the workbook, and --

CHAIRMAN GRIFFON: But when you say resolved, what was the resolution?

MR. FARVER: Gosh what was that? It was OTIB-54 --

CHAIRMAN GRIFFON: Had to be -- yes, OTIB-54.

MR. FARVER: Yes.

CHAIRMAN GRIFFON: So it was the -- I guess what I'm getting at is just because it was resolved, if you have a case that's at 49 percent and you say, oh, we have already looked at that finding, if it's got a bunch of

findings and you've got that one, you know, in aggregate they can make a difference to that case. You know what I'm saying?

Instead of the overall issue, I think we agree on that, that the overall issue was dealt with, but part of our mission was also to look at the cases we review, would any likely have flipped, you know?

So in that situation --

MEMBER RICHARDSON: So this is -- you are saying that this was the case, the case heard -- the case is an old case, there's a finding, and the issue has been resolved subsequently by a revised policy document, a change in technical document.

MR. FARVER: Yes, now I don't know if that triggered a PER or anything.

MEMBER RICHARDSON: And you are raising a question about whether that reopens your evaluation for this particular claim?

CHAIRMAN GRIFFON: Right, and if it did a PER or whatever, yes. That may --

MR. KATZ: Then that would put it to bed.

CHAIRMAN GRIFFON: Right, that would put it to bed, right.

MR. KATZ: Because that would have been fixed.

CHAIRMAN GRIFFON: I'm just saying there might be a little more nuance to it. I don't disagree with the idea that we might -- we shouldn't have to go through them again, but --

MR. FARVER: Oh, I just think that if we go back and we say when we look at that issue in case, let's say, during set 11, we look at it, and we say oh well, you know, we have OTIB-54 and we have all this done and it's not going to affect this case.

CHAIRMAN GRIFFON: Well, that's what -- that's -- the last part is -- the point is what I'm questioning, you know?

MR. FARVER: Well I don't see how, how would it affect the case if it's -- what

they have been doing, they have been doing correctly?

CHAIRMAN GRIFFON: Well, that's what I don't know. If you're telling me that then yes, I agree with you. If one resolution was that SC&A agrees with NIOSH and everything was okay, then yes, all these are not going to affect the case.

If the resolution was that NIOSH changed their protocol and it resulted in some higher doses and maybe, you know, --

MR. FARVER: Yes, I don't believe I have -- I think this was the case in the --

CHAIRMAN GRIFFON: I'm just saying, not this specific example, but in general.

MR. STIVER: There is one example where it could have an effect in reducing the PoC and this is what the -- this issue of whether to use PFG exam -- presumption of PFG is greater in many cases, for several examples where that one comes up, and you know the PFG,

it gets a much higher dose.

So because the TBD has been changed to adjust that, basically, the big DOE facilities obviously you make an assumption but not for an AWE unless it was specifically called out in some document.

And so in a case like that, where it might have to be reworked, there could actually be a difference in PoC. It definitely has the potential for changes to --

(Simultaneous speakers.)

MR. FARVER: Well, I don't think they typically assign PFG, and you did do, and our finding was that maybe you should and then it would resolve it and maybe you shouldn't for AWE so no, we are not --

MR. STIVER: So it was never the opposite when you had done it when you should not have.

CHAIRMAN GRIFFON: I don't want to get lost too much on this issue. I think generally it's a good idea if we can, you

know, for most of that 33 percent maybe we can just say take no further action --

MR. FARVER: I would think if anything, for the issue that we have resolved, it would result in higher doses, should have generated a PER.

CHAIRMAN GRIFFON: Should have generated a PER, yes. We might just want to flag that as we are going through this process, but otherwise we didn't --

MR. FARVER: Well that was my thought when I included --

CHAIRMAN GRIFFON: We did administratively close those --

MR. FARVER: We want a result because if we fixed it, and if it changed the doses, it should have triggered a PER.

CHAIRMAN GRIFFON: That's fine, and if your numbers are close, I mean, even if it's not the full 32 percent, if it's 25 percent, you are still saving quite a bit of time, right.

So I agree generally but I think you need to maybe help us break out that -- or as we are doing it, we need more nuance in that last category.

MR. FARVER: And it's tough to tell because you really have to go back and look at the technical documents. It's not just a matter of reading the finding and saying well gee, I don't think this fits here, because then you have to dig deeper and say well, which bin would I put it in, does it really fit in one of those, or -- and then you just find out well, it doesn't really fit.

DR. MAURO: Mark, this is John. I understand the conversation and I agree that it would be difficult for NIOSH to go through by these groupings. You make a very good point there.

There's another perspective to this though, and it has to do with this -- you want may want to say it's part of the 10-year review concepts and improvements.

Remember, the groupings were done to say okay, let's separate those types of findings where judgment was needed. For example, placement of a person in a given area or location, it was at the highest tier.

Everything was sort of nested and that was your starting point, and was there a judgment made here where we placed a person in a place that perhaps that person should not have been placed?

And this is not something that is usually laid out in the Site Profile. It's something that the dose reconstructor, as best he can tell, is going to do that.

And where I'm leading up to is that perhaps the value of this may not so much be in expediting the issues resolution process, but it also, by grouping this way, it sort of is a pointer, okay, with respect to let's say placing people in locations, judgments were made and we had some percentage of our findings fell into that category, and

now it gets you what you might call a root cause analysis, and it may be helpful to the Subcommittee and to NIOSH to sort of take a look at all of the places where we felt there was a problem with placing people in a location, and it might help focus in on what we need to do by way of procedures or Site Profiles etcetera, that might help preclude that in the future.

The same thing goes with scenarios etcetera. So maybe the value here is not so -- unfortunately -- maybe the value is not so much in expediting the closeout issues, but it may lean more toward helping to focus in on improving, reducing the number of findings in the future.

CHAIRMAN GRIFFON: I agree with you John, but characterization is very helpful actually, so yes.

MEMBER RICHARDSON: So if you were to sort, like right now we moved through the cases in some sort of numerical sequence,

right? And we -- on -- you hit a case that has got some string of issues and then we hit a next record that's got a string of perhaps overlapping issues and perhaps not.

Is it possible to sort the cases now based on your -- we've got a sequence of cases all of which share, like, problems of class A, whatever it's going to be, whatever your grouping is.

But it's a series of cases which should all have only -- perhaps only suffered problems of types 1 and types 2, and we could deal with those at a meeting.

And we could see if we could move on to deal with those which --

MR. STIVER: We can kind of nest within each category -

MEMBER RICHARDSON: And part of what you are saying is maybe they only have these type F problems which we can -- we are just going to basically drop those out, but they might be there somewhere just suffering

type F and whatever quality control issues.

And we just want to deal with those, get them off the table, and then we'll be left with ones which are looking more similar. I mean your concern was that you don't want to deal with them cutting across the problems.

MR. HINNEFELD: To my mind, and maybe Scott could speak to this better than me, but to my mind, it's easier to deal with the case --

CHAIRMAN GRIFFON: Case at a time. I agree.

MR. HINNEFELD: And write the response for all the things, because you have to, you have to get your head into the game so as to examine what went on in this case.

And if you only do some and then come back to do it again, then that's several times you have to get this case familiar in your mind.

CHAIRMAN GRIFFON: Exactly. So if

you're familiar with the issue --

(Simultaneous speakers.)

MEMBER RICHARDSON: But now they've gone through the cases. They've put them in the bins. Can we sort them and deal with those cases which deal with one kind of set of problems, or maybe --

MR. HINNEFELD: Yes, if you look at a category and say there's two cases that had this one finding in this category, let's put those on the top, you know, we'll do them however you want.

CHAIRMAN GRIFFON: Yes, we can order them -- you can try to just do it --

MR. STIVER: I'm just going to like Stu has said, I mean it makes more sense if -- for this other approach to work we'd have to have -- they would have to have already gone through.

CHAIRMAN GRIFFON: Oh, yes.

MR. SIEBERT: And then we could hash them out that way.

CHAIRMAN GRIFFON: That's exactly what I thought.

MR. SIEBERT: But yes, maybe we'd be better to look at cases that have similar issues in common for a particular --

CHAIRMAN GRIFFON: And then you know what, we -- I mean, we have got a history of that. We have found that by default. Sometimes we have had in our listing, several Savannah River cases in a row, and we're like, well, just like last time, you know --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: And so if we try to proactively set it up that way, it may add some efficiency.

MR. KATZ: So then we would be choosing them in thematic sets but you would cover everything for these cases.

And I think that's a good sort of hybrid approach that, it's the best we can get out of the --

CHAIRMAN GRIFFON: Look at that,

we got consensus.

(Simultaneous speakers.)

CHAIRMAN GRIFFON: Well, before we stop on the categories though, I would offer, at least for your consideration, for the group's consideration, the one in there I understand these medical ones may, in that Category F may have been closed issues.

But there's several that say CATI and I know that's been a repeated theme in our findings, that the information in the CATI didn't seem to be considered an incident or a placement or a, you know --

MR. STIVER: That's a judgment issue.

CHAIRMAN GRIFFON: It's judgment, for sure, and it overlaps a little bit maybe with workplace sometimes. There's sometimes where the CATI mentioned that they had worked in a certain area and the records didn't seem to show that same location or whatever.

But you think, I mean, I'm just

glancing through and it seems like that's mentioned many times.

I don't know if that's breaking out as another theme or you know --

MR. FARVER: Yes, I can look closer at that other category and see if I can refine it any.

MEMBER MUNN: It was kind of included in A, wasn't it?

CHAIRMAN GRIFFON: Sometimes work location, I think it is, but sometimes it's incidents and -- but incidents, I don't think fall in the work location necessarily.

MR. FARVER: Let's assume we start with Category A, we are going to have 10 cases because there have been 10 findings I'm assuming from the one per case. So let's assume we have 10 cases to look at.

In those cases there may be also some F's, some of the other categories. Just because I don't know exactly which cases those 10 are, some of those F's might be something

we need to address that's redundant in other cases but didn't pop up first.

So the first thing I would do is look at those 10 cases and see what those findings are. And then see if there's any F's in there that really should be bumped into another category and addressed now instead of oh, this is redundant but it gets addressed later on in this other case.

CHAIRMAN GRIFFON: And before we started thinking about this reordering, another question for your side of the shop is have they started to work on 10 yet, because that may impact our --

DR. ULSH: Scott, do we -- have we started on 10th set?

MR. SIEBERT: We have initial responses that we can start getting over to you but that's it.

DR. ULSH: Okay, so not really.

CHAIRMAN GRIFFON: Okay. So reordering them wouldn't be a big issue?

MR. HINNEFELD: It doesn't sound like it's a big disruption, right?

CHAIRMAN GRIFFON: I hate to like, you know, if you're almost all through the 10th set, and then we -- okay. Okay. So reordering them would not be a --

MR. FARVER: The reason I'd take A first is because that's the smallest number, 10. Start small, see how it goes because 10 cases could take us quite a while.

MR. KATZ: This is -- just to add to this conversation, I'm just trying to think, stepping back even further and thinking about the disparity between where we are and where we want to be.

I mean if we wanted to get more or less caught up to, I mean, we're pretty much at sets 9 through 14, right, have been done by SC&A. There haven't really been much too much, this resolution here, I don't remember how much -- whether we've gotten much into 9.

MR. FARVER: I believe we got

quite a bit --

MR. KATZ: Okay. Okay. But 10 through 14, that's five sets right there, and 15 is getting -- is getting work through right now, so that'll be six sets.

I mean if we wanted to -- I think it would be good to aim for a date, say for example, December, end of the year, some point where we want it aimed to have got through all this mass, and then figure out what size sets and what periodicity would be, we need to meet to work through that.

And I think -- so in set building also, I think you want to think about not necessarily just, you know, whether it's -- combining sets to the extent that you keep the workload pretty even from meeting to meeting, but so it wouldn't necessarily be one set per meeting or whatever, or two sets, but if we think about this so we have, you know, now to December, what's that, nine months or whatever, if we are going to meet, whatever,

we are going to meet every six, what, eight weeks maybe, would be realistic, if we were going to try to do that, meet every eight weeks, how much do we need to get done from DCAS in responses, back to SC&A so that they can review those before a meeting.

If we can think about that then we can think about what resource impact that would have on you, what you would have to, how you -- how much you would have to turn the crank on ORAU to meet at this pace.

MR. HINNEFELD: Okay. So then that's essentially a planning exercise for us, do we -- are we going to go, it doesn't really matter, or are we not certain of our findings.

CHAIRMAN GRIFFON: Right. It's just more cases, right.

MR. HINNEFELD: So we just have to decide how fast we have to, would we have to work to get through 15 of -- set 15.

MR. KATZ: Well, I am throwing it out as a possible goal, get through set 15 by

the end of the year.

MR. HINNEFELD: By the end of December and how fast would we have to work to do this and have meetings every eight weeks.

DR. ULSH: It is not as clean as that because not all findings are equal.

MR. KATZ: No, I know but it's the best you can do, you can't -- there's no way to -- right, I mean, there's just no way to figure that out.

MR. STIVER: It could be a lot harder or this could go quite quickly.

MR. KATZ: Absolutely, no, I understand that.

MR. HINNEFELD: And the fact is, you know, I think the point here is that certain ones will be resolved upon our first response and a discussion, and others are going to be iterated out --

MR. KATZ: It would be randomly --

MR. HINNEFELD: It is extremely hopeful to be able to say that we will have

completed all these strung out, you know, the extended conversation by the end of December, that would be really hopeful.

MR. KATZ: Well, I mean I think once you look at your -- what the resource implications are, I mean, you may come back and say really, you should aim for March, or whatever.

But I think it would be good to actually come up with a concrete goal, and how frequently we need to meet, and what pace we are going to be delivering cases, you know, responses on cases back to SC&A, you know, and always thinking about giving SC&A at least, you know, a week and a half before meetings so that they can be prepared, when we meet, we can be prepared to resolve those cases.

CHAIRMAN GRIFFON: Okay, well, your resource and availability is --

(Simultaneous speakers.)

MR. KATZ: Well, that's what I'm saying.

MR. HINNEFELD: We would have a planning meeting with ORAU --

MR. FARVER: And of these 116 cases, there are probably, I don't know, maybe 110 that had findings. So there were several that didn't have any findings. So that's 110 cases just in these sets that you are going to have to look at.

CHAIRMAN GRIFFON: Ten through the 14th, right?

MR. FARVER: Then through the 13th.

CHAIRMAN GRIFFON: Sorry, yes.

MR. HINNEFELD: So that we'll have 10 through 13, that's four cases, so that's two-thirds of the total that we are talking about, but it may not be two-thirds of total cases. It might be then they might be selected in detail.

There's not that many available for us to make a -- what the best estimate you can make when you are planning work like this,

you know, it's the same thing you have to do no matter what your plan is, so we'll make the estimate --

CHAIRMAN GRIFFON: And Doug, you are through the 14th -

MR. FARVER: We are through the 14th of that set of that matrix ready to go, because we are ready to -- we'd love you Board Members to do one on one --

CHAIRMAN GRIFFON: A one on one is okay, we are still doing those. And the 15th set is --

MR. FARVER: It's half done.

MR. STIVER: We are more than halfway through, yes.

CHAIRMAN GRIFFON: Because what I was thinking is, for the 10th through 14th can you do some sort of master matrix and put them in these -- in the order you proposed to sort of work through them?

MR. FARVER: So 13th wasn't good enough for you?

CHAIRMAN GRIFFON: I'm adding one on because you're finished.

MR. FARVER: What I'll do is, when I do get to 14th set --

CHAIRMAN GRIFFON: You can use these categories.

MR. FARVER: We'll break down to these categories, and I'll --

CHAIRMAN GRIFFON: But then reorder them and send that matrix out to all of us --

MR. FARVER: I'll probably do this from here on out until someone says stop. You know, every time a matrix comes out from a set, it will be grouped into the normal group, plus put into categories like you see at the back of this document. So all I'm going to do is add another table on at the end of this.

MR. HINNEFELD: Now, if we are to make any progress eight weeks from today, despite you know, going through our planning exercise, we'll need to know what group of

things do you want us to work on, because we --

CHAIRMAN GRIFFON: Well, that's why I'm saying, really without --

MR. HINNEFELD: We haven't sent all our responses for 9. We should finish out our responses.

MR. KATZ: On the way, you're doing it now, right.

MR. HINNEFELD: So we can do that, and then beyond that, right now, we have a listing of, Category A is what we are going to start on --

MR. FARVER: If that's what you want to start on, I can get you those numbers real easy.

MR. HINNEFELD: I mean you have already given us Category A for 10 through 13 --

MR. STIVER: There may be some of 14 in one of those --

MR. FARVER: But I just don't have

that ready yet, so we can start on these 10.

MR. HINNEFELD: So our action as of today is to start working on Category A from 10 through 13, as well as anything --

MR. FARVER: I can't finish the 14th set until after we do the --

MR. HINNEFELD: That gives us the stuff to start working on now, if we already have some sort of progress going forward.

DR. ULSH: We've got enough to keep us busy for a few weeks.

MR. HINNEFELD: We've got plenty to keep us busy, I just want to make sure we're doing it in the right order.

MR. KATZ: Right, but so you will be -- it'll be good for you to do that pretty quickly, your putting them in the right baskets and figuring out how much you have in each basket too, so that there's enough in the basket for the next meeting.

CHAIRMAN GRIFFON: Well, let's think about this. If the 14th is still

waiting for the one on ones, why don't you use submit a 10th through 13th master matrix, reorder it by these bins --

MR. STIVER: Rather than wait on 14.

CHAIRMAN GRIFFON: Yes, rather than wait on 14.

MR. HINNEFELD: We can do that.

CHAIRMAN GRIFFON: No, I meant -- well they should reissue it, right?

MR. FARVER: You mean order it by which came in --

(Simultaneous speakers.)

MR. FARVER: Group A.

CHAIRMAN GRIFFON: Yes. Just sorting them, right, just sorting them. But reissue it just so we are all on the same, you know, we know what's going on, we aren't confused.

MR. FARVER: So will I send you a spreadsheet --

MR. HINNEFELD: Sure.

MR. FARVER: And you can do the sort?

MR. HINNEFELD: Sure.

CHAIRMAN GRIFFON: Well, somebody just send it around is all I'm saying.

MR. HINNEFELD: Okay, so what you're looking for now is the matrix of all the findings. We're going to take this report, 10 through 13, we're going to get the Category A findings and that will help us identify the case that was linked at the time.

So you know, all the findings in all those cases, not just the Category A -- all those findings --

(Simultaneous speakers.)

MR. HINNEFELD: You'll be able to find a matrix with all the findings for those cases that then that becomes essentially the 10 through 13 Category A set or something like that.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: So, and that

becomes the matrix to work on for that. So that will give us plenty to do, as well as trying to figure out if this is even -- if this is doable.

MR. KATZ: Right, and I think -- right, no, I know, I think at the next meeting you can report on the planning and what that told you in terms of what pace is feasible.

MR. HINNEFELD: If I had my way I would report to the --

MR. KATZ: Yes. But I think that will be good. I think that will be helpful.

DR. MAURO: Mark, one more suggestion, if it's acceptable by way of process.

CHAIRMAN GRIFFON: Unacceptable.

DR. MAURO: I know, the idea being I noticed that many times when we are going through the individual findings, there is a miscommunication or understanding of where our finding is, and as a result, I would say a significant percent, this represents

inadequate communication of our finding and the understanding and response, would it benefit the process? I don't think it would undermine the role of the Subcommittee if, as NIOSH is looking at one of our comments, and if there's another ambiguity or uncertainty, regarding what is it we are concerned about, would it be appropriate for the author of the -- who is doing the review to talk to our guy who made the comment, just to get clarification?

I know that there's been a lot of these kinds of -- when we filled the matrix out and we show up at the meeting, and we'll look at it and we'll see that there was a misunderstanding, and we don't actually resolve the problem I think at the meeting, and it has to go through another iteration, a little communication beforehand may really expedite this.

MR. HINNEFELD: We've kind of always been okay to do that.

MR. STIVER: We have done technical calls on Site Profile -

DR. MAURO: Yes, I wouldn't make it that formal. It would be just a matter, listen, I don't understand why you are concerned about this. Is this what you are concerned about? As opposed to making it a formal technical call.

If you feel that undermines the process, certainly forget about it. But I know that that would push things, that would move things very nicely.

MR. KATZ: I think that would be good. Mark?

CHAIRMAN GRIFFON: Yes, I think we're okay with that. You would be calling NIOSH not ORAU people, right?

DR. MAURO: Well, I would say the NIOSH folks would call us. In other words, we'd have a comment that's in the matrix.

CHAIRMAN GRIFFON: Right, right right.

DR. MAURO: All right, and they have the report of course, but if there's any confusion or concern regarding what our problem is, you now, I don't think -- I think we'd be --

CHAIRMAN GRIFFON: That's useful because still we are going to have the conversation on the record, and then you would say, well, we talked to each other and our original finding, there was a bit of a misunderstanding on this and --

DR. MAURO: Exactly. Exactly.

CHAIRMAN GRIFFON: Okay, so that would just expedite the public discussion.

DR. MAURO: Yes.

CHAIRMAN GRIFFON: That's fine. I don't think it undermines --

MR. KATZ: And I think you're right John, I think that a lot of those instances over the years, the misunderstandings that --

CHAIRMAN GRIFFON: I think it's

okay, and the discussion and the final resolution is still -- still is on the public record and so we're okay.

DR. ULSH: So you envision a process where -- in practice it would be Scott or one of his people working on a particular finding, he comes across one that he doesn't quite understand, and he lets me know, I send it to Doug, Doug funnels it to wherever it goes on SC&A's side -- so we can copy you in on those communications if you want --

CHAIRMAN GRIFFON: No.

MR. KATZ: You can do them by phone if you want, but I just envision --

MR. HINNEFELD: We just need to find the right two people to talk, the person on our side and the person on their side.

(Simultaneous speakers.)

CHAIRMAN GRIFFON: That's right, because it's still going to come back here.

MR. HINNEFELD: I'd be insulted if I were you, because I think your reports are

pretty clear.

CHAIRMAN GRIFFON: Wanda has a question.

MEMBER MUNN: No, I just have a statement. Gentlemen, I don't know how you expect to get a transcript out of this meeting. I really don't know how you do. Because at least 50 percent of the time, a minimum of two of you is talking at the same time, and usually it's three or more. Are you getting half of what's being said here? I don't see how it's possible.

MR. KATZ: Charles is really good.

MEMBER MUNN: No, it's just -- I just want to warn you, you know, we are trying to transcribe our proceedings and we are all talking at the same time.

CHAIRMAN GRIFFON: Good point. Good point.

MEMBER MUNN: My other concern is whether there are going to be punitive damages if we don't meet this goal that was set here.

I'm always afraid we're going to be locked in the meeting room through -- over New Year's Eve.

(Simultaneous speakers.)

MR. KATZ: All options are on the table.

DR. MAURO: I like change of --

CHAIRMAN GRIFFON: And I thought Wanda was going to make a motion to take lunch, but --

MEMBER MUNN: I would be very pleased to be the person to step forward and suggest that we break for lunch.

CHAIRMAN GRIFFON: Are we -- I think we are done with that topic -- we have a path forward so -- okay. Let's take that break.

MR. KATZ: Thank you everyone on the line and we'll hook back in with you at -- what time is it now?

MEMBER MUNN: About 10 after.

MR. KATZ: Okay, so about 10 after

one.

CHAIRMAN GRIFFON: Ten after one, yes.

(Whereupon, the above entitled matter went off the record at 12:10 p.m. and resumed at 1:10 p.m.)

A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

(1:10 p.m.)

MR. KATZ: Good afternoon. Advisory Board on Radiation and Worker Health, Dose Reconstruction Review Subcommittee. We are just reconvening after lunch.

Let me just check on the line, specifically for Board Members. Dr. Poston, are you back with us?

(No response)

MR. KATZ: Okay. How about John Mauro, are you with us, and Scott Siebert?

DR. MAURO: Yes I am still here.

MR. KATZ: Great.

MR. SIEBERT: Yes, I am too.

MR. KATZ: Great. Okay. Mark.

CHAIRMAN GRIFFON: Okay. The next item on the agenda is, and Ted, you might have to help me with this, other items related to NIOSH 10-year review. I'm not sure what we mean by --

MR. KATZ: I just wasn't 100

percent sure that I would have caught everything that --

CHAIRMAN GRIFFON: Oh, okay.

(Simultaneous speakers.)

MR. KATZ: Open door.

MR. HINNEFELD: Well, we talked about the items, I mean the quality items from the 10-year review were the -- how come your system doesn't find it, and that's what we're going to be talking about, and then work with the DR Subcommittee, essentially it's just work with the DR Subcommittee to continue the effort on evaluations.

And it also wants us to continue to focus on timeliness.

CHAIRMAN GRIFFON: Timeliness.

MR. HINNEFELD: It's just one of the things on there. We can write a report on timeliness, I can tell you that we are getting claims out within nine months. We are getting the bulk of them out quicker than that.

We could run, if you want to see

what's the average age of the cases we completed last quarter or the quarter before, we can do that.

CHAIRMAN GRIFFON: You've looked at some of that from the past. You can show improvement, too, right, on --

MR. HINNEFELD: Oh, certainly. Oh, certainly. So, I mean --

MR. CALHOUN: We're getting to the point now where it's steady state truly, and we are not going to be able to improve much more getting them out any sooner, just because we have got to wait for data to come back and things like that --

CHAIRMAN GRIFFON: Right. A certain fixed time --

MR. KATZ: So like, at the last meeting you had said you would like a little report on that on timeliness, but do you, do you want something more concrete?

MR. HINNEFELD: I mean we can provide -- see the thing about it is there are

a lot of ways to present it, like I said. We can present annual age or average age of the ones we have completed. We could give you the distribution of the claims that are with us now in terms of how old they are. There are a few older ones on there because there's the surrogate data we are still putting to bed.

CHAIRMAN GRIFFON: I mean I think it might be useful just to update your NIOSH update to the Board as something along those lines --

MR. HINNEFELD: Okay.

CHAIRMAN GRIFFON: -- that looks at that timeliness and you know, we briefly discussed it here, but you know --

MR. HINNEFELD: We can send some information between now and the next --

MR. KATZ: Well, you can just then make it as a presentation, part of your program update for the Board Members --

MR. HINNEFELD: All right. But I don't have to start through here -

MR. KATZ: And let it be independently --

MR. HINNEFELD: All right.

CHAIRMAN GRIFFON: I think that's fine.

MR. KATZ: That takes care of that then.

CHAIRMAN GRIFFON: And I think that was -- the only other thing I have on other factors in the 10-year review was the degree of claimant-favorability. I mean this is a fuzzy one. But wasn't that brought up with --

MR. HINNEFELD: Yes, the idea was, well, we say we are claimant-favorable, but we don't really try to quantify it or there's no real example.

And it's not just an example because we have got a lot of examples of claimant-favorable approaches, but really how favorable are these approaches.

I don't know we've got much on

that. But yes. That didn't actually come out of the DR set of the 10-year review, but it was -- came out of a different piece and was assigned to the Subcommittee as I recall.

So I don't think we've got anything to share on that right now. But if something will -- the 10-year review is like everything else, you know, these are all good ideas but unfortunately we've got jobs.

MEMBER MUNN: How can you evaluate that?

CHAIRMAN GRIFFON: I know. That's what I was just going to ask. Do you have any ideas --

MR. HINNEFELD: Well, we're pretty creative. I'd have to just go back and think about it a little bit, but if we were to -- I'm just thinking on the fly. I mean, we could have probably a range of favorability or pick a handful of claimants, you know, sampling of claimants and say that we did an overestimated missed dose on, and in this case

that approach was favorable by this amount.

I mean I don't, I don't know and I don't know if it's really down to an overestimating thing or if it's to -- I guess I'm going back a little bit, and I'm not -- it's not familiar enough to me to really remember now exactly what the point was.

It came out of the quality of science review I'm pretty sure. So I have to go back and see where it came from and what exactly the wording is.

I kind of thought at one time I had an idea that we might be able to do something, but right now, I don't remember well enough to be able to say.

CHAIRMAN GRIFFON: Yes. I would think it would be less on the overestimating cases and more on the best estimate cases where you know that there's an inherent uncertainty in the sites and how claimant-favorable are we, is NIOSH, in those cases?

I mean I think that, it seems to

me that that would be more of the concern and I guess if you are overestimating, who cares how overestimating you are, or I mean, if you are --

MR. HINNEFELD: Yes, you're right. I think you are probably right. When you say we make a claimant-favorable decision, these are the best estimates. But you know --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: How much really -- how claimant-favorable is that really.

CHAIRMAN GRIFFON: Right. I think that would be more the issue because, you know, if you're overestimating, you're saying we're not quite claimant-favorable enough, we are going to be more overestimating, you are still don't get compensated.

So I don't think that's -- I don't think that's the rub. I think the question would be more on the closer cases, the cases on borderline compensability, right? Wanda?

MEMBER MUNN: One of the things

that I don't believe is understood outside of the confines of the agency and the contractors and the Board, is the extent to which uncertainties are added to the claimant's known or estimated dose.

It seems very few people understand that they are given credit for this fairly significant list of uncertainties that are not the way most people think about numerical results.

They just don't think about numerical results as incorporating uncertainties that have been credited to them. It seems that if we are going to try to make some kind of quantification, that it might be of some benefit to identify how many of those types of added doses are granted to claimants because of uncertainties. Don't know whether that's feasible or not, but it's certainly one of the unknowns to most claimants, I think, and their families.

MR. HINNEFELD: I'll take all this

on advisement and get back to you.

CHAIRMAN GRIFFON: Yes. Because even on some of the internal dose stuff, I mean, I know there's some assumptions about the GSD. We had lots of discussions around the table about that, on previous cases that we've been through, so --

MR. KATZ: I think it's a very complex question because some of it is procedure-specific that cuts across sites, and some of it is site-specific and it will be pretty different from site to site, what the factors are that are claimant-favorable, that are applied to dose reconstructions for that site, so I think it's a pretty difficult question to handle monolithically.

CHAIRMAN GRIFFON: It is. It is.

MR. HINNEFELD: Well, we'll just have to do some more studies. Fortunately it's in the quality of science review so we've documented the draft --

CHAIRMAN GRIFFON: And yes, and

since it's coming from the quality of science review, I mean, I think it would be more focused on these tools, like IMBA, how much built-in claimant-favorability is there in these models, like Wanda said, for when you are putting in the uncertainty, are, you know, how generous are they.

MEMBER RICHARDSON: The other way of doing it is to possibly start peeling off some of those things and examine how sensitive the Probability of Causation estimate is to those.

CHAIRMAN GRIFFON: Right.

MEMBER RICHARDSON: It's not, I mean -- it's not even obvious to me what the answer to that is. I mean, because the uncertainties are symmetrical, they are -- by saying they are uncertain it means that over some iterations of the Monte Carlo draws, you are pulling values less than the value as well as values that are different, and a lot of the distributions aren't proper distributions, I

mean, the triangles are something like that, but they don't have long tails, so I don't even have a good intuition for, I mean, you know, going into this program I thought, given how many uncertainties, how many factors all had uncertain distributions around them, I thought, well, everybody will be compensated.

I mean, just, you know, this -- you layer these on top of each other, on top of each other, I was imagining things with tails layered on top of tails on top of tails and drawing the 99th percentile of it, seemed like it should, but it doesn't.

So I don't, I don't understand clearly if you would take -- start to pull these apart, which ones actually have leverage and which ones don't.

MEMBER MUNN: Well, if you don't understand it, then there are very few people in the outside world who would. But I think --

MEMBER RICHARDSON: I think it's

because a lot of those triangles, instead of normal distribution, I think that's part of the story at least.

MEMBER MUNN: I only suggested that because I thought it would be instructive for people to know that there are multiple factors that are decided in their favor. I don't think they know that and I don't expect them to understand it.

But if they understand that there are a half a dozen or more factors that had a decision point, each of which was made in their favor, that it might be helpful.

One can't predict what's going to be helpful and isn't, I don't think.

CHAIRMAN GRIFFON: Well, you probably have to take, I mean, look at this internally. I know Jim Neton has looked at that exact question that David was raising in the past.

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: Because we have

had that discussion, and what's the sensitivity of this. So, alright. But just, so that's another topic that we shouldn't forget on our other 10-year review issues.

MR. HINNEFELD: Okay.

CHAIRMAN GRIFFON: And maybe you can -- at the next meeting of the --

(Simultaneous speakers.)

MR. HINNEFELD: We'll do some stuff and see what we can do for the next meeting.

CHAIRMAN GRIFFON: The next topic is the seventh to ninth sets, but I'm going to skip that for a second and go to the last topic, which is preparing the second Board report, which was brought up at the last Board meeting that we should -- this Subcommittee should consider having a second report to the Secretary on our, you know, the status, where we are.

I mean, right now we, we reported on the first through the fifth sets, and at this point we have the sixth set done. We

reported one through five, right? Yes. So we have the sixth set and the seventh and ninth -- seventh is almost done I believe, and maybe today it will be.

And, you know, so I am wondering if -- I think we might want to at least wait until the ninth set until we get through that group.

And another thing we might want to think about is, for the next meeting, I will pull out our last report and circulate that, just so people get a sense of what we reported.

But we may -- I mean, I would actually lean toward not reporting necessarily that same format. You know, it may not be that instructive, especially if we are finding there are some kinds of -- I think, in the last four sets we have had similar kinds of findings and similar -- so it may not be as instructive. We might want to think about what we can say at this point, you know, from

our current work, and then also maybe just the status of what the continuing work is, and if we can report on anything that NIOSH has done since our last report came out, you know, I think we might want to include that.

So I don't know if anybody has thoughts on this report idea.

MEMBER MUNN: I would certainly agree with postponing it and I also agree with your observation with respect to, not necessarily the format, but probably the content, what we look at and what we do has changed significantly since the early days.

We have many more procedures in place and many more workbooks and a much more formalized structure than we had at the outset, and I would anticipate that our progress therefore would be of a different type from what we've had before, although I'm sure that the metric will be -- how many cases have you done?

CHAIRMAN GRIFFON: Yes, yes.

MEMBER MUNN: It seems logical to wait until we close a couple of these outstanding matrices.

CHAIRMAN GRIFFON: Right, I'd hate to report three years later that we got through another 20 cases, set 6.

MEMBER MUNN: Let's do better than that.

CHAIRMAN GRIFFON: Yes, we can do better than that. But in the meantime, I think this may be, if people can think about what we might want to have in that report, I'll circulate the previous report, maybe that will generate some ideas or thought.

And the other thing we should probably keep in our minds is the 10-year review report. Maybe that will spur some ideas on what we might want to report on as well. I don't know if people have thoughts right now, but I'm just planting the seed that we should start to think about developing that report.

MR. KATZ: The previous report should be on the website too.

CHAIRMAN GRIFFON: So we don't have to circulate it.

MR. KATZ: I don't think you have to circulate it. I think you can find it under Board recommendations or correspondence, wherever. Somewhere on the website. It should be there, I think, because that was a formal transmission to the Secretary.

MEMBER MUNN: It might be nice to forward the website URL so that we won't have to all go trying to find it. The copies that I have were in bits and pieces, you know, as we got them.

CHAIRMAN GRIFFON: Yes, I should make sure -- yes. Oh, and for the final transmitted copy, we want to circulate that.

MS. LIN: Mark, did you just say that you are going to include the progress -- the results of the 10-year review in the report to the Secretary?

CHAIRMAN GRIFFON: No.

(Fire alarm interruption.)

CHAIRMAN GRIFFON: To respond to Jenny's question, I don't think we are reporting on what you have done in response to the 10-year review. That's separate.

MS. LIN: Okay, good.

CHAIRMAN GRIFFON: You know, but I think we should consider what was brought up in the 10-year review, in terms of maybe we should address these similar issues that were brought out in that. That's all I'm saying.

MS. LIN: Okay.

CHAIRMAN GRIFFON: Yes. Okay. It's going to take us a few minutes anyway to pull up the cases, sets seven through nine. I'm probably going to need some help on the distribution that was done.

But if we're ready, let's delve into the -- John, how did you describe this? Pulling through the cases, or trudging --

MR. STIVER: Plodding.

CHAIRMAN GRIFFON: Plodding. That's the right word. Plodding through the matrices.

MR. STIVER: I can get us off to a fast start.

CHAIRMAN GRIFFON: Well, first of all, Brant, before you get us off to a quick start, tell us which files, because I have a bunch of Word documents that came through.

DR. ULSH: The seventh -- there was kind of a seventh set matrix.

CHAIRMAN GRIFFON: But I have several seven things here listed. Brant, can you read the whole file name, sort of?

DR. ULSH: Well, the seventh 28 case matrix 12-19-2011 NIOSH for March 2012 meeting, dot doc.

CHAIRMAN GRIFFON: Seventh case matrix 12-19-2011, that one?

DR. ULSH: Yes.

CHAIRMAN GRIFFON: I just have several that say "seven case matrix."

DR. ULSH: There should be one that says NIOSH for March 2012.

CHAIRMAN GRIFFON: NIOSH for March 2012, okay, got it.

MEMBER MUNN: This is 1/21 through 1/48.

CHAIRMAN GRIFFON: Alright.

DR. ULSH: I can make this pretty quick. There are three remaining items that are open, at least on our side. I think you guys don't have any.

MR. STIVER: We don't have any open on our side.

DR. ULSH: And all three of those depend on revision of the Aliquippa Forge TBD, so you are going to see the same response in there, that that TBD is currently under revision but it hasn't been accomplished yet, so we can't close it until that happens.

CHAIRMAN GRIFFON: And the other thing we may do, just in thinking of our report coming up, you know, if we have

something like this on the seventh, eighth and ninth set, I think we can say we reviewed this many cases and skip over the cases that are just hanging out there.

DR. ULSH: Scott, do you know the timeframe on issuing that revision?

MR. SIEBERT: I believe it is in internal review over here right now. Outside of that, I can't really say. I don't know if Mutty has gotten back on the line or not.

CHAIRMAN GRIFFON: Okay. We'll leave it on hold for now. It's in the process.

(Simultaneous speakers.)

MEMBER MUNN: 1/21 again.

CHAIRMAN GRIFFON: So I took all that time finding that and --

DR. ULSH: I was going to say, you have some work finding it.

CHAIRMAN GRIFFON: We probably should have let you just --

DR. ULSH: The next one will be even harder.

CHAIRMAN GRIFFON: Now, the eighth set which -- I see an eighth set responses 3/22/2012 but that might not be it.

MR. HINNEFELD: This one is saying NIOSH eight case matrix, it says working draft, and the right hand side says NIOSH March 2012.

CHAIRMAN GRIFFON: The other may be Doug's response -- it would be two different files for this.

MR. HINNEFELD: Doug's, I don't know if Doug has put his responses on top of ours or if you put them in a different --

MEMBER MUNN: You have 1/49 and 1/78 and 1/66.

MR. HINNEFELD: Okay.

CHAIRMAN GRIFFON: I think you sent them on different --

MR. HINNEFELD: He used a different starting point.

CHAIRMAN GRIFFON: When you did your responses, Brant, you put them in the

matrix that I had sent out from the last meeting?

DR. ULSH: It's a --

CHAIRMAN GRIFFON: Because just in terms of me updating that --

DR. ULSH: It's an excerpt from your matrix that only includes the items that are open for us.

CHAIRMAN GRIFFON: Oh, okay.

MR. STIVER: We did the same thing. It's just an excerpt.

CHAIRMAN GRIFFON: All right.

MR. FARVER: Now, I sent a file out yesterday and that has our responses to your recent responses. In other words, it's that one that you sent out in March this year.

DR. ULSH: The 22nd maybe.

MR. FARVER: I got some responses back for that one.

(Simultaneous speakers.)

MR. FARVER: But I can just talk you through them --

CHAIRMAN GRIFFON: And, Doug, that file is called eighth set responses 3/22/2012, is that it?

MR. FARVER: That is other responses. So you'll need that within a minute.

CHAIRMAN GRIFFON: Okay.

MR. SIEBERT: This is Scott. I don't believe I have received Doug's, so if someone could forward that one from yesterday, that would be helpful.

MR. FARVER: We don't really need them. It's not that much responding to --

MR. HINNEFELD: All right. Well, I'm not doing anything, Scott, this is Stu, I'll send it to you.

MR. SIEBERT: Okay. That's fine, thanks.

DR. ULSH: I don't know if I got it either. You sent it yesterday?

MR. FARVER: I thought you received it.

MR. HINNEFELD: I don't remember seeing it. Now I'm trying to find it.

DR. ULSH: I'm not showing any email from Doug yesterday.

MEMBER MUNN: Well, let me see what mine says.

MEMBER RICHARDSON: It was 1:59 p.m. on Tuesday.

DR. ULSH: Yesterday or Tuesday?

MEMBER RICHARDSON: Tuesday at 1:59.

MR. FARVER: I did send one on Tuesday. I did send one yesterday.

DR. ULSH: The one yesterday was the responses to their --

MR. HINNEFELD: Hang on. Who else needs it? Okay, right now I am sending it to Brant and Scott. This is the one from yesterday morning.

MS. K. BEHLING: Excuse me, this is Kathy Behling, and I didn't receive that either.

MS. LIN: Does it have Privacy-Act-protected information?

MR. HINNEFELD: Well, let's see. We try to avoid it in these things.

MR. KATZ: It has the tabs.

MR. HINNEFELD: Well, it has the tab numbers but those don't relate to anything.

MS. LIN: Well, we are trying to find a way to actually account for people's information --

MEMBER RICHARDSON: That's fine. I don't -- just send it to everyone.

MR. FARVER: I can do it verbally. It's really not that much information.

CHAIRMAN GRIFFON: All right, I think let's just -- let's just proceed and you can tell us the responses.

(Fire alarm interruption.)

(Whereupon, the above-mentioned matter went off the record at 1:36 p.m. and resumed at 1:39 p.m.)

CHAIRMAN GRIFFON: We're going back on the record now. Sorry, on the phone, we had a little fire drill thing here. Okay, so I'm --

MEMBER MUNN: You said it was two files and I only see one.

MR. FARVER: No, that was one file from yesterday. It's two files on Tuesday.

CHAIRMAN GRIFFON: I am trying not to violate Wanda's rule.

MEMBER MUNN: That is not my rule. That's a common sense rule. We want a transcript here.

CHAIRMAN GRIFFON: It is, right. So can we work from the -- I have the eighth 30 case matrix working draft, December 19, 2011, NIOSH from March 2012 meeting document. Correct. Okay.

DR. ULSH: All right. The first item on there is 149.1, and basically the status is we are still continuing to work on that. We haven't closed that yet.

CHAIRMAN GRIFFON: Okay.

DR. ULSH: Unless there's any objections, I'll just walk through and you can stop me when you want to.

149.2, basically we are committing to include a 50th percentile option in the next revision of the TBD.

MR. FARVER: SC&A has no further response since you are just closing the issue.

CHAIRMAN GRIFFON: Let's not get too quick here. 149.2, you said you were revising what?

DR. ULSH: The TBD.

CHAIRMAN GRIFFON: And how does that affect the case? No further --

MR. SIEBERT: This is one where -- this is Scott -- where we used the 95th percentile because it was a one size fits all TBD and it's a nurse, and it was discussed that maybe that was too high for the individual, so from a point of view of what would it do to the case, it would only reduce

the dose in this instance.

CHAIRMAN GRIFFON: And so you are just revising the TBD to have better guidance on it, on the model selection or whatever?

DR. ULSH: Yes, to include a 50th percentile option. It doesn't have that in there now.

CHAIRMAN GRIFFON: Okay. Are we okay with that?

MR. KATZ: Closed?

CHAIRMAN GRIFFON: Closed.

DR. ULSH: All right, 149.3 is another one where we have not closed it yet, I mean we have not resolved it yet.

And 149.5 is another one where we are going to include the 50th percentile.

CHAIRMAN GRIFFON: And SC&A, that's the same response?

MR. FARVER: Same response. Suggest closing it.

DR. ULSH: All right. 149.6, same thing, we are including a 50th percentile.

MEMBER MUNN: And the same response?

MR. FARVER: Same response. Suggest closing it.

DR. ULSH: Should we keep going, Mark? Are you keeping up?

CHAIRMAN GRIFFON: Let me just catch up with that. That was 149.6, right?

MR. KATZ: Yes.

CHAIRMAN GRIFFON: Okay. All right. Go ahead.

DR. ULSH: All right. The next one is 153.6 and the newest development is that we agree with SC&A's finding. We have reviewed OCAS-TIB-7 and we don't see the necessity for a revision.

The problem with this case was that the guidance in the TBD was not followed, not that the TBD was deficient in some way.

CHAIRMAN GRIFFON: So that is 153.6 and --

DR. ULSH: Yes.

CHAIRMAN GRIFFON: So NIOSH is saying no changes. It was just -- so you're agreeing that a mistake was made following the guidance, right?

DR. ULSH: Yes, so the latest action item from December 19th, 2011, was that -- yes. So the remaining action item for us was to check and see whether OCAS -- I think it should be OCAS-TIB-7 -- needed to be revised.

So we have done that now and our judgment, at least, is that it does need to be revised.

CHAIRMAN GRIFFON: And SC&A?

MR. FARVER: There is no further response and suggest closing the issue.

CHAIRMAN GRIFFON: And it is closed. All right, 153.7.

DR. ULSH: Same answer.

CHAIRMAN GRIFFON: Same answer.

DR. ULSH: Yes.

CHAIRMAN GRIFFON: Okay

DR. ULSH: All right, sadly, we are not going to be able to go as quickly through the next one. 161.2, our latest response is that we have provided some more discussion on the use of OTIB-2 for a Hanford thyroid case. It was attached as a separate file.

And OTIB-2 overestimated the dose to the thyroid in this case, based on the actual data that we determined from a later rework.

I assume that you are going to want to discuss this in a little more detail. Scott, do you want to walk us through that?

MS. BRACKETT: This is Liz. I think I was going to do this one.

DR. ULSH: All right.

MS. BRACKETT: Since it was internal dose and OTIB-2.

DR. ULSH: Wait, before you get started, Liz, it was a separate file. Do you want some time to pull that file up?

MS. BRACKETT: Are you asking me or everybody there?

DR. ULSH: I'm asking everybody in the room. It's called SC&A 161.2 March 2012.

MEMBER MUNN: I think you have a hard copy of it, don't you?

CHAIRMAN GRIFFON: I see a SC&A 161.2?

DR. ULSH: Yes, March 2012.

CHAIRMAN GRIFFON: Got it, okay. Go ahead, Liz.

MS. BRACKETT: Okay. Well, the first part of the comment said that it's hard to believe 202 millirem is maximizing dose for 22 years. We can provide comparison calculations.

I think that there must have been a paragraph missed when reading that. That is only the assessment for the one positive bioassay result. There was a positive cobalt-60 result and that was the dose from assessing that.

But in addition, OTIB-2 was assigned, which brought the total to 5.503 rem. The document, I believe, says 5.705. That was a misinterpretation on my part of the paragraph. I added the 202 but it was already included.

So -- but the actual total internal dose was 5.5 rem that was assigned. So there was some discussion about -- besides that, the appropriateness of OTIB-2.

It didn't -- it doesn't -- well, OTIB-2 has been cancelled since this was done. That was done about a year ago and we discussed that in the Procedures Subcommittee. But it was based on the assumption that intakes above a certain level would have been detected by a bioassay or workplace monitoring. This person was monitored throughout his career, but his results, aside from that one cobalt-60, were not positive.

So that's why OTIB-2 was applied, and there is an iodine-131 intake included.

Since this was a thyroid cancer, that would have been important to consider iodine.

So this case was reassessed as part of the plutonium Super S PER a few years ago, and when the reassessment was done, the next dose was done based on all the bioassay, rather than applying OTIB-2 again, and so in that case, the total dose assigned was only 1.93 rem, and that included missed doses for plutonium, iodine-131, mixed fission products and strontium-90, as well as the addition of coworker dose because he had no bioassay results for the last two years of employment, so coworker dose was assigned for that timeframe.

So part of the comment said: please provide comparison calculation, so these would be an appropriate set of comparisons. So the original dose assigned was 5.5 rem using OTIB-2 as an overestimate, and then, based on the individual's bioassay data, the total dose was 1.9 rem.

CHAIRMAN GRIFFON: So did you get a chance --

MR. FARVER: Yes, well, the finding came from the fact that they used the OTIB-2 when the employee had bioassay data, in vitro data from '94 to 2005, and in vivo data from 1983 through 2005, but they didn't use it.

So that's what constituted the finding. Okay? I guess along the way, things got a little convoluted, and when I mentioned that the 202 millirem was kind of hard to believe for over 20 years of monitoring, I was referring to the cobalt-60, where the employee was monitored from '83 to 2005, and when NIOSH did their calculations, well, I guess the employee has part of the cobalt-60 whole body count in 1985.

So really, that 200 millirem is from '83 to '85, covering two years, so it's really not over 20 years. The rest of the in vivo measurements were below detection limit.

So that's why there was a little bit of confusion there. It really wasn't over 20 years. It was over two years.

MEMBER MUNN: That makes better sense.

MR. FARVER: Yes, I mean, that's a more reasonable number for over two years. So that was kind of the confusion in that, because -- and I'm not sure -- did we determine that OTIB-2 was appropriate to use here, or should you have used the bioassay data? I know you finally did use it, but is it okay to use OTIB-2 in a situation where you actually have the bioassay data?

CHAIRMAN GRIFFON: OTIB-2 is no longer in effect, right?

MS. BRACKETT: Right.

MR. FARVER: Suggest we close this issue.

CHAIRMAN GRIFFON: The only question I would have is whether -- I mean, there might still be a valid question for old

cases that we haven't looked at, you know.

MR. FARVER: It could be if it comes up again, depending on when OTIB-2 got cancelled and --

MS. BRACKETT: Right, it was just cancelled, I believe last year.

CHAIRMAN GRIFFON: Right. So there were a lot of cases that had used it for decisions, right? I mean --

MR. FARVER: Is it okay to do that when there's bioassay data available?

MR. HINNEFELD: Well, I guess our preference would have been that no, you wouldn't do it, although you know, since it's in the past, you know, the use of it was in the past. So changing something now, you know, we can't change anything now back.

MR. FARVER: It's only if it would somehow affect other cases that have been done.

MR. HINNEFELD: But if it were -- unless there's some evidence that TIB-2 wasn't

sufficiently on --

CHAIRMAN GRIFFON: Right. That would be the question. Is it claimant-favorable in all cases and if so --

MR. HINNEFELD: You know, if it's claimant-favorable in all cases, you know, and the fact that maybe at some point in the past, when we had bioassay data, we used TIB-2, and why didn't you use bioassay data --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: Some said we should have used bioassay data. We're not going to do anything about it now, since we're not using TIB-2 now.

MS. BRACKETT: I think that OTIBs 2 and 18 have sometimes been used in cases where there's bioassay data but everything is less than detection limits, because the basic premise of them is that -- both of them -- is that if there had been something there, that the levels that are in there are such that they would have been detected by the bioassay

method, and so the dose reconstructors would use this as, to -- as an efficiency method to overestimate what the dose would have been from less than detectable levels were, and then add on top of that anything that is positive, like this one did for cobalt-60.

I don't think that that would be encouraged now, the, you know, the dose reconstructors should be using the results, but that has been done in the past. If everything is less than detection limits and --

DR. MAURO: Liz, this is John Mauro here. OTIBs 2 and 18, are those the ones that sort of key into the NPCs at the time? Some fraction of the maximum permissible concentration?

MS. BRACKETT: Yes, well OTIB-2 was based on maximum permissible body burden.

DR. MAURO: Okay. Now, and when it was used, at the time it was used, was that used as a maximizing approach?

MS. BRACKETT: Yes, this is a maximizing approach.

DR. MAURO: Okay, and so people were, in theory, anyone where OTIB-2 was used, in theory, should have been denied, or do I have it wrong?

MS. BRACKETT: I believe that's the case.

DR. MAURO: You can understand why I raised the question. If it was used in the past, and people were granted, and now it's no longer being used and a different technique is being used and people are being, under the new method, are being denied, it creates a strange circumstance when you make such a transition, and I'm not quite sure what the NIOSH or the Board's posture is when these situations arise.

MS. BRACKETT: Well, I'm not clear -- I'm not sure I understand what you are saying. But this has all been covered at length in the procedure review. We have gone

over OTIB-2 and OTIB-18 and the transition from one to the other and old methods, new methods.

DR. MAURO: If I'm a cobalt case, you can understand why I raised the question, though?

MR. HINNEFELD: OTIB-2 is, was only for denial --

DR. MAURO: Okay, and that solves the problem.

MR. HINNEFELD: -- a single acute intake has -- and now that they are 100, like 110 DAC hours of combined radionuclides. So it was this large intake.

CHAIRMAN GRIFFON: Overestimating approach.

MS. K. BEHLING: This is Kathy Behling. In fact, there's a statement in OTIB-2 that specifies that this is only to be used for maximizing cases and not for compensation.

DR. MAURO: Thank you. I wasn't

aware of that until I asked the question. Thank you.

MR. FARVER: So we should be okay.

CHAIRMAN GRIFFON: Yes. So what do, just to track this, what do I put?

DR. ULSH: Closed.

CHAIRMAN GRIFFON: Closed. That's short and sweet. I'll just put that NIOSH provided an assessment and SC&A is okay with it.

DR. ULSH: All right. The next one that we have is 161.3 and if you look over at the resolution column, I think we have already all agreed that it's a QA issue, and SC&A agrees that it would not have affected the compensation decision. The outstanding part was for us, NIOSH, to check and determine whether the directive to include this in the dose reconstruction report predates the assessment date for this case.

We have looked for it high and low and we simply cannot find that record.

MR. HINNEFELD: I can't find the email I sent over, it goes back. I mean, that has to go back five, six, seven years, and I just, I just couldn't find, couldn't find it.

MEMBER MUNN: Have you looked in the cloud? I'm sorry. I shouldn't be making --

MR. FARVER: Should we send one out now just for completeness, saying just to reiterate, so that there is something on the record that -- so that this won't come up again?

MR. HINNEFELD: Well, I don't know, something we're not doing, something we haven't done for, let's see, let me think.

MR. FARVER: I mean this is our old issue of including CATI information into the DR report. Well, I mean, I don't know what, what should we do so we don't keep bringing this up over and over?

CHAIRMAN GRIFFON: So we just -- yes, I remember the letter, I mean, I even

think you provided it to the Board.

MR. HINNEFELD: I think so.

CHAIRMAN GRIFFON: We just can't get our hands on it.

MR. HINNEFELD: Well, you know, who knows what happened? I haven't been able to find it. It was -- I sent it over, I'm pretty sure I sent it to Jim Griffin who is the Deputy Director for ORAU, and it was instructions about making sure that all the information that is mentioned in the CATI is mentioned in the dose reconstruction even if it can't possibly have anything to do with the dose, like, a lot of the CATIs, they'll mention chemical exposures that they had.

So, but be sure to indicate to the person that we read your CATI and we paid attention to your CATI that lists everything in there. So I did it, like I said, I did it years ago, and I just couldn't come up with it.

I don't know. I don't, I don't, I

personally don't see a lot of point to go send an email to ORAU saying, hey, remember to do this, when as far as we know they won't do anything.

MR. FARVER: I am trying to prevent this from happening again, us bringing up this finding. If we had a date, we could say we're not going to bring it up after, you know, DRs that were completed after this date, because -- or before this date because that's before the directive. But I don't have that one point.

(Simultaneous speakers.)

MR. HINNEFELD: Because for -- you know, so you find, if you review an old case that was -- or you -- okay, so I see what you are saying. If you find a case where it was done after that date, then you would have found an error.

MR. FARVER: Right.

MR. HINNEFELD: Well, the best I can hope for, if you want to do something like

that, is pick an arbitrary date, it had to be -- it had to be some time at -- no later than two thousand, what, seven?

If you've got one that was in 2008 or later, if it was done in 2008 or later --

MR. FARVER: So we'll say, January 1, 2008, anything before that?

MR. HINNEFELD: Yes, anything before that, don't worry about anything after that, then we'll have to kick our contractor for not doing what we told him to do.

CHAIRMAN GRIFFON: When was this case done? So it doesn't look awkward in the matrix if I put that date.

MR. SIEBERT: This was 2006. This is Scott.

MR. KATZ: I would pick a later date than that, because it really doesn't matter, the practice has changed, it doesn't matter even if you found it in a 2008 case. So --

CHAIRMAN GRIFFON: Right, that's

true.

MR. FARVER: Well, it does because if they have issued a directive saying to include it in recent cases, and the quality included it -- then it doesn't matter. I mean it does matter.

So if you want to use January 1, 2008, that's fine.

MEMBER MUNN: Sounds good.

MR. HINNEFELD: I think that's a safe date. I think I'm pretty sure I must have sent it by then.

CHAIRMAN GRIFFON: Okay. So we'll close it then. There's no sense in going on.

MR. FARVER: Oh, no no, that's fine.

DR. ULSH: All right. Move on?

CHAIRMAN GRIFFON: Yes.

DR. ULSH: Okay. The next one is 164.1.

MS. K. BEHLING: Excuse me Brant?

DR. ULSH: Yes.

MS. K. BEHLING: This is Kathy Behling. I -- you know, correct me if I'm wrong here, but we had some comments on tab 160 and I know if you want to go back to those when you're through with it, or if you wanted to discuss those now. I know you're --

MR. SIEBERT: This is on the rework --

MS. K. BEHLING: Yes.

MR. SIEBERT: You are talking about?

MS. K. BEHLING: Yes.

CHAIRMAN GRIFFON: Let's just do it later Kathy. Let's work through this one set --

MS. K. BEHLING: Okay, all right. I'm sorry.

CHAIRMAN GRIFFON: Okay. Thank you.

DR. ULSH: Okay, 164.1 I think is the next one. The outstanding action item was for NIOSH to verify that the workbook was

corrected, and the response we provided here is that the tool was replaced in February of 2010 so that tool issue was resolved.

CHAIRMAN GRIFFON: Brant, you said that the workbook was corrected. When?

DR. ULSH: February 8, 2010. And the revision number is there in the response too if you want it.

MR. FARVER: What about cases prior to that that used the incorrect date, the workbook with the errors.

MR. SIEBERT: This is Scott. If you look at the previous discussions from the Board, from the dose committee, it would have resulted in an overestimate and no PER would be needed.

MR. STIVER: That was the building in of the 1.3 factor.

CHAIRMAN GRIFFON: Okay, so that was the only thing we asked, right, to close that out, so no further action. Okay?

DR. ULSH: All right 165.1 is the

next one. Let me see if there's anything from the resolution column. NIOSH will accept those cases through PER process. And in our latest response, I think we agree that a PER will be necessary and will be conducted. It's a rather lengthy response. You can read through it in more detail there if you want to. But I think we are all in agreement that we need to do a PER.

CHAIRMAN GRIFFON: Did you -- I don't know how you work with this -- but did you number that PER yet, did you assign a number? Just for tracking purposes I thought it might be useful.

DR. ULSH: I don't think so. I think that will be assigned once we get the PER.

CHAIRMAN GRIFFON: Alright. I don't think we have any further action on this, on this finding, am I right? If they are doing a PER that sort of closes it out for this.

MR. FARVER: Which one are we on again, sorry?

DR. ULSH: We're on 165.1.

MR. FARVER: Okay. The only comment I want to make is that the INL specific workbook was used to calculate electron doses for the BCC and the SEC cancers. The complex-wide workbook was used to calculate the bladder dose, and we will talk about the complex-wide one with bladder dose in a couple of findings.

This was all with electron doses, because this was the INL workbook we were talking about.

CHAIRMAN GRIFFON: Oh okay, I see what you were saying. So it doesn't address the other side of that, is that your concern?

MR. FARVER: Well, I'm going to talk about the bladder cancer later and it was done with a different workbook, which also has some issues. I'm not sure why one, you know, why they used a complex-wide and didn't use an

INL-specific for all of them.

MR. SIEBERT: This is Scott Siebert. I can address that. Based on the fact that skin cancers use a fixed DCF of one, the normal workbook can be used for skin cancers because you didn't have to do Monte Carlo calculations based on the DCF distribution.

Once you went to the bladder cancer, you have to do the Monte Carlo calculation and there just was not a specific Monte Carlo best estimate tool for INL at that time, so the best -- the complex-wide best estimate tool had to be used for non-skin cancers.

DR. ULSH: Makes sense.

MEMBER MUNN: That is a good answer.

CHAIRMAN GRIFFON: So we are okay on that one.

MR. FARVER: We are okay on that. We'll go talk about the bladder cancer in a

couple of findings.

CHAIRMAN GRIFFON: Alright.

MEMBER MUNN: So we leave that -- is that closed because of the PER?

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: And his response.

MR. FARVER: Yes.

CHAIRMAN GRIFFON: 165.2 then, is that where we are?

DR. ULSH: Yes, 165.2, we have the same answer as the previous one. Is this the bladder cancer one or is that one later?

MR. FARVER: No, that's the next one.

DR. ULSH: All right.

CHAIRMAN GRIFFON: Okay. Go ahead.

DR. ULSH: All right. 165.3. This is the bladder cancer one I guess, and I don't know Doug, do you want to explain -- you had concerns about the latest response?

MR. FARVER: Yes, this comes down

to where it was dividing by 1.6 for the bias and -- which was basically, you know, division by two so it cuts the dose in half.

And I still think it's a workbook error, and the reason I think that is, when you open the workbook, the first thing that pops up is this little pop-up that says external dose calculation descriptions, and it describes the, and it has the equation and describes, it's in the equation, and at the end of the equation, it's divided by 1.6.

And I don't think the dose reconstructors are going to bother to go in and change all those descriptions if it's something that the dose reconstructors just entered on the fly.

MR. SIEBERT: Which version of the tool are you looking at? The one that we --

MR. FARVER: I'm looking at the one that was provided with the files of the --

MR. SIEBERT: So you're looking at the one that was used for the case?

MR. FARVER: Yes.

MR. SIEBERT: Okay. We went back and we looked at a clean copy from that timeframe, it did not appear that factor is in the clean copy, so it appears the dose reconstructor took that, probably just added that as a factor on one year and then just copied it on straight down, because they thought it was appropriate.

MR. FARVER: Well, how would it show up in the little pop-up that says, "External dose calculation descriptions?" How's it going to show up there unless he changes it and puts into each one of those descriptions?

If you go into the case files and open up this workbook, the first thing you get is this annoying little pop-up. And then at the end of every equation, you divide by 1.6. And then you go into the workbook and look, and all those equations are divide by 1.6.

So it was in the workbook. And

this goes back to my other concern, is I am not confident that these workbooks are being QA'ed, you know, and that there's any good quality control on these workbooks, if they're going to put out the correct answer, or have the correct equations.

Now, from my understanding, there's a QA program that will talk to QA Excel to make sure Excel adds and subtracts like it's supposed to, but I don't know of any process that's in place that assures that if you put in a certain number it will calculate using correct equations and give you a correct answer.

And this was all the workbooks. I don't know that that's being done. But in this specific case, I don't see how the dose reconstructor's going to go through and change all that.

MEMBER RICHARDSON: So is your -- can you help me understand, is your concern about the pop-up, the pop-up box and it as

documentation of what was done, or is it about the expression, the equation used to calculate dose?

MR. FARVER: Well, the equation is incorrect, because it's dividing by the bias. So that's wrong. And you know, right now, in their response, it says well, we have looked at a clean copy and the clean copy was correct so the dose reconstructor must have went in and put that divide by 1.6 for some reason.

And I'm saying, I don't think he did that. I think it was programmed into the workbook because this little pop-up comes up and that's where anything that tells you that it describes -- divides by the bias. And I don't think -- you know, I've seen dose reconstructors will go in and they'll change an equation, but usually they don't put a comment up there.

But they're not going to go back and change all the descriptions and things. It just doesn't make sense to me.

DR. ULSH: All right. So what we have is the workbook that was provided with this case is incorrect, in the manner that Doug described. We also have an example where ORAU went back and looked at what they're calling a clean copy and did not see that in there.

Those are the facts. Anything else is just speculation about how it got, how that one associated with this case got to be that way.

We are speculating that the dose reconstructor change that you are saying, you don't see that being plausible. My question, then, is how do we move forward and close this issue? Do you want us to look at more cases?

MR. HINNEFELD: Here's some things we should do, find out when this case was done. And is this an INL case?

DR. ULSH: It's -- yes.

MR. HINNEFELD: Okay. So you go always, either side in time, from this time,

look for other INL cases and for the tool that was used, and look at that tool, look at the tool in those --

MR. FARVER: Well, it wouldn't even have to be INL-specific, complex-wide --

MR. HINNEFELD: This is complex-wide. Okay, so it's a complex-wide tool, so you know, you're right, you can use any of them that used this tool, any claims that used this tool, and see whether the bias is included in others as well, and then the other thing, beyond that, is how could it have occurred that a clean copy of this tool says one thing but one that's presented, which apparently is the same version of the tool, says something different. How did that happen, if this is a one-time case, and if this is the only one we find like this, then maybe in some way the dose reconstructor did it all, odd as that may sound.

MR. FARVER: What threw me was at that top level --

MR. HINNEFELD: Yes.

MR. FARVER: The description --

MEMBER RICHARDSON: So could we look at two things though, because one is why do you want to move off time, instead of moving on to another case that used the complex-wide workbook on the same day? And ideally --

MR. HINNEFELD: Well, if you have understanding, what I meant to say was that close in time, if it's the same data, it's fine.

MEMBER RICHARDSON: And can you have it by the same dose reconstructor?

MR. HINNEFELD: Your available sample is pretty small.

MR. SIEBERT: This is Scott. It's probably unusual that we would have specifically one right in that timeframe, especially from the same dose reconstructor, because this is an unusual circumstance that we have to use a complex-wide tool for INL

because it's only when we had to do the best estimate external portion of the case, knowing the fact that we did not have a best estimate INL tool at the time, the dose reconstructors would reduce as many other factors as they could, so they didn't have to try to use the complex-wide tool at that time.

So I'm not saying it's impossible by any means, you can even look --

MEMBER RICHARDSON: I guess what I am wondering is, did this dose reconstructor break the tool and use a broken tool, or did, you know -- or was the whole, was the tool broken throughout the shop and everybody was using it? And it could be either of those, since we don't know what happened.

MEMBER CLAWSON: Doug, is that going to answer the question about the book, workbooks not being QA-checked, or --

MR. FARVER: That's a whole other standard, this one's just kind of --

MR. HINNEFELD: But in this case,

even if the -- if the workbook, when it came out had been appropriately QA'ed and came out perfectly and then it was modified in some fashion, you know, this is -- this may or may not be a QA or a worksheet issue. This might be a sort of a version issue.

DR. ULSH: So is the action item then for us to go look right around this timeframe and see if we can find more cases that use this tool and verify that they're correct or --

MR. HINNEFELD: Or not, find out if they're not, right.

CHAIRMAN GRIFFON: I guess that's the best we can do.

MR. SIEBERT: Well, this is Scott, I'm sorry. That is a bunch of work which I obviously have no problem doing. I'm just wondering if it might be more useful to send the clean copy to Doug that we found first, because I don't know for sure, but something in the back of my mind, I believe those pop-

ups are driven by what's in the cells, so it would depend on what's in the cell as to what shows up in the pop-up.

It may save us some time to give us the clean copy first, and then, you know, determine whether we need to move forward the rest.

MR. HINNEFELD: That may, that may help put Doug's mind at rest, but I don't know that it helps mine a whole lot.

CHAIRMAN GRIFFON: So you are saying if the cell is altered, these are pop-ups are tied in programmatically, with the program, right? And --

MR. SIEBERT: That may be the case. I seem to recall that might be the case, but I just can't speak for sure.

CHAIRMAN GRIFFON: Right, right, right. I mean you have it in front of you. Can you modify the cell right now and see if it adds a pop-up?

MR. SIEBERT: I don't have it

right in front of me --

CHAIRMAN GRIFFON: Oh, okay.

MR. SIEBERT: Yes, I would like our tool guys to take care of that for me. I apologize.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: Well, okay, for a starting point go ahead and send Doug the clean tool. But we need to talk, Grady, I don't know if you're paying attention or not, but we need to talk next week about this, because this -- this causes me a little concern.

So we'll carry on. It's to the nature of what I said, you know, you have a tool that apparently a clean version of this tool says one thing, and a tool that was used in this case uses others.

There's a chance that the guy who did this one case is the one that, quote, broke it. And it was -- he picked up a clean one and broke it. Or it could be a case that

a broken one was out there and available for people to pick up because they had them --

(Simultaneous speakers.)

CHAIRMAN GRIFFON: I mean, in my mind it raises questions of do you have certain fields that you -- that are locked, or that the dose reconstructor cannot --

MR. HINNEFELD: Well, I wouldn't even go that far, I mean, there may be cases where you want to be able to give the dose reconstructor the ability to do some things like that --

CHAIRMAN GRIFFON: Well that's why I said certain but --

MR. HINNEFELD: The key element in here is that whenever you get this tool, you get it from the same place and nothing changes the thing you get. You always get a purer one when you get it. That's the key thing that has to happen.

DR. ULSH: Yes, I think what Scott's saying is that that number might be

fed by some value in the cell.

MR. FARVER: And if that's true, that's okay.

CHAIRMAN GRIFFON: All right well that's a good --

MR. FARVER: But you can understand my concern. If you look at that, it looks like all that's in there correctly and -- and -- but if it's -- if this changes with -- when you change equations, then that's a different story.

DR. ULSH: So we are going to send you the clean copy.

MR. FARVER: You might want to just have your people check and see if changing their equation changes the dose calculation corrections.

DR. ULSH: Okay, so we will check that and send out an email to you and to the Subcommittee about that. Did you get that Scott?

MR. SIEBERT: I am writing

furiously. Yes, I did.

DR. ULSH: Okay good, and then we'll have further conversations, Stu, with ORAU, about whether we want them to look further to see if this might be a more widespread issue on this too.

MR. FARVER: Of course the other issue is why wasn't that caught before and things like that, you know.

MEMBER RICHARDSON: So does your workbook, the copy you have, has -- I guess where does it have information on the version? Is that just the date on which the file was created, or is there a --

MR. FARVER: It's up in the title. It says, "External tool 141.0."

MEMBER RICHARDSON: So there's no -- there's no indication there -- the naming of it hasn't changed despite the fact that the content of it is different than the version 1.10 which they are going to send you, is the clean one?

MR. FARVER: Well, they usually -- the name usually has the case number tacked on the end of it, so it will be external tool 1.10-018627, which is the case number.

MEMBER RICHARDSON: But it has -- it has a date created on it? And that's the date that the case was handled?

MR. FARVER: I don't know.

MEMBER RICHARDSON: Okay. I was just trying to think through if there's a way you could figure out if a person is starting with a clean copy each time or begins revising off-of something else, or maybe not.

DR. ULSH: Hey, Scott?

MR. SIEBERT: Yes.

DR. ULSH: I'm not sure if you are going to be able to answer this off the top of your head, but let's say I'm a dose reconstructor and you know, I've got let's say three Idaho claims that I'm going to try to get done today, and I start with an Idaho tool. Is there anything that instructs the

dose reconstructor to start with a clean copy of the tool for every case, or is it possible that I could make whatever changes, like maybe this one on the first claim, and then just kind of copy it over and use it for the next one?

MR. SIEBERT: Well, we -- I can't tell you that procedurally we are told to do that, however the managers have beaten the snot out of their people to tell them to use a new tool every time you start a case, just like you look at NOCTS every time you start a case, to make sure you are getting the latest information.

So the short answer is, could it occur? Sure. But it is -- certainly -- our displeasure would certainly be known rather rapidly upon that dose reconstructor.

DR. ULSH: It doesn't answer the question necessarily, but it just gives you a little bit of --

MR. STIVER: So at least you know

what the policy is, whether it was implemented --

DR. ULSH: Exactly.

MEMBER MUNN: It pains me to even point this out, but this leaves us with what I see as even the larger, global question, with respect to QA of the software.

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: I have no idea, and I don't know that we've discussed this in the Subcommittee, this specific issue of --

CHAIRMAN GRIFFON: V&V of the tools --

MEMBER MUNN: Yes --

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: For the software issues, for the tools. Do we have anything that we could point to?

DR. ULSH: Well, we owe you a discussion of ORAU's QA/QC procedures. Why don't we make -- would this be an appropriate time -- to do a V&V of tools?

MEMBER MUNN: It certainly would.

MEMBER RICHARDSON: And you don't use -- because those tools are proprietary, right? So when you are doing blind --

DR. ULSH: No, we have --

MEMBER RICHARDSON: Oh you use the tools.

MR. KATZ: The proprietary that's not -- NIOSH buys them.

MEMBER RICHARDSON: So that, so the blind review doesn't allow you to -- you're not using a site determined tool.

DR. ULSH: Correct.

CHAIRMAN GRIFFON: Okay, so overall then that's a good idea in that discussion, and let's move on from this case for now. Let's get an action to follow up on that tool.

DR. ULSH: All right are we on --

CHAIRMAN GRIFFON: And 165.4, is that it?

DR. ULSH: Point four, okay.

Where we left this was SC&A believes this is a workbook error. And we were going to look at it further.

We have provided a rather lengthy response. Scott, do you want to walk us through that?

MR. SIEBERT: Sorry, I'm scrolling through 14 different things here.

DR. ULSH: Page 15 of 30, 165.4.

MR. SIEBERT: Yes, yes. Okay. Basically, and this is once again getting back to the complex-wide tool, and the fact that when a dose reconstructor is using a complex-wide tool for a specific site, they need to be very careful, just like we're saying.

The dose reconstructor did include the correction factor of 2.2 in the correct column, however the complex-wide tool was not designed to apply that to missed dose.

INL is one of the very few sites across the complex where you would find the correction factor two missed dose as well as

measured dose.

So the issue is the fact that the complex-wide tool did not apply that.

MR. FARVER: Okay, now we are talking about missed neutron dose to the skin. And remember, this is where we use the INL workbook and the skin dose.

So that's what I'm saying, it's not even a complex-wide best estimate tool. It's the INL tool that's in question. And it did not apply the factor of 2.2 to the missed neutron bladder doses.

MR. SIEBERT: I've got to go back to the original finding here.

MEMBER MUNN: So that -- the calculation was based on the dosimeter report, right? This was a dosimeter correction factor, not just a site-wide correction factor.

MR. SIEBERT: Okay, in the original finding, SC&A states that NIOSH multiplied the number of zero cycles by the L

of V over two, the organ DCF, the ICRP-60 correction factor and the dosimeter correction factor of 2.2.

So we actually did apply it to the skin for missed dose, and that was done in the INL tool which is appropriate. I'm finished in case anybody --

MEMBER MUNN: There's a lot of circular thought going on --

CHAIRMAN GRIFFON: Here is what I propose. Here's what I propose. We take five minutes, except for Doug, and we give him a chance to think about this response, and let's take five for a personal comfort break.

(Whereupon, the proceedings in the foregoing matter went off the record at 2:28 p.m. and went back on the record at 2:37 p.m.)

MR. KATZ: We are back.

MEMBER CLAWSON: Okay, everyone on the phone. We are making some determinations here on flight schedules and stuff and we may

try -- we are going to try break this off a few minutes after three, so we have only got a little while left, so hang in there.

The one thing, before we go back to the matrix, and Ted suggested we look at dates for the next meeting, and if we are looking about eight weeks out from now, I have limitations in late May, but -- into early June actually.

MEMBER MUNN: Well, we're going to have to go to New Mexico in June.

MR. KATZ: That's later in June.

(Simultaneous speakers.)

MEMBER MUNN: It really isn't, especially since -- well, I guess we could do this two weeks before. We all go to New Mexico on July 19th.

CHAIRMAN GRIFFON: Is that the 19th?

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: How about --

MR. KATZ: How about the week of

the -- let me just think about this --

MEMBER MUNN: The fourth?

MR. KATZ: Yes, what about the week of the fourth?

MR. CALHOUN: As long as it's not on the 8th.

MR. KATZ: Well, the 8th is Friday and I'd prefer it not to be the 8th anyway.

MR. CALHOUN: Well, we're down to the 8th through the 15th.

(Simultaneous speakers.)

MEMBER MUNN: Tuesday the fifth?

CHAIRMAN GRIFFON: I don't get back from Australia until the third.

MR. KATZ: What about the 7th? Would the 7th work?

CHAIRMAN GRIFFON: Yes. I have one -- the 7th can work for me, yes.

MR. KATZ: David, on the telephone?

MEMBER RICHARDSON: Yes.

MR. KATZ: Dr. Posner, are you on

the line? How about Brant?

MEMBER CLAWSON: Yes, it will work. It's a little bad, I'll just move some stuff though. It'll work.

MEMBER MUNN: The 7th.

MEMBER RICHARDSON: Do it early. Seven o'clock in the morning?

MR. KATZ: Start early.

MEMBER MUNN: Oh, geez.

(Simultaneous speakers.)

MR. KATZ: Five a.m., yes.

CHAIRMAN GRIFFON: We could start a little earlier if you want.

MEMBER RICHARDSON: Just so it doesn't run late, because I'm going to be -- I mean, I'll --

MR. KATZ: What time do you want to start? 8:00 a.m.?

CHAIRMAN GRIFFON: Start at 8:00 a.m.?

MR. KATZ: Does that work for you?

CHAIRMAN GRIFFON: Wanda, you'll

be doing it the day before, so you'll be able to --

MR. KATZ: She has plenty of time to rest. It's only a three hour --

MEMBER MUNN: Listen to you.

(Simultaneous speakers.)

MR. KATZ: I was hoping for Brant and Grady, an 8:00 a.m. start, is that okay?

MEMBER MUNN: What's wrong with 8:30?

CHAIRMAN GRIFFON: Let's say 8:30. I don't want Wanda all, you know, nasty at me.

MEMBER MUNN: Believe me, you don't want to see me at 8:00.

MR. KATZ: Okay, 8:30 on the 7th.

MEMBER RICHARDSON: Okay, Thursday, June 7th.

CHAIRMAN GRIFFON: All right, so let's give this a good hard 20, 25 minutes. Go ahead Doug. You have plenty of time to give your response.

MR. FARVER: Okay, this is a lengthy response. No, I'm kidding. Okay, there was a little error in our response and it should say it did apply a dosimetry correction factor of 2.2. So it's incorrect to apply the 2.2 to missed neutron doses to the bladder.

That's incorrect, and I just checked the workbook, and the workbook does apply the 2.2 to the missed doses to the bladder.

MEMBER MUNN: Incorrectly.

MR. FARVER: Incorrectly.

MR. SIEBERT: And I guess what I'm saying is it is correct to assign the 2.2 to the missed dose, a correction factor for a missed dose at INL, and I am entirely relying on Matt Smith's information to me, and he is not here today, I apologize for that.

But my understanding from Matt is for INL, which is one of the very unusual sites that is like this, the correction factor

for a neutron actually is applied to missed dose as well as measured dose.

MEMBER MUNN: But why?

CHAIRMAN GRIFFON: Yes, why? Why would INL be so special in this --

MEMBER CLAWSON: Because we are so special.

MR. FARVER: But see, then I go back and I look at your response and it says the tool, however, only applied the 2.2 factor to the measured doses, not the missed doses, as called for in section 6.5.4 of the TBD.

So now I'm really confused.

MR. SIEBERT: Okay, let's back up a second. First, let's talk about the skin doses. The skin doses appropriately applied the 2.2 correction factor to measured and missed dose for the skin cancers, and the whys and wherefores on why it applies to missed, we are going to have to wait until Matt Smith can be here to elucidate that for us. I apologize.

Our response is specifically discussing the complex-wide tool, which is for the bladder, which the complex-wide tool did not apply it to the missed dose, when it should be applied to the missed dose.

We are agreeing there's a problem there.

MEMBER MUNN: And we are going to fix it how?

CHAIRMAN GRIFFON: Did you hear that question?

MR. SIEBERT: I heard that. I can't answer it at the moment.

CHAIRMAN GRIFFON: Okay, okay.

MR. FARVER: So, one of the workbooks was incorrect?

MR. SIEBERT: Well, one of the workbooks, once again as I said, the complex-wide workbook was designed to be used at multiple places, and the -- I would agree it was used incorrectly in this instance because it did not apply that 2.2 factor.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: Or perhaps for any INL cases, right, wouldn't it have been incorrectly used?

MR. FARVER: Well, my understanding is that you would have to go in and add that value or do something --

MR. HINNEFELD: The dose reconstructor as I understand it -- the dose reconstructor has to manipulate what would normally come out of the complex-wide tool in order to apply that 2.2 factor.

MR. FARVER: And in this case --

MR. HINNEFELD: And in this case this dose reconstructor didn't.

MR. FARVER: He didn't do it.

MR. HINNEFELD: Right, yes.

MR. FARVER: So the doses were all -- missed doses were off by a factor of two for the bladder doses, missed neutron doses.

MR. HINNEFELD: Yes.

MR. FARVER: And it wasn't caught

in any other way in the review process.

MEMBER RICHARDSON: And the correction factor -- just let me understand this -- this is a correction factor for response of the neutron dosimeter to certain energies of neutrons or --

MR. HINNEFELD: Do you know off the top of your head Scott?

MR. SIEBERT: I honestly do not because INL is not one of my sites. I apologize.

MEMBER RICHARDSON: In general though, this --

MR. HINNEFELD: I would speculate it is because of the shortcoming of the dosimeters that we have identified, and say that these readings are low by 2.2 so you would have to adjust it.

MEMBER MUNN: That is essentially the question I asked David, and he said -- couldn't answer it until the person who really and truly understands these calculations --

MEMBER RICHARDSON: But the missed dose is an environmental -- this --

MR. HINNEFELD: It's the lower limit of detection of the dosimeter and so if they were -- if they felt like their dosimeter performed in a certain way and it really was half that, it was twice, the dose really it was twice as high, then presumably their detection level is twice as high as well.

DR. ULSH: All right, so, but if you look back at the history of this particular finding, back on April 18th of 2011, we determined exactly what Scott said, I think, that we agree we should have applied this 2.2 and we didn't, and the question that remained was, is this a problem with the tool?

NIOSH wrote and SC&A reviewed the tool and case to determine if it is a case-specific issue or a broader potential issue, and then on -- in December of last year, SC&A reviewed it further and they still believed at that time that it was a workbook

error.

And then we were tasked to look at it further. We have looked at it further here in our response, and at least what this response says is it's not a workbook error, it's a problem with the dose reconstructor.

MR. SIEBERT: No, that is not what the response is saying. The response is saying, at the very beginning, it said, the DR properly entered the 2.2 correction factor into the tool.

And the dose reconstructor did what they were supposed to so. The issue is the tool, being a complex-wide tool, did not apply that to missed dose as well as measured dose, based on the fact that INL is unusual.

DR. ULSH: So are we saying that the problem is the tool or the problem is the dose reconstructor didn't use the tool properly, make the appropriate adjustments?

MR. SIEBERT: I believe the tool -- I believe it would be a tool issue for its

use at INL, would be the problem.

DR. ULSH: So do we need to go back and take corrective action and change the tool?

MR. SIEBERT: I am pursuing that right now to find out if we still use that tool for INL or if it's been replaced and to get a scope of the claims that have been done with this tool previously.

MR. HINNEFELD: So we'll know some more information on this later on.

MEMBER RICHARDSON: The simple thing would be to say INL is like other facilities and -- I mean, I guess this gets back to Wanda's point, well what's so special about -- what isn't special about it?

MR. FARVER: Either that or develop a special, specific tool for INL and their sites.

DR. ULSH: Maybe we have, I don't know, that's what Scott's checking into now. So put that down as our action.

CHAIRMAN GRIFFON: Yes, I got it.

MR. SIEBERT: And before we move forward -- this is Scott -- I have an answer on that tool pop-up thing, because you know, I love to multi-task, I am also playing with that as we are trying to do this.

Yes, when -- and Doug, you are correct -- when you look at the version that was used for the claim, the complex-wide one, and you look at the dose calculations page, and you look at the -- when you hit the button, the radio button, to show the formula, that one divided by 1.6 is shown in all those formulas.

But that is postulated from the earlier dose input portion of the tool, where the dose reconstructor's specifically put in the 1.6 neutron bias factor.

I looked at the clean copy and looked at the pop-up of those, those factors, and it said one over one in the clean copy.

So the pop-up is tied to what's

actually being calculated. The dose reconstructor didn't have to go in and change all those things. They just put in the neutron bias factor as they believed was appropriate at the time, and that's why it kicks out in the pop-up.

So it's -- the clean copy really dose have a default bias factor of one.

MR. FARVER: So in the descriptions in the clean copy, it still says the dosimeter correction factor and the inverse of the bias equals, and then it gives an equation.

In other words, the wording is in the text. It's not just in the equation. So it's not like you could use a macro and just copy the equation into this pop-up.

MR. SIEBERT: Are you talking -- I'm sorry -- are you talking about the pop-up that says external dose calculation description?

MR. FARVER: Yes.

MR. SIEBERT: Okay, yes, it's entirely in there and it's appropriate to be in there, because all it's doing is stating in words what the --

MR. FARVER: Okay.

MR. SIEBERT: description is and it says, correction, well, dose times energy split times unit distribution times correction factor times one over bias. It does not give an indication as to what the bias number should be until you get into the actual calculation.

MR. FARVER: Is it correct to divide by the bias?

MR. SIEBERT: Yes, it would be if the bias was appropriate. In this case, you know, the bias is set as a default of one in the tool, in the clean copy of the tool, so dividing by the bias is the same as dividing by one, saying there is no bias and it cancels out.

MR. FARVER: Okay. So the dose

reconstructor put in a bias of 1.6.

MR. SIEBERT: That is correct, under the -- if you go, I don't know if you are looking at right now, or if you could, but under the dose input sheet, there is a column where the neutron bias is -- specifically can be added in by the dose reconstructor, and they put in a 1.6 all the way across the board for those years, and that's where it's coming from.

MEMBER RICHARDSON: So with a bias factor of 1.6, I mean I am taking this discussion as are -- should you be using the reciprocal of the bias factor, or the bias factor, or to put differently, do you divide the dose by that or do you multiply it by that?

This bias factor is saying that the dosimeter over responded by 60 percent due to its characteristics.

MR. SIEBERT: Correct. That is -- that's what this bias factor would be saying.

Once again, Matt really needs to address this, but there have been times in the past we have had neutron or any type of bias factor that has been determined not to be divided by just, I don't know if it's claimant favorability, it's a Matt thing that we are going to have to get that straightened out as to why it's handled that way at INL.

I can just tell you the tool with the clean version, to put Doug's mind at ease is the fact that the dose reconstructor specifically did enter that factor.

MR. FARVER: Okay. Would we know of any other cases where a dose reconstructor would put a bias number in? I mean, it seems that this could be very easy to occur again.

MR. SIEBERT: I cannot tell you without us actually pulling all the complex-wide tools and looking in those cells. I just can't tell you.

MR. FARVER: Okay.

MR. HINNEFELD: That was our, part

of our follow-up on this that we are going to do later, decide how we are going to go about it, what we are going to look for.

DR. ULSH: All right so we were on 165. 4. Are we done discussing that one or is there more to --

CHAIRMAN GRIFFON: I think we got that one.

MR. FARVER: I think we're done.

CHAIRMAN GRIFFON: Yes.

DR. ULSH: Okay. 165.5, if I look in the resolution column, we are to provide the IREP runs and our response, we provided a file, rather a large file, that contained all of the IREP sheets.

MR. FARVER: This is more of an observation. The original PoC was 45.95 percent. In the file submitted by Brant the PoC was 46.23 percent.

And after correcting the errors, the impact of the findings is now 49.02 percent. So the findings look like the

findings, you know, increased it about by four percent, something like three or four percent, which, you know, I consider that kind of significant, you know, especially in cases that are maybe, say, 48 percent or so. You get an extra three percent in there and it tips it over.

So I don't know where to go from there. It was just kind of an observation, that the difference seemed to be, you know, 10 percent or so.

For this case, yes. What about other cases that INL, where they are using the complex-wide and then they are using the INL workbook for a certain part, and you are still going to have some of the same issues, or you could --

DR. ULSH: Well, there were three cancers in this.

MR. SIEBERT: Which is, I believe this is why we are going to be working with Stu and Brant to determine the scope of the

issue with the tool and move forward from there.

MR. FARVER: That's fine.

DR. ULSH: So are you satisfied with being thrown this one --

MR. FARVER: You know, I guess somewhere we are going to keep one of these open?

CHAIRMAN GRIFFON: Yes, explain that again. You are working with the scope of the issue of the tool. In other words you may not be using this tool anymore? Is that -- or --

MR. HINNEFELD: Well no --

CHAIRMAN GRIFFON: Or how many cases --

MR. HINNEFELD: It's the investigation that these are -- I'm a little at see on this particular finding, but if these are problems with the arithmetic in the tool or the use of the tool, that's what we are going to be investing in, is this tool,

and how it was used at that time.

And we just have to decide, you know, how much we can reasonably do and what we can accomplish, and what we have to do.

But so yes, it's just part of the investigation.

MEMBER MUNN: And as a part of your investigation, we will do these calculations in another manner to make sure that the software is actually giving you the appropriate response that would be achieved mathematically without the software, correct?

MR. HINNEFELD: I don't know.

MEMBER MUNN: Well, that's one of the things that you were, were being concerned about.

MR. FARVER: For this case, we have already identified --

MR. HINNEFELD: We have identified, in this case we have identified issues with how the calculations are set up in the spreadsheet, and so we need to fix those.

MR. FARVER: What's the impact of those calculations.

MR. HINNEFELD: Yes. To those things. And we need to decide, once this is fixed, what's the impact of that on the other cases. These, you know, the spreadsheets are QA'ed when they are introduced, and there are some test runs to say that they are, you know, they are getting the answer they are supposed to get.

So I don't know that this drives us back there because these are -- if -- to me, that is a different issue. If you want to say are these -- is the V&V of these suitable, is it sufficiently strenuous? That's a whole different thing from when we look at the V&V of spreadsheets. We don't look at dose reconstruction.

Okay, for this specific case, what we have to do is fix the issues with, you know, with the spreadsheet, and then once we have got that, then will those fixes look for

other cases that those fixes may have an impact on? So that's what we need to do for this one.

MEMBER MUNN: Right. Right. But I would think --

MEMBER RICHARDSON: But there was also an issue of, this sheet does not work the way it's supposed to for when it's applied to Idaho, right? That was another issue.

MR. HINNEFELD: Well yes, that's -- it's part of the whole business here, if it's applied to Idaho.

MEMBER RICHARDSON: I'm still puzzling over the issue of -- I have always thought that the problem with neutron dosimetry, were under response. There tends to be very little recorded neutron dose.

Dividing recorded neutron dose by 60 percent, just as a starting point, sounds surprising to me. I'm not -- I mean, I guess there are, there's over response sometimes with like thermal neutrons or something, in

some of the old -- is that right?

I -- I'm still having a hard time wrapping my head around why that -- why that factor is -- you're using the inverse of the factor.

MR. HINNEFELD: I, right now, sitting here I don't think any of us can reconstruct why that would happen.

MR. STIVER: I don't recall a case where we found dosimetry reading high like that where it would have to be adjusted down. But that doesn't it mean it's -- it didn't happen.

But certainly, getting back to, earlier you mentioned, you know, the whole idea is V&V, and that I think Brant mentioned earlier, that you might put that in your presentation about the ORAU QA/QC program.

I'm very curious about, you know, the V&V processes and how they go into these tools, and how they're tracked and updated and so forth.

MR. HINNEFELD: So, that would be, then, tracked and updated would be what I would consider version control.

MR. STIVER: Yes, it would be a version control as well as an initial V&V --

MR. HINNEFELD: An initial --

MR. STIVER: And application, and how they actually try to break the tool.

MR. HINNEFELD: All right, we'll put it on the list of things we've got to find out.

DR. ULSH: All right Mark, we have just finished several findings on 165. I'm happy to keep going but it is 3 o'clock.

CHAIRMAN GRIFFON: It is 3 o'clock, yes.

MEMBER RICHARDSON: 166 we can get done.

CHAIRMAN GRIFFON: Is it quick? Yes.

DR. ULSH: All right. Let's see. The latest that we were supposed to do, we

agreed it was a QA issue, we corrected it, verified that all additional doses identified in the case findings were addressed, and whether the outcome was affected.

Our response, and we provided an attached file, was that there was no impact on compensability.

MR. FARVER: I can understand what you did. I just don't understand what was in SC&A's 166 combined file. I --

DR. ULSH: All right. I'm opening that now.

MR. SIEBERT: Doug, I can talk you through that if you want.

MR. FARVER: Talk me down.

MR. SIEBERT: Okay. The clarification that was put in there, I mean, what we really had to do for this one was to ensure that we included any of the errors, reran the case to ensure -- determine if it went over 50 percent with the additional changes.

MR. FARVER: Okay.

MR. SIEBERT: While I was working through that, I realized that there may have been a clarification that hadn't been pointed out very well in one of the findings, 0.6, and I didn't want anybody too think I ignored it, because there is no error in 0.6 and so I did not make any corrections to 0.6.

Point six is the response, the finding and response where there was a plutonium-238 intake that was in the CADW tool that did not go in the IREP tool.

MR. FARVER: Okay.

MR. SIEBERT: Okay? When I dug into that deeply, we determined actually this is where the ORAU and NIOSH QA/QA process worked pretty well. We sent the claim over initially with that additional plutonium-238 overestimate included.

The PoC was between 45 and 52 percent. So NIOSH kicked it back to us to rework, removing that overestimate of

plutonium-238, because we just used the highest sample and assumed a chronic across the board which was a large intake if you recall.

When we reworked the case, the dose reconstructor ran a separate CADW run for the new plutonium-238, did not pull it out of the old one, rather than re-running all the work from the old work, just, all they did was, since it was run at a constant distribution, it was the only thing that was a constant distribution, they pulled it out of the output and replaced it with the new CADW run.

So the plutonium that was in the assessment that you reviewed actually was correct, and the question never was whether the plutonium was done correctly. It was why did the -- why did this large plutonium-238 intake exist in the old CADW run but it's not in the IREP runs.

And so I spent a lot of time

determining that is the reason, it was an initial, older version which was overestimated that we had to redo, based on being between 45 and 52 percent.

MR. FARVER: Now, wouldn't something like that be contained in the comments sheet?

MR. SIEBERT: Not necessarily.

MR. FARVER: Okay.

MR. SIEBERT: I mean, there is -- I mean, it depends on what you're talking about -- there is a NIOSH response -- when NIOSH returned it to us, they did return it to us on a form, stating that they wanted us to remove those overestimates, which is in the file, and we responded saying yes, that's exactly what we did.

It didn't go into the nitty-gritty of exactly how they did that thesis part, and the fact that it's still in the CADW run but not, not in the final output, I don't see as an issue as long as it's done correctly.

MR. FARVER: I agree it's not a problem with being in the CADW, just the concern is for the future, if someone looks at it, they are going to come up with the same issue and I'm thinking, you know, should it be in a comments form, or if it's in a NIOSH form, is that form included with the files that we look at?

MR. SIEBERT: I believe it should be. I can't say for certain because I don't know what NIOSH is reporting to you. But I believe you should be seeing those.

MR. FARVER: Okay, if it's there I missed it.

MR. CALHOUN: Comment sheet are we talking about?

DR. ULSH: It would be the sheet -- when we, when NIOSH sent it back to ORAU saying change this.

MR. CALHOUN: No, we don't see that. That's in the -- that's in the admin record -- it's going to be saved in the K: --

our K: file under DR submitted. That's where you see all of those, for every case that's ever returned.

MR. FARVER: Should there be something in these files that indicates that either that shouldn't be there or we know it's there but this is why we are not including it?

I mean that's why I thought the comment sheet that goes along with the DR would be some place where you could put that in.

MEMBER MUNN: If you're going to keep going back and looking at them --

MEMBER CLAWSON: This has been the whole thing we have said for years back there, showing their work and why they did this, because we have seen it for years.

We looked at the entire thing to find out whether we changed to different -- we went to a different work package. Now we are using this up to date one. This one got sent back and -- it's kind of a thing of show your

work, really, of how you got to this, and why. I think it saves an awful lot.

CHAIRMAN GRIFFON: I'm not sure where to go with that one.

DR. ULSH: I'm not sure either.

MR. HINNEFELD: Yes, this is sort of an oddball, so I don't really -- yes, I don't -- and to be honest with you, I don't really have my hands around exactly what happened, so I don't know where to go farther with this. I mean our -- our comment sheets aren't going to end up in the administrative record because they are comments on a dose reconstruction and it never makes it to the administrative record.

You know, we make comments on dose reconstruction, then it gets fixed, and our comments go to ORAU and they fix it and then the dose reconstruction, the fixed dose reconstruction comes -- that's what goes into the administrative record. So --

MR. STIVER: At that point that's

when -- so an explanatory memo should be put in --

MR. HINNEFELD: Only, really -- not really. I mean, because that's, to us it's not really that important that there be this record of the back and forth between us and ORAU.

What has to be complete is the record, the administrative record should be a complete and accurate record of what went into the dose reconstruction.

So along those lines, it sounds like there should be some sort of explanation. It shouldn't have this sort of confusion in the administrative record of that -- that makes it impossible to get to the dose reconstruction from the information that's there.

It should be a complete and, I want to say complete and accurate record of the decision, and so there should be sufficient information there that you can find

a way through it. I agree with that. I don't know where we go exactly with that, but ORAU, we will have to talk to.

MR. SIEBERT: Well, and I do want to point out that all the numbers that were in the dose reconstruction report matched up with the final intakes and doses that were assigned in the final version.

The only issue was the fact that there was this residual plutonium-238 in a tool that is never used by -- I mean, it was reviewed in this case and the question became, well, why is it there. Oh well, it's not normally an issue, I mean, we included a lot of things that we may do where comparisons where the -- it's not the final version that's actually in there, but we include it for comparison sake.

So I don't really see us explaining every, every change that's going on when we are going with the back and forth with NIOSH as that necessarily being helpful.

MR. HINNEFELD: And in fact, to Scott's point, we have been asked before that if you try something one way, you know, it will be kind of, why don't you do a dose reconstruction this way? Well, we did, and it -- you know, and such and such. They said well, why don't you include that in here.

So now we are including that, and so this kind of -- at some point, you know, we are going to -- you are going to have to make too many decisions about what goes in and what goes out unless you just put it in here --

MR. FARVER: No, I mean, we have a question about just how are you doing, before --

MR. HINNEFELD: Yes, right.

MR. FARVER: So that he used different solubilities and that, and -- and in this case it would have been okay if somewhere there would have been a note saying oh, this is what we would have done, you know.

CHAIRMAN GRIFFON: I think that's

the question, like, an explanation.

MR. FARVER: Yes, okay.

CHAIRMAN GRIFFON: It's the files that are in the directory.

(Simultaneous speakers.)

MR. HINNEFELD: Okay, we'll take it under advisement.

MR. KATZ: If we are going to adjourn early, we should adjourn now. Otherwise it's -- we'll be sitting at the airport for three hours --

CHAIRMAN GRIFFON: Okay.

MR. SIEBERT: This is Scott. So the short answer is that's the explanation as to why there's additional information for that 166. The short answer, which I really should have started with, is that when we made the actual changes that needed to be changed, which was including the K-25 X-rays, it had no impact on compensability.

CHAIRMAN GRIFFON: Alright. I think we are going to wrap it up there. So

the meeting is adjourned.

MR. KATZ: Meeting adjourned. Thank you everyone. Thank you everyone on the line as well. And have a good weekend.

(Whereupon, at 3:11 p.m., the meeting was adjourned.)