The Work Group convened telephonically at 9:00 a.m., Henry Anderson, Chairman, presiding.

PRESENT:

HENRY ANDERSON, Chairman
R. WILLIAM FIELD, Member
DAVID KOTELCHUCK, Member
ALSO PRESENT:

TED KATZ, Designated Federal Official
RYAN ALBA
DAVE ALLEN, DCAS
HANS BEHLING, SC&A
CLARISSA EATON
JOHN MAURO, SC&A
BRENDA PATTERSON
L. MICHAEL RAFKY, HHS
LAVON RUTHERFORD, DCAS
JOHN STIVER, SC&A
WILLIAM THURBER, SC&A
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MR. KATZ: Okay, it's start time, so let's begin with Roll Call. This is the Advisory Board on Radiation and Worker Health, the Uranium Refining AWE Work Group.

Let's begin with roll call and then we'll address other matters. Let me begin with Board Members.

And since we're speaking about three specific sites, United Nuclear, Baker-Perkins and DuPont Deepwater, please speak to conflict of interest as well when you respond to Roll Call, for all the agency-related people.

(Roll call.)

CHAIRMAN ANDERSON: Okay, our plan today, the first order of business on the Agenda is discussion: finalize United Nuclear.

And what I'd like to begin with is if NIOSH can give us an update on the action items we had.
And maybe we can -- I don't know, Dave, if you've had a chance to read through all the materials. I want to welcome Dave Kotelchuck, who's a new member of the committee, and our discussion on this particular topic began before he joined us.

So if you have questions, Dave, please speak up. If you've looked it over and you see some things that you didn't, feel free to ask away as well.

So with that, the first issue that remained open was on the dose reconstruction: when to apply the 50th percentile versus 95th percentile. And, as I recall, this was a separate issue, but the group felt it was more of a -- it was not an SEC-related issue so much as it was for the background Site Profile documents. But if there's been -- if NIOSH could give us an update on that?

MR. RUTHERFORD: Yes, Henry, I could take care of that. This is LaVon Rutherford.
CHAIRMAN ANDERSON: Yes.

MR. RUTHERFORD: As you've mentioned, the discussion was whether the use of the 50th percentile distribution or the 95th percentile of the distribution was more appropriate for the coworker model.

As you probably remember, we are, NIOSH is currently using the 50th percentile, and SC&A felt that the 95th percentile was more appropriate. Their thoughts centered on that when we typically use a coworker model it's for individuals that we feel should have been monitored but were not.

We would normally have some people monitored during the period, you know, typically the higher-exposed individuals. In this case we had a gap period from 1961 through most of 1962. In that period, no one was monitored.

The site had stopped bioassay during that period and ultimately restarted in late of 1962. So if you had an operator and
they only worked 1961, in that period when there was no monitoring, that gap period, and they worked in the higher-exposed areas, the 50th percentile would not be an appropriate intake to apply to the individual for dose reconstruction.

DCAS, we committed to go back and review this issue. We also indicated that we would see if we had any claimants who only worked during the gap period. We did that. Of the existing claimants, none of them solely worked during the gap period.

And this is important. Because if you had individuals that worked on both sides, outside of the gap period, then typically the higher-exposed individuals would have monitoring data, and their monitoring data could be used during the gap period.

However, even though we don't have any claimants that solely worked during the gap period, we did have some further discussions on this matter, and we have
changed our opinion.

And we do feel that the 95th percentile of the distribution is probably more appropriate for the gap period. Specifically for individuals that we would expect to be in the higher exposure areas, like operators. So we will modify the Site Profile for the gap period.

And we'll modify it to indicate that we will use the 95th percentile. And ultimately, we will have to review our existing claims to see if we have claims that will be affected by that.

CHAIRMAN ANDERSON: Okay. Thank you.

MR. RUTHERFORD: I wanted to add another thing on this note. It's not really addressed in the issues on there. But I know it's important to Hans, and it's also something that we had committed to discussing.

Hans had pointed out that he had actually identified some bioassay data that
was taken in 1960. It was a specific assessment if I remember correctly. And Hans had taken those urine bioassay samples and calculated intakes based on them.

And he felt that those intakes would actually -- indicated that they were higher than what we would have applied to our coworker model. And ultimately the question came up, you know, did we use those intake values in our coworker model? Can we recreate Hans' numbers?

And, you know, and ultimately we said we would go back and take a look at that. We have tried to recreate Hans' calculations. And we do not get the same numbers that Hans came up with. However, what we would like to do -- Dr. Hughes, who worked on this mostly for us during the period, she is out right now. But what we would like to do on this issue is to have Lara, Dr. Hughes, get with Hans and review his numbers.

If we see his numbers are correct
and also will verify that those intake values were used in, or that those urine samples were used in our coworker model.

And if we have to make modifications to our coworker model, we'll do that. That's a Site Profile issue that ultimately again, it affects that. But I know that's something we committed to Hans. And I was talking to John Mauro the other day, and I wanted to make sure I got that out.

DR. BEHLING: This is Hans. I did in fact send to NIOSH twice, the methodology and numbers that we used to devise the values that I cited in my review of United Nuclear.

I think the first time around I sent the actual calculations and the calculation runs to David Allen. And I think most recently I updated some dates, so I submitted the same calculations again.

So somebody at NIOSH should have the numbers that I used to derive my IMBA runs. And you can use that to see what, if
anything, you find at fault with my numbers.

MR. RUTHERFORD: Yes. We do actually have your IMBA runs. And you are correct. You did send those over to us. But there are some issues that we had with the calculations that we would really like to discuss with you. And I think it's more of a, you know, what you used where, and how you used it, versus how we would use it.

DR. BEHLING: I mean, let me ask you, you've only made an oblique reference to the fact that your numbers do not necessarily coincide with mine, without telling me how different are your numbers from the ones I posted in my review.

MR. RUTHERFORD: Well our numbers were lower than yours. However, they did bring up similar questions that you had. And that's why we wanted to get back, verify that the urine samples that you had identified were using our coworker model. And also --

DR. BEHLING: Yes. Let me just
be sure. The numbers that I used were not numbers for the coworker. They were unique numbers that were defined by two operators.

These were empirical values that I found in the documents with two operators that I identified as operator AAA and operator BBB. So I'm not saying that they represent the universe of workers. These were numbers of bioassay data for two individuals, specific numbers.

MR. RUTHERFORD: Okay. I thought the point was that we needed to verify that those numbers were used within the coworker model. Either way, if they're urine data we would have used it in the coworker model. We should have used it in the coworker model anyway.

DR. BEHLING: But they would have actually been diluted by virtue of the fact that these two people may have been at the high end of exposed individuals.

MR. RUTHERFORD: That's correct.
DR. MAURO: LaVon, this is John Mauro. The way I understand the issue is this. Here we have real people with real data, during the time period when the bioassay was collected.

MR. RUTHERFORD: Correct.

DR. MAURO: And using that real data for those real people we come up with an intake and a dose. Now in a way they represent people that, you know, you would actually do those people using their real data of course.

But the question was, this is really a test of the adequacy of your coworker model. That's really the question I believe that is on the table.

MR. RUTHERFORD: Right. And that's the way I understood it too, John. It's the question of if you calculate these intakes, and these intakes are actually beyond the intakes that are in your coworker model, then it brings a question to your coworker
DR. MAURO: And now so I wanted --

The end of the question is, now that you're going with the 95th percentile, which of course brings up what the intakes would be in your coworker model, is there parity between these people who represent, I guess, high end people with real data?

And if you were to -- let's say for some strange reason you didn't have the data for these two people, and you used the coworker model instead.

MR. RUTHERFORD: Right.

DR. MAURO: Would you come up with intakes for these people that would be compatible and consistent with what their intakes actually were? It's a way of sort of validating your coworker model, so to speak.

MR. RUTHERFORD: Right. I certainly agree. And I believe that that's exactly where I was coming from, what we needed to do in verifying our numbers versus
Hans' numbers.

Either way the numbers should look like -- if we didn't have data for those individuals and we used the coworker model, they should still be representative --

DR. MAURO: Right.

MR. RUTHERFORD: -- in the coworker model.

DR. MAURO: And the question then becomes -- I understand that when you run these people, these real people, you're coming up with intakes that are different than Hans'. Maybe a little lower.

But I guess my question is, when you run these people, you're doing the work. Do you come up with intakes that would be bounded, or at least comparable to, if you were to actually use the coworker model, now that you're using the 95th percentile? Do you see where I -- notwithstanding any let's say differences we have in the way we ran these people.
MR. RUTHERFORD: Right.

DR. MAURO: But the more fundamental question is, you know, we'll work that out.

MR. RUTHERFORD: Right.

DR. MAURO: But I guess from your perspective you feel that your coworker model now would be bounding for these workers also.

MR. RUTHERFORD: Yes.

DR. MAURO: Good. Thank you.

DR. BEHLING: And again, I just wanted to reemphasize what I said earlier. In Table Number 4 in my write up, we are talking about operator AAA and operator BBB. Two very unique individuals for whom we have bioassay data.

And when I ran the IMBA codes for Type S, I ended up with a value that's 3.4 times higher than the NIOSH value, as I indicated in my write up.

And then I used Type N. The differences between the 50th percentile value...
and what I calculated is a full 15.4 times higher. And those are the numbers that --

If you're going to look to verify my numbers, use the actual bioassay data for those two individuals, not a collective or average value for the coworker model. That's not what I was trying to do here. As John pointed out, these were two --

MR. RUTHERFORD: I understand, Hans. That's exactly what we were looking at doing, exactly.

DR. MAURO: So then where we are now is just a matter of seeing why we're coming up with different intakes. In some places we ran them a bit differently than you did. And we'll work that out.

MR. RUTHERFORD: Yes. And that's all -- And Dr. Hughes is due back very soon. And I think we'll get her right with working with Hans on that. And we'll get that figured out.

CHAIRMAN ANDERSON: And what we'll
do on our committee is, we'll just tab this as an action item. We'll hold off on the Site Profile, not close that out on United Nuclear. So that we can -- next time you can give us an update on this.

MR. RUTHERFORD: Yes. That makes sense to me.

DR. MAURO: The way I see it, the real -- I agree that this is a Site Profile issue. And I think that, Bomber, that your approach with the 95th percentile does satisfy.

But now we have this little, like lingering side issue. Why are we coming up with different numbers? But it's nice to close that loop if we can. I see it as having no bearing, in my opinion, on the SEC related issues.

MR. RUTHERFORD: Okay.

DR. THURBER: This is Bill Thurber, just a question of clarification, LaVon. Are you going to use the 95th
percentile over the entire period, or just over the gap?

MR. RUTHERFORD: No. Over the gap. Are we there?

DR. THURBER: Yes. Then if you're only going to use it over the gap, then the thought that using the 95th percentile might bring the estimated intakes for operators AAA and BBB closer to the coworker model, doesn't hold as much weight.

MR. RUTHERFORD: I see where you're going with that, Bill. But they recognize that what we're saying is the individual prior to -- prior to the gap period we have the higher-exposed individuals were monitored.

Post-gap period the higher-exposed individuals were monitored. It's only during the gap period where the argument that the higher-exposed individuals were --

Well the gap period is the only period where we have indication that no one
was monitored. And therefore, a 95th percentile for the higher-exposed individuals, it makes sense.

DR. THURBER: No. I understand what you're saying. I'm not sure that everyone was clear on that point.

MR. RUTHERFORD: Okay, okay.

DR. MAURO: Yes, Bomber, with regard to the other time periods where you do have data, as always is the case sometimes the data's incomplete. Sometimes you have workers that were not bioassayed when perhaps they should have.

You're going to be using the coworker model in its more classic sense. Whereby, you know, if you have to use a coworker model to sort of fill in gaps for the periods that there are data, but they're usually not complete, you know.

I assume you're using the same coworker model, but you may draw upon the 50th percentile in those cases, as opposed to the
95th percentile.

MR. RUTHERFORD: That's correct.

DR. MAURO: Okay. And the justification would be that the people who, if you did have a monitoring program and you could make an argument for any particular worker, you could decide whether or not this particular worker, that may not have data even though others do during the time period.

But that's a judgement made by NIOSH as to whether it's appropriate to assign the 50th or 95th percentile to that person. I understand that often you use the 50th, because if the person wasn't monitored your general philosophy is, he wasn't monitored because he probably didn't have as high a potential as others. We understand that.

MR. RUTHERFORD: Yes. And I think, you know, during the earlier period, you know, we get a case that comes in that clearly looks like an individual that, you know, was working in a higher-exposed area,
we'd make that judgement.

DR. MAURO: Yes. I think we're philosophically, we're seeing the problem the same way. We don't always see it the same way. But I'm glad we sort of converged. Thank you.

MR. RUTHERFORD: Okay.

CHAIRMAN ANDERSON: Okay. We sort of talked a bit about -- I think we've settled the first 50th, 59th. We now have an action item to get an update on how to conclude this discussion, which I think at some point we'll also report to the larger Board.

Because if this can be used as a validation exercise as well for the use of the coworker model, I think that would be interesting to everyone as well.

Next issue we talked a bit about. And that's the gap period there, '61 to '62. And did we get any further examination or explanation of the air sampling change for the Green Room?
MR. RUTHERFORD: Yes, there's a little -- I'll just give an update. I don't know if they could give really that much more information. But I can tell you what was done.

The second item, as Henry had mentioned, was further examination and explanation of air sampling changes for the Green Room for 1961-'62.

Dr. Field, had noted from a White Paper on air concentration data from the '61 to '62 that there was a drop in data points from 1961 to 1962. And that wasn't only the Green Room, the Red Room was as well.

And, you know, the question was, why was there a drop in data points? And we had speculated at the time that, you know, while it could have been a change in production levels, we're not sure. And, you know, we'll go back and see if we can find enough information to determine what the change was.
If you go back and look at this further. And, you know, we thought, or we still believe that this could have been a change in production levels. However, we could not verify that.

Also we want to point out that, you know, at the end of the 1960 -- or during the '62 period was when they discovered the high airborne levels and the prior exposure levels. And ultimately started the engineering changes in the facility to reduce those concentrations.

And so it could have been -- Just looking at the data points we have in '62, most of the data points in '62 are earlier in the period. So that could be another explanation.

But without having production logs, and without having additional information, we can't verify that. I think the thing to point out is that, you know, our dose reconstruction approach is based on urine data.
And, you know, reconstructing of individual dosage for urine data. I mean, we use their individual urine data or the coworker model. So the air sampling is just not used in our approach.

But it was brought up by Dr. Field. And we did look into it further. We just can't come up with a specific answer for it.

MEMBER FIELD: And I really appreciate you checking it out further. Thanks.

CHAIRMAN ANDERSON: Okay. I appreciate that as well. I think the last open item that we have here is, there was an opportunity to interview an item plant worker to get more information. This was a activity that was specifically requested by the petitioners.

And it's unfortunate, but as everyone knows often getting these released takes some time. And it did so in this case. But we now do have the redacted interview
that everybody should have seen. And, NIOSH, do you want to discuss this and --

MR. RUTHERFORD: Yes.

CHAIRMAN ANDERSON: -- indicate how this may firm some of the issues that we've been discussing?

MR. RUTHERFORD: Yes. I believe the interviewee is on the phone.

CHAIRMAN ANDERSON: Oh.

MR. RUTHERFORD: And if he is --

CHAIRMAN ANDERSON: Oh, go ahead. Thank you.

MR. RUTHERFORD: If he is I want to personally thank him for his time and the information he provided. It was very informative.

Although I was unable to be on the actual call, still we had a very challenging time. The individual had issues. We had trouble getting in touch with him, trouble getting time scheduled.

We were initially told through our
classification people that it needed to be conducted in a very specific area, you know, classified area. And ultimately that changed.

But I wanted to thank him for his perseverance with us in getting this interview done. Because it was a very informative interview.

More detail concerning the time plant operation, the equipment used in the plant, the general layout, the number of workers, different types of workers.

We heard about the potential hazards and the exposure points. We also heard about the personal monitoring, including bioassay and TLDs. It was, again, a very informative issue.

It got into the details of the operation and the clothing worn, a lot of different things besides some of the equipment, different chemicals used, and so on. So as I've mentioned a very informative interview.
And as Henry had mentioned, the interview was provided to the Board Work Group and FDNA. From our perspective, from DCAS's perspective, the interview did not present any new information that would affect our current dose reconstruction approach.

It provided great detail and way more knowledge on the items that we had prior to it. But our current dose reconstruction approach is still appropriate with using the bioassay and the TLDs and the external exposure information that we have. You know, and that's pretty much all I have on that. I'll answer any questions.

CHAIRMAN ANDERSON: Then since we have the interviewee on the phone, keeping in mind security issues here, I hope you got an opportunity to look at the summary, that redacted summary of your interview.

And if you have any comments concerning this -- do you feel it pretty accurately reflects the interview? We know it
went on, and you were a wealth of information. And again, we appreciate your time and willingness to participate in this.

And I would just, on behalf of our committee and Board, thank you. And also I think point out to Board Members and NIOSH the importance of this and his task.

And to get these interviews and get the information on security issues that were discussed redacted from the notes of that to make it public.

So it can take quite a bit of time, but I think it -- From my perspective anyway it was well worth that effort. And there aren't a lot of opportunities on other sites for such interviews. You really need to take advantage of them. Do you have any comments on it?

MR. ALBA: This is Ryan Alba from United Nuclear. I have not so many comments, except the reason we did the interview was basically I was some concerned that the
internal exposure wasn't covered as maybe as it should be. There were several --

And I pointed out several exposure hazards were internal hazards in the plant and around certain equipment. And that's, you know, I had no axe to bear.

Of course I've felt that from listening to your previous session, that there was some lack of information concerning the internal exposure rates in the item plant itself. And that's the reason I did the interview.

And other than the redacted part, which I would rather have seen in there. I think it made the point better. But that can't be helped. But that's the reason I did the interview. And I'm fairly satisfied with the interview, yes.

CHAIRMAN ANDERSON: Well good. Thank you. We always like that kind of feedback of having the opportunity with you on the phone. That makes it more direct. NIOSH,
any other thoughts on the internal exposure issue that he raises?

MR. RUTHERFORD: No. And he did, I mean, he did point out some exposure areas that we had not initially recognized. And as I mentioned, the detail that we got in that interview was definitely way more detail than we had on the item plant.

We were actually somewhat surprised we were able to get the redacted information we got. But just having the bioassay information that we have, it allowed us to reconstruct that internal dose.

CHAIRMAN ANDERSON: Okay. Because I seem to recall you saying that. But the key will be, can we identify the individuals who in fact may have had that exposure, so it can be included in their reconstruction?

MR. RUTHERFORD: Well we recognize that the individual bioassays for those individuals will take care of that.

CHAIRMAN ANDERSON: Okay. Thank
you. Bill or Dave, do you have any further questions?

MEMBER FIELD: Yes, this is Bill. I'm fine, thank you.

CHAIRMAN ANDERSON: Dave? Dave, if you're there you may be on mute.

MEMBER KOTELCHUCK: I may have been. Anyhow, I don't have any further questions, and wanted to thank the plant worker who gave the interview.

And it was very useful to me certainly as a new Board Member, committee member, to understand what was going on. So thanks a lot.

CHAIRMAN ANDERSON: Okay. I think we've had SC&A. Do you have any other questions of issues you think we need to discuss before we move to public comment?

DR. MAURO: This is John. No, I don't.

CHAIRMAN ANDERSON: Okay. We have a number of public folks on. Do you have
additional comments or questions you'd like to raise?

MS. EATON: First, can you hear me?

CHAIRMAN ANDERSON: Yes.

MS. EATON: I just want to personally thank Hans for all your work that you're doing. I have a few mixed emotions. You say that he was a wealth of information, but yet nothing that can be useful as part of this discovery process.

But, you know, the time where the '62 period that was discovered with the higher concentrations, you know that there was higher concentrations, but you can't verify it because there was a lack of monitoring records.

I'm real skeptical about this whole process at this point. I know there's a lot of differences and analysis between NIOSH and SC&A, and I'm not trying to step on anybody's toes.

But it is somewhat confusing to the
lay person when, you know, we have data but we don't. We don't have data, but this is what we feel. Everything just seems to be out of balance. And that's all I have to say. Thank you.

COURT REPORTER: This is the Court Reporter. I wasn't sure who was speaking just now. Was it Clarissa or Brenda, ma'am.

MS. EATON: Clarissa Eaton, ma'am.

Thank you.

COURT REPORTER: Thank you.

CHAIRMAN ANDERSON: I can appreciate your, that it is sometimes confusing. And the issue here that we really need to, or NIOSH comfortably can address, is when there is a lack of information, can we bound those exposures using coworkers or other pre-existing data.

So virtually all these sites have some kind of missing data. And the challenge is how do we come up with a reasonable approach to estimating what the exposures may
have been, once we've identified that in fact, where these claims of exposures --

And you heard that the decision here was to use the upper 95th percentile as part of that estimate, where in other circumstances we would have used the 50th percentile, which is half the people may have been above and half below.

But in this particular instance, because of the information and the unusual exposure circumstances that may have occurred, we're using a much higher --

We're having an estimate that's towards the higher end of the possible exposures. So I don't know. NIOSH do you have any other comments you'd like to make to address these issues?

MR. RUTHERFORD: No. I mean, I think you said it. I think that, you know, the period of concern, you know, the end -- No, I think he really covered it. And I don't think any additional information from me can
CHAIRMAN ANDERSON: Okay. With that I think we've pretty well come to agreement. I don't think we need to go through the exposure, the matrix that we closed out.

We will ask SC&A to maybe put together the presentation for me, for the Board out in Denver. So we will have a recap of all that's gone on over the last couple of years related to this site. So we'll have a close out presentation there.

But I would entertain again the SEC -- I don't have the exact terms here, but NIOSH, can you describe exactly what was the certified group?

MR. RUTHERFORD: Yes. It was the Class evaluated by NIOSH was all employees that worked in any year the United Nuclear Corporation hematite site from January 1, 1958 through December 31, 1973. And the residual period January 1, 1974 through July 31st,
2006.

CHAIRMAN ANDERSON: Okay. And I think as we early on learned, there really is quite a bit of data available that NIOSH felt they could use to do the dose reconstruction.

And where we have focused is this gap period on whether or not it was feasible to use the coworker model during that '61 to '62 period, and then again from that coworker model, what values would we use. And I think we've resolved those issues.

So either I can do it, I guess. Or either Bill or, probably Bill, since you've been on it longer. If you have a motion for the committee as to what recommendation we'd like to bring to the Board out in Denver, please make such a motion.

MR. RUTHERFORD: He may be muted.

CHAIRMAN ANDERSON: Bill, are you there?

MR. KATZ: Bill, are you on the line?
MEMBER FIELD: Yes. On mute, sorry.

CHAIRMAN ANDERSON: That's okay.

MEMBER FIELD: You're asking, you know, what --

CHAIRMAN ANDERSON: Well we need a motion as to do we accept NIOSH's conclusion to deny the SEC. Because they feel they can do the dose reconstruction for individuals that may have been exposed during the petition periods.

MEMBER FIELD: No. Right now I feel that I do agree with that. I think they can do the dose reconstruction. I am a little concerned though from the comments we heard today about the redacted information.

It's always hard to know, you know, what role that may play going into such decision making. I guess we have no, you know, no other choice than not be available to see that information, is my understanding. Is that correct?
MR. RUTHERFORD: Well actually I think that there's probably a way to get a Q-cleared person from the Board that could probably get in to see that information.

But, you know, the only thing I'm going to say on that Bill, because I don't want to lead anybody anywhere on that. Because I think you got to see it for yourself, is the current bioassay data we have is going to address the internal scope.

MEMBER KOTELCHUCK: I'm not -- This is Dave Kotelchuck. I'm not clear where the redacted information is. I read the reports that were on the website. But precisely where does that come in, the redacted information?

MR. RUTHERFORD: Well what happens is, we did the interview. The interview was sent to the Department of Energy. Department of Energy, because it was a Navy, you know, they produced fuel for the U.S. Navy.

It was submitted to DoD and they
were the, they're the ultimate group that make the final determination on the interview, the redaction.

MEMBER KOTELCHUCK: Ah, ha. Okay. All right. Thanks.

DR. MAURO: Henry, this is John Mauro. I understand that you might be moving forward with the recommendation. And the only suggestion I would have is, since the calculations that Hans did, and that Lara Hughes did, represent one way in which you could validate that 95th percentile that was selected for the coworker model for this gap period.

Certainly it's, you know, it's always a weight of evidence. And if you could show that, yes, we picked some pretty high end people where we do have data. And even for them the coworker model would work, you know, we have real data.

So I think the degree to which we could resolve the differences between Hans'
calculations and Lara's would be very helpful to the Work Group and the Board. Because it would be one more argument that, you know, could made why there's a degree of confidence that the coworker model is, in fact, plausible and bounding.

CHAIRMAN ANDERSON: Well do you think we can resolve this in the next two weeks? And if we -- I guess what I'd like to do, I mean, we have postponed this a number of times. And I guess I would like to -- I know the petitioners are frustrated by the length of time and our concerns. But I think we do need to draw this, bring this to a close. And I think we need to make this presentation to the Board.

If part of that discussion could be Hans and NIOSH -- so we could answer what you said there. If it seems to be appropriate, or if there seems to be some concern that the 95th wasn't covered in this period.
And, you know, the whole Board would be hearing that. And that may make some Board Members change how they might view approval of NIOSH's position on the SEC.

MR. RUTHERFORD: I'd like to say something. You know, this is a -- we've already discussed it. This is a Site Profile issue. I mean, this is not an issue concerning the SEC.

And, you know, the data is there. Whether we end up using Hans' data, or we end up using our data, either one, it's there. That data's there.

It's not going to change that decision of, you know, it's a Site Profile issue. It does not affect the SEC. So I don't see where that should be a hold up in moving forward.

MEMBER KOTELCHUCK: Dave Kotelchuck. I'm not so much worried that we will change our vote. Some people may. But that's not the issue. I think the issue --
I'm a new Board Member. It's clarity. I wasn't clear about the redacted information.

Frankly, in the next two weeks I'll look a little more carefully to try and understand how that played a role. And also look this over. So it is, if it can be done in the next couple of weeks it would help provide clarity so that we can act on it.

MR. RUTHERFORD: Dave, I wasn't talking about the redacted portion of the interview. I have no problem -- I understand that issue there. And I understand the --

CHAIRMAN ANDERSON: So the coworker model really was the issue.

MEMBER KOTELCHUCK: Okay.

CHAIRMAN ANDERSON: Is the use of a coworker model in this particular facility, you know, appropriate?

MEMBER KOTELCHUCK: Yes.

CHAIRMAN ANDERSON: Because we don't have measurements through -- all the other periods we have measurements. Dose
reconstructions can be done. The main concern here is there were no measurements during this '61, '62 period.

There may have been some somewhat unusual exposures. There is some coworker data. And, you know, our policies have been in such instances we look to the next step down for dose reconstruction, is to use the coworkers.

We call it a coworker model. But as Bomber's pointed out it's the data from coworkers that then can come up with a dose estimate, based not on the individual, but the coworkers.

MEMBER KOTELCHUCK: Okay. So that we will be able to make a decision either way. I don't know how 50 to 95 percent will change the results. But what you're saying is that --

CHAIRMAN ANDERSON: It just provides a broader balance.

MEMBER KOTELCHUCK: Yes.
CHAIRMAN ANDERSON: Where it's more likely that exposures were unlikely to be over that. And, you know --

MEMBER KOTELCHUCK: Right. So we would be, if we were to pass this, or if we were to make this recommendation, then we would simply say to them go ahead with the change and we that will then determine the decisions on the compensation.

CHAIRMAN ANDERSON: Yes.

MEMBER KOTELCHUCK: Yes. I'm comfortable with that.

MS. EATON: Can I ask a question?

CHAIRMAN ANDERSON: Sure. Go ahead.

MS. EATON: If you're only using data from two employees, can I ask you how many claimants have come forward, versus how many employees were there at the time that you know of? Because we know a lot of records are missing.

But I'm unsure about the fact that
you're only using two workers out of many years of production. And the most hottest period is missing data. Then we add the fact that, you know, there was a owner who was, you know, considered unreliable.

You know, there's so many -- It just seems like there's so many things working against these workers when it comes to this dose reconstruction. I mean, we all know the site, to this day, is still contaminated.

It's left the site. And I'm not talking about radioactive particles. Although I'm sure there was in the air and the dumping processes that went on there, according to the Department of Natural Resources. But, you know, the housekeeping there was next to zero.

And it was so bad that it left the site and nobody even knew, except, you know, the residents around the plant whose wells ended up contaminated. You know, it's very obvious that the people in charge were not taking charge.
And then when we start talking about the dose reconstruction, you're basing all this data off of two workers. But, you know, what's our other choice, you know? I'm not even sure half the workers even know about this program. They're probably dead and gone by now. But the whole thing is just really sketchy to me. I'm sorry, that's my opinion.

CHAIRMAN ANDERSON: LaVon.

MR. RUTHERFORD: Yes. I'd like to clarify a couple of things here.

CHAIRMAN ANDERSON: Go ahead, LaVon.

MR. RUTHERFORD: Yes. We're not basing anything on the two workers. The discussion that was on the two workers that we were discussing earlier were two specific workers that Hans had pulled out, out of a number of employees that we had personal monitoring data.

If you look back in the initial
Evaluation Report, the initial Evaluation Report identified urine samples per year, the number of samples per year all the way beginning back in 1958. We have urine data on a large portion of the population at the site.

So the only thing the two -- The ones that, there was actually a specific pool that Hans had pulled from of urine data. These were a group of individuals that were considered higher-exposed individuals.

And the discussion was to possibly use those as a validation point for our coworker model. So I don't know if we misspoke, if it wasn't very clear how we spoke.

But we definitely have way more data than for individuals than just two. There's a large percentage actually of data for individuals.

MS. EATON: And who provided this data?

MR. RUTHERFORD: All of this --
Who provided the data?

MS. EATON: Yes.

MR. RUTHERFORD: It was actually --

It was provided from the site. And I know that, Clarissa, you've had issues with that.

MS. EATON: Are you referring to Westinghouse?

MR. RUTHERFORD: I believe it was at Westinghouse who initially withheld the information, and then ultimately they gave us the information.

MS. EATON: Are you asking me?

MR. RUTHERFORD: No. I believe that Westinghouse was the name of the company. I believe, yes, you're right.

MS. EATON: Okay. And is everybody aware Westinghouse is in a lot of trouble in other states like South Carolina, for falsifying documents? Is everybody aware of that?

MEMBER KOTELCHUCK: Dave Kotelchuck. I was not aware of that. I'm not
surprised. But I was not aware of that. But we cannot as a Board act on, without some sense of charges in this case. And falsification in this case.

MS. EATON: I understand that. But also, they withheld that information. That was another choice. Like it was a choice to quit monitoring these workers.

MEMBER KOTELCHUCK: Yes.

MS. EATON: These are all corporate decisions.

MEMBER KOTELCHUCK: True.

MS. EATON: Corporate decisions which, you know, are really the ones who should be in trouble for not doing what they should have done.

MEMBER KOTELCHUCK: But according to the reports that we did get the Westinghouse information for this plant. Even though they held it back. Is that not correct? Did I not hear that.

MR. RUTHERFORD: No. That is
correct.

MS. EATON: They did withhold it.

MEMBER KOTELCHUCK: They withheld it, but then they released it, after I assume some further requests and pressure.

MR. RUTHERFORD: Yes.

MEMBER KOTELCHUCK: Yes.

CHAIRMAN ANDERSON: Okay. I guess I'll make the motion then that, as far as our presentation -- or I'll ask for a vote from the committee here that we accept NIOSH's conclusion that they can do dose reconstruction for the SEC proposed period.

And therefore, we would accept their decision to deny the SEC. And then we'll make a presentation to the Board. And if we can have further information on kind of a secondary issue of looking at the coworker model, we can do that as well. But that would be the motion I would make. And that --

MEMBER KOTELCHUCK: Okay.

MR. ALBA: Can I make a comment,
please?

CHAIRMAN ANDERSON: Sure.

MR. ALBA: Before you do that, I was reviewing my -- this is Ryan Alba. I was reviewing my redacted interview. And there was a mistake on it, I feel. It says other exposure hazards.

It says, while the interviewee was at the site where an incident involving a spill of thorium at the pellet plant. However, the interviewee was not involved in the incident. We all -- That's not true.

The people from the item plant and myself did go work in the pellet plant during the thorium incidence, when they were using thorium there, when we were down. So just to make a blank statement that anybody that worked in the item plant was not exposed to the thorium was not true.

MEMBER KOTELCHUCK: Okay.

MR. ALBA: I didn't mean it that way. If whoever took the notes put it that
way, but that's not true.

MEMBER KOTELCHUCK: Okay.

MR. ALBA: So the operators and the technicians who were in the item plant at the time of the thorium experiment, basically is what it was, when they made the thorium pellets. We were involved off and on in the pellet plant with that.

And I had said in my interview where the operators were rotated in and out of the item plant. Well they may go to the pellet plant and work for a couple of weeks while we were doing something else in the item plant.

Then when we started production back in the item plant, they came back to the item plant. They were rotated in and out. The technicians stayed in the item plant except for when we had down time. And one of those times we did go and assist them in the pellet plant during the thorium operation.

MS. EATON: Okay.
MR. ALBA: While I don't know if that makes a difference as far as exposures or what -- but anyway, I think you need that information.

MEMBER KOTELCHUCK: Well that is helpful. And that should -- it seems to me that NIOSH shouldn't, and SC&A people have to look at that, and see if that does not affect it. But for the resolution itself that we go ahead with the dose reconstruction --

MR. ALBA: I understand.

MEMBER KOTELCHUCK: That would not affect that. It would affect the details of the dose reconstruction --

MR. ALBA: Right, that's true. But I didn't want that point to go --

MEMBER KOTELCHUCK: Absolutely. And I think this needs to be put down by the NIOSH folks to look into and reevaluate.

MR. ALBA: Okay.

MEMBER KOTELCHUCK: But in terms of the resolution, Henry, I'm glad to second the
resolution that you put forward. Dave Kotelchuck.

CHAIRMAN ANDERSON: Thanks. So Ted, you want to do a roll call vote?

MEMBER FIELD: Henry, this is Bill Field. I just had a question for the interviewee that was just talking. I know you can't go into security issues, obviously.

But it was my impression that when you first spoke, you had indicated that you thought the information that was redacted may provide additional insights as far as the, I guess the validity of the appropriateness for an SEC. Is that correct?

MR. ALBA: Yes. The redacted information I felt was necessary to give you the whole concept of what methods were used, what chemicals were used and what the conditions were in certain areas of the plant during operations, and how that operation was performed.

Therefore, you could make an
intelligent decision to see was there a bigger
dust factor here? You know, and what areas
were unprotected by air sampling, for example
around the furnaces I noted. I felt that that
would give them a concept of the whole plant.
And with the chemicals and everything we used.

MEMBER FIELD: I see. I appreciate
that.

MR. ALBA: And it also had the
enrichment in various details --

MEMBER FIELD: I understand.

MR. ALBA: -- that of course they
redacted.

MEMBER FIELD: Right. LaVon, given
this information, you know, from your
perspective is there any information here that
may affect, you know, the decision from your
perspective?

MR. RUTHERFORD: Yes. From my
perspective -- And I know the information
that was there.

MEMBER FIELD: Right.
MR. RUTHERFORD: And I am cleared. And from my perspective it would not change.

It is the -- because of what the exact concerns are, and we've got that covered. So from my perspective it would not change.

MEMBER FIELD: Okay. That answers my question. Thank you.

MS. EATON: I have another question. Clarissa Eaton.

MR. KATZ: No, excuse me. Just as a matter of course. We're in the middle of a motion. And this is not the time and place --

MS. EATON: Oh, okay. I'm sorry.

MR. KATZ: -- for more public comment at this point. But surely we can complete the motion on the table. It's been seconded. And then you just need, Bill Field, you need to either register your position on it. And that would complete the motion.

MEMBER FIELD: Yes. I'm in agreement.

MEMBER FIELD: Okay. That means
everyone's in agreement and the motion passes.

MR. KATZ: Okay. You can go ahead now Clarissa if you want, you have something else to say, by all means.

MS. EATON: Was the item plant the hottest department at the whole site?

MR. RUTHERFORD: It was, from the monitoring data if was one of the hottest areas. The Red Room and the Green Room also had very high levels.

MS. EATON: Ryan, are you in agreement with that?

MR. RUTHERFORD: And I want to say, at different times. Because there's data that, you know, in other areas of the plant you would have high exposure points too. It's just at different times.

MS. EATON: Well my question is, of the data that you have, is it during and at the location of the hot spots? Or are we just generally generalizing the data from a site wide perspective? Or, you know, my question
is, is how much of the data is in the most
dangerous departments?

MR. RUTHERFORD: Well I mean,
there's data for the Red Room, the Green Room.
There's data for Blue Room. There's data for
all over the plant.

MS. EATON: But the load bearing
data, what you feel is the weighted, the most
weighted data to arrive at this decision.

MR. RUTHERFORD: Yes. I understand
where you're coming from. And the weight
bearing data is the urine bioassay data. And
we have that for all over the plant. And it
still -- That doesn't, you know, I mean, that
would give us our answers.

MS. EATON: But were those workers
in --

MR. RUTHERFORD: Yes. We have
workers in the item plant, workers that worked
in the Red Room. We have workers from all
over the plant.

MS. EATON: Thank you.
MS. PATTERSON: Excuse me. This is Brenda Patterson. And I know this is at the end of your conference and everything. But can I bring something a little personal to this? It has just taken me a little bit --

CHAIRMAN ANDERSON: Sure.

MS. PATTERSON: -- to be able to speak. Four weeks ago, my husband died of liver cancer. And he had also had bladder cancer. Had his bladder removed, his prostate removed.

And he lived with that sad situation for like, seven years. And this cancer of the liver was a primary cancer, didn't have anything to do with the other one. He worked at United Nuclear. He was a lab technician. He worked with the high enriched uranium.

And the bioassays, he didn't have all the bioassays that they're saying was there. And he had given you all the names of two people who said they would speak up for
him, who took care of that situation of collecting the bioassays.

And they were never contacted to speak to or anything. I will not give up on this. Although he has been turned down twice.

And I want to tell you, you know, people are hurting that I don't think should have been turned down. And that's all I have to say.

I appreciate, you know, the things that you're going through and trying to do. But United Nuclear did not have a lot of safety measures, I know, as far as the lab was concerned. So I just wanted to say that much. thank you.

CHAIRMAN ANDERSON: Well thank you for speaking up. We understand this is difficult. And I also just want to remind all of the claimants that while this is a Work Group and we're moving this forward, this will be presented to the full Board.

And you'll have another opportunity
there to speak before there is a final vote on
this. And we'll go through the -- it's often,
for those of you who've struggled with going
through the minutes from our various Work
Group meetings over the time.

We will try to have a very succinct
presentation of what has transpired up until
this point, and what the issues are that --
We've had smaller issues they talked about,
like that two worker thing. That can be
confusing as it relates to the overall
database that's available.

We of course can't get into the
appropriateness of the actions of the actions
by the company. But having the measurements
really helps us understand what the actual
exposures were, and use that to do the dose
reconstructions.

And unfortunately the way the
program is set up, criteria for making an
award to a claimant is pretty proscribed. So
we understand, Brenda, your issue with having
been turned down.

But our job is to see that the process that was used is appropriate. And I guess that if there's a doubt on exposures to give our best estimate.

So I guess in conclusion, that I don't know if someone can put together a set of slides. I guess SC&A, as our contractor, John or Hans, one of you put together a summary for me to make presentations to the Board would be very helpful.

MS. EATON: Can I ask one more question?

CHAIRMAN ANDERSON: Okay. last question.

MS. EATON: Thank you.

CHAIRMAN ANDERSON: Sure.

MS. EATON: Just for the record, how long was it before Westinghouse decided to turn over that information?

MR. RUTHERFORD: Clarissa, this is LaVon. You know, I can't give you exact dates
off hand. I mean, I can go back and look at the record. But I can remember, since I was working on this one early on.

It seemed like it was about a five month, a four or five month period that we requested the information, and had been told that it would -- the information was not, they couldn't give us the information because of a lawsuit, if I remember correctly.

And then ultimately after our General Counsel and their General Counsel conversed back and forth, it was released to us. And if I remember, it was released to us, it was about five months.

Ms. Eaton: I was thinking it was a couple of years.

Mr. Rutherford: Well honestly, you know, Clarissa like I said, you know, I'm going off the top of my head. And so I may be, you know, I may be wrong. I know that there was a --

Let's put it this way. That there
was definitely a five month period after your petition went in. And there was a period of where there was more of a pressure to get the information from them.

And so that may be where I'm thinking of it. And it may have actually been longer that we were requesting it. I'm not totally for sure.

MS. EATON: Okay. Well whether it be five months, two years, I can bake a cake in that amount of time and tell you how I want it to taste. It just makes us --

I don't even understand how that's legal. This is a federally legislated program. And I don't understand how any, whether it be the litigation, or whatever they got going on.

I don't see where they have the power and authority to withhold any information. There should be consequences for that. I sent Larry Elliott a letter. I asked him to respond in writing about that.
MR. KATZ: Excuse me.

MS. EATON: Why is the guilty, the potentially responsible parties --

MR. KATZ: Excuse me.

MS. EATON: -- why do they have that kind of power to withhold any information in a federally legislated program. I don't understand that.

MR. KATZ: Okay. Excuse me, Clarissa. I understand your angst about that. But that's really not, this is not the venue for that kind of dialogue or discussion.

I mean, you're welcome to inquire about that legal matter with the folks at NIOSH. But this really isn't for the Work Group discussion. Thank you.

CHAIRMAN ANDERSON: Okay. With that, that will close out our discussion on United Nuclear. Let's move on to Baker-Perkins. And that's a Site Profile review closeout discussion. So where do we stand?

MR. KATZ: So right. So just to
remind you, Andy, you were prepared actually
to have your close out presentation in June.
But we didn't do it in June at the Board
meeting. So September's coming up.

And really this is just an
opportunity for you to speak with SC&A, DCAS
or whatever. And get material together so
that you'd be ready to present. Because the
Work Group has done all the work of reviewing
that TBD.

CHAIRMAN ANDERSON: Right. And I
think we had the matrix and we came to
conclusion on all of the issues, except one,
or whoever is handling any part of Baker-
Perkins.

DR. MAURO: Yes. This is John
Mauro. Yes. I went through the transcript
from our February 14th meeting to confirm that
yes, we have -- there was a process on this
Baker-Perkins Site Profile.

And if you recall it was just I
believe it was a five day period where there
were certain activities. And we had some concerns about the original one.

And then there was responses to all of our concerns, which were quite detailed. So yes, we are in a position -- we can say now that we concur with all of the answers to the questions.

In other words, the questions we had originally, that there was a response provided. And we reviewed those responses. And we concur that those responses --

The bottom line was, in the responses there was an amazing amount of fine detailed information regarding what took place in those five day period, with lots of, a level of granularity you don't often see. And it resolved all our issues.

So yes, the answer to your question, we could certainly also prepare slides. So it sounds like you'd like us to have slides for United Nuclear for you. And also somehow summarize what transpired to get
us to where we are on Baker-Perkins.

CHAIRMAN ANDERSON: Great.

DR. MAURO: Very good. We'll --

CHAIRMAN ANDERSON: Bill or Dave, do you have any questions? It's a little unfair, Dave, we're near the end on a couple of these issues and you're just getting started with them. But if you have questions --

MEMBER KOTELCHUCK: No, I don't have any questions. This came before I was on the committee. So I wasn't part of that discussion. But that's fine.

CHAIRMAN ANDERSON: Good. So I don't think we need a motion on that. We're just going to present our findings. Is that correct?

MR. KATZ: That's correct, Andy. You already had a motion to present --

CHAIRMAN ANDERSON: Oh, I thought we'd already moved it forward, or we just ran out of time.
MR. KATZ: You did. You did. So then John Stiver or John Mauro, just let's aim for having these presentations to Andy if possible by -- I would just say Wednesday, close of business if possible, or Thursday early. So that we have time. Because these will then have to be PA-cleared and posted for the public and so on.

DR. MAURO: Ted, yes. That gives us a -- we'll work on that and get that to you certainly by close of business day on Wednesday.

MR. KATZ: Okay. That's great if you can do that. Thank you.

CHAIRMAN ANDERSON: Okay, great. So then our last issue is DuPont Deepwater. And that's really just again, it's a Site Profile, but it's early on in the process. I think, John, you put together a matrix. Dave, I don't know if anyone has talked to you, or you --

MEMBER KOTELCHUCK: I have the --
Can you hear me?

CHAIRMAN ANDERSON: Yes.

MEMBER KOTELCHUCK: I have the site matrix and I've looked it over what is on site, what is on the website. But nobody has talked to me specifically during the additional counseling on this. But I'll follow along.

CHAIRMAN ANDERSON: Okay. Well kind of the -- I guess, do we need to task SC&A to fill out the matrix? I still remember if we have a --

MR. KATZ: Andy?

CHAIRMAN ANDERSON: Do we have a review paper from you, John?

DR. MAURO: Yes. Maybe I can help out a little bit historically. Again, going back to the transcript in February. At that meeting we did present -- you do have our report.

We have a Site Profile review that was delivered on August, 2011. And then there
was a matrix with the six or seven findings submitted. That was before. But it was around for a reason.

At the time we submitted the matrix for the February meeting. And at the meeting, you know, we pointed out, yes, we had a number of findings. I think there were six or seven. I actually have the report in front of me. And I believe you have the actual matrix. We re-sent it.

CHAIRMAN ANDERSON: Yes.

DR. MAURO: So you should have that in front of you. So those are our findings. And of course associated with each one of the findings is a little story that's written up in our report.

And at the last meeting, I believe the way we left it was that NIOSH would try to respond to each of these findings. And I don't know to the extent to which they may have had to look at those findings in our report. And for today, where we could talk a
little bit about them.

And I think that's where we are. We're at the point where quite frankly the ball is in NIOSH's court to address each of these findings associated with that, you know, our work.

CHAIRMAN ANDERSON: Okay. Now we're up to speed. I've got three folders full of materials here. And I focused most on United Nuclear. So LaVon, where do we stand on your responses?

MR. ALLEN: Henry, this is Dave Allen.

CHAIRMAN ANDERSON: Dave. Okay, it's Dave's lead then. Take it away.

MR. ALLEN: Tag teaming here today. I'm ready to discuss these issues if you want to do that. Some of this is a little mathematical.

I didn't know if you wanted to discuss this face to face or in a conference call, or if you wanted an actual written write
up. But I didn't want to just put it into the
matrix that came this week.

Because, you know, it's more than a
paragraph answer for many of these. So did
you want to just go through one by one and see
where we stand?

CHAIRMAN ANDERSON: Yes. I think
we've got some time. If we could do that it
would be helpful. I think it would also be
helpful to, you know, get it written down.

MR. ALLEN: Okay. How about we go
through one by one.

CHAIRMAN ANDERSON: Let's go
through and see are there -- I mean, if
you've resolved them all, SC&A can comment on
that on the phone. If not then let's use our
regular process of you kind of write it down,
and then SC&A can take a look at it.

And we may need to either have
another call or have a meeting to do face to
face if there's disagreements that we have to
spend more time focusing on.
MR. ALLEN: Well that's kind of what I was hoping. Because I thought it was completely closed out.

CHAIRMAN ANDERSON: Well that's what I -- Not knowing what you're going to say, I was hoping we could get a bit closer to that.

MR. ALLEN: Okay. Would you like me to start then.

CHAIRMAN ANDERSON: Go ahead.

MR. ALLEN: Okay. Finding Number 1 from SC&A was -- it essentially said the Site Profile should discuss the degree to which the 1944, 1945 air data applies to 1942 and 1943.

And the first part of that is essentially that 1942 was construction as far as the radiological work goes. This site also did some chemical work that started earlier. But the plants for the radiological work were constructed in '42 and '43.

And they started operating at
different time periods throughout 1943. So we're really looking at more like, you know, a year here, 1943 where you don't have the data. That essentially is a start up time frame for this operation.

And I know there doesn't appear to be any data for the actual start up. But there doesn't appear to be any changes that occurred either.

And typically a start up, at least early stages of start up is a slow process. And you don't get quite as much airborne as when you get going good.

The exception to that is if the mitigating factors you put into effect don't work very well, and you have to change something, like some different ventilation or something to that effect.

But I think based on the data we've seen, 1944 and 1945, they're relatively high air samples. So it doesn't appear as though there was any, certainly no effective
mitigation that was put into effect, you know, sometime between startup and '44.

CHAIRMAN ANDERSON: Okay.

MR. ALLEN: And I do agree with SC&A, the --

MEMBER KOTELCHUCK: Dave Kotelchuck. Just to ask a question about that. What was the type of, what sort of detection devices?

Were you using air sampling on some sort of filter and then measuring the radiation dose on that? I wondered what people did back in '44 and 45 to measure radiation exposure.

MR. ALLEN: I do believe that is what they were using. But in all honesty I couldn't tell you the exact. It was air sample data, yes. And I could not tell you off the top of my head the exact method they were using at that point.

MEMBER KOTELCHUCK: I just wondered. Because '44 and '45 were, I'm not
sure what our level of technology was then. It's changed so much since World War II that I was just curious as to what kind of radiation detection devices were used. And obviously there's question, I mean, were they very sensitive? Were they appropriately sensitive?

MR. ALLEN: Well I know they were definitely -- I don't know the type of sampling that occurred. I'm pretty sure I can find that. But off the top of my head I don't know that. They were sent off site to analyze.

DR. MAURO: This is John Mauro. I can help a little bit. I have the report we wrote up. And it usually has some introductory material that sort of summarizes the kind of data that was available.

And what these were, they were pulling air particulate samples. And they were measuring -- they weren't measuring radioactivity, they were measuring micrograms
per cubic meter.

MEMBER KOTELCHUCK: Aha.

DR. MAURO: Okay. So and they did an analysis of the micrograms of uranium per cubic meter. And then they convert that to activity, dpm per cubic meter. I'm assuming natural uranium.

MEMBER KOTELCHUCK: Okay.

DR. MAURO: Okay. So that's a pretty straightforward process.

MEMBER KOTELCHUCK: It is.

DR. MAURO: I'm sorry, go ahead.

MEMBER KOTELCHUCK: No, no. It is.

That's right.

DR. MAURO: Yes, and that was, and they were doing that. And there was a point in time when they would do gross alpha counts. But this might have been before that. But we see this often, where they look at the mass.

MEMBER KOTELCHUCK: Right.

DR. MAURO: And then they have a little more data. They actually had collected
252 samples  And they were actually in a hard
copy log sheets.  And so they have these data.

    And so these data, these air
samples were collected and we plotted them.
We plotted the data on a log to see if it
followed a nice log uniform, or log normal
distribution.

    Because it's often nice when you
see that.  Because that means you have the
sampling from a single population.  And we
found that it did.

    So what I'm getting at is, we think
that the air particulate uranium data
collected in that time period now.  These 252
samples collected in the, was it the start of
'43 --

    MEMBER KOTELCHUCK:  '42, yes.

    DR. MAURO:  Those are good data.
In other words, you can do a lot with that.
And certainly to reconstruct it.  And
certainly, if there's any uncertainty you
could always work off the upper 95th
percentile.

MEMBER KOTELCHUCK: Well --

MR. ALLEN: So they -- Actually, given that they were only using uranium and uranium compounds --

MEMBER KOTELCHUCK: Yes.

DR. MAURO: It's reasonable to say that the dust was entirely uranium. At worst, it overestimates. Because if there was just random dust in the air, you know, just non-ordinary dust that happens anywhere, that would be treated as uranium. And therefore, would be -- it would, if you will, overestimate the dose.

MEMBER KOTELCHUCK: Yes.

DR. MAURO: So that's a good -- That's perfectly sound procedure.

MEMBER KOTELCHUCK: Yes.

DR. MAURO: Yes. That's where we came down. And of course we were left with the concern that okay, we don't seem to have any data from '42, '43. And the arguments
intuitively that were made, well really there
was nothing going on of any substance.

And in theory that would be the
answer. Because, you know, if you could make
a case that there was not very much production
going on and agree to it, that case could be
made.

It probably would be very helpful
for this to be written up by, as a White
Paper, as NIOSH often does, explaining it.
But I think in principle if a case can be made
by NIOSH that, yes during those earlier years
this is what was going on.

And there's good reason to believe
that the levels, the dust loading of uranium
would have been much lower at that time than
during the full blown operations. But that
would certainly be a pretty good answer for
our first question.

MEMBER KOTELCHUCK: Yes.

MR. ALLEN: Okay. This is Dave
Allen again. And essentially that was my
proposal from this Item 1 was I wanted to bounce the idea off you of essentially describing why it is still good for '42 and '43.

And then as long as there was not major objection then I would go ahead and write that up as a White Paper. And with the idea that eventually that would get incorporated into the TBD. Because we do agree with SC&A that the TBD would benefit from a discussion on that.

CHAIRMAN ANDERSON: Okay.

MR. ALLEN: Good. Moving on to Issue Number 2. Issue Number 2 is essentially discussing the ingestion. The write up itself is mentioning, from SC&A, mentions the Site Profile. Or it's a request the Site Profile discuss the level of surface contamination at the facility.

And as the second point of that issue was, it should describe the ingestion intake, because they were, SC&A was getting a
different number than what was in the Site Profile.

The second part of that is the easy part. The Site Profile, although the way SC&A calculated the dose is via our Technical Information Bulletin Number 9. And it produces a dpm ingestion rate for, you know, each day of work.

But what we put in the Site Profile is we pro-rate that to a calendar date basis, because that is the way IMBA and any internal dosimetry software will calculate the dose is assuming continuous exposure.

So it's a seven day per week type of exposure. If you take the value that SC&A has in their write up and simply multiply it by five-sevenths, you will get the value that's in the TBD.

DR. MAURO: Got it. Okay. Thank you. That's half the question.

MR. ALLEN: Yes. So that's, I mean that's half of the --
DR. MAURO: That's the easy part.

MR. ALLEN: The other part is, I'm not totally clear on what you wanted there. But it was mentioning the .5 milligram per day.

DR. MAURO: Yes.

MR. ALLEN: And what I did was, if you -- in reality, if you take that .5 milligram per day ingestion, which is a EPA screening level I believe. It's what you'd call it John. I'm sure of the right terminology there.

CHAIRMAN ANDERSON: That's from their exposure factors handbook, isn't it?

DR. MAURO: That's the point, it's not. It's too low.

CHAIRMAN ANDERSON: Is it? Oh, okay. I thought maybe it was.

DR. MAURO: I can help out a little bit here. There's a lot of history to this. And I think we've converged on an approach during a number of Work Group meetings on the
ingestion pathway.

First let me say the ingestion pathway is always a very, very small contributor to the intake. Nevertheless, you know, our mandate is to point out places where we feel there may be some issues.

So it does not have a substantial effect on the ability to, on what the outcome would be of a dose reconstruction. Because the ingestion pathway is a relatively small contributor to the dose.

But nevertheless, the issue goes like this. The approach that NIOSH has adopted generically in this OTIB-009 in effect embedded in this approach is effectively an assumption regarding how much dust and soot and junk people might ingest per day.

In other words, you know, hand to mouth activities. And if you go into NCRP recommendations, you go into EPA recommendations for the purpose of Superfund, and go into the records of where these numbers
where these recommendations come from, you see that the number of milligrams per day that people ingest from various walks of life and different types of activities, whether it's an industrial setting or it's a gardener in their backyard.

The numbers are on the order of 50 to 100 milligrams per day, just in inadvertent ingestion. So that's sort of the recommended default approach in the literature. So our first reaction when we first saw OTIB-009 was, gee, effectively --

And it's not apparent, but if you go in and try to tease out how did they come up with their protocol? We back calculated out. Effectively the approach you're using implies that the ingestion rate, this inadvertent ingestion rate is .5 milligrams per day.

And that seems to be a very small number. And we had quite a bit of discussion on that. And there's a record, a transcript
record on all this. And where we came out is as follows.

If you're working in an environment where -- Let's say you're working with uranium. And there's a lot of uranium being generated as flakes, dust, that's settling on surfaces where you actually could see it, you know, it's a pretty messy operation.

And these kinds of operations did occur in the early years of the Atomic Weapons Employee programs, where you had stuff that was predominantly uranium.

Under those circumstances you would expect that the recommended ingestion rate that's being used by NCRP and the EPA would hold. Namely, numbers on the order of maybe 50 milligrams a day.

But the argument that NIOSH would make, but wait a minute, we don't really have that situation. That is, you know, perhaps when the situation's like that, yes, we would agree. It would be a higher ingestion rate.
But most of the time what we're dealing with is that most of the soot and the junk that's on the ground is just dirt. And a very, very small portion of that material is the uranium.

So using these milligram per day number, which is not a radioactive thing. It was just -- in other words, the way they were looking at it --

Listen, how much dust and soot and soil, and whatever does the people ingest? And that was the real question. And that's where the 50 and 100 milligrams per day comes from.

But now we're asking a different question. And I agree with NIOSH on this. The question's well wait a minute. If you're in a dusty, dirty industrial environment, but most of the dirt and dust, it's just soot and dust, not uranium. You know, we think that number's a bad number. And SC&A agrees with that philosophy.
But at the same time if you're working in an industrial setting with uranium, where the dust that's on surface has not been cleaned up, and is predominantly uranium flakes --

And as I understand it from looking at the literature, these circumstances actually existed in the early years, where you could actually see the dust on the floor of uranium oxide.

Under those circumstances, the numbers that what you would be ingesting inadvertently would be the uranium dust. So our position is, we're okay with the effective .5 milligram per day number that's embedded in this OTIB-009.

If you're working in an environment where the inadvertent -- that's first of all is clean. Because they keep the place pretty clean and there really isn't very much that you would ingest by way of surface uranium. Or you're in an environment where, listen, any
soot that's there --

For example, very often you'd be in an environment that would be a metal, a smelting operation, where most of the time any of the soot there is associated with a metal working, steel working operation. And maybe once a week they would do a little bit of uranium work.

So the vast majority of what would be on the surface would not be uranium. But in those circumstances when whatever is -- it's a dusty environment and the dust is uranium, we think the .5 milligram per day is not a good number.

I think Jim Neton agreed with that philosophy. It goes back to the transcript. I hate to put words in your mouths at NIOSH. So we're at a place where we, I believe the philosophy is, when you're coming up with your ingestion model for workers, your first question that you have to ask yourself is, is it reasonable to assume that most of the --
First of all, it's a dirty environment, lots of residual uranium oxide from the operations are on surfaces. And it hasn't been cleaned up. It's a pretty messy place. Then the .5 milligram per day embedded in this OTIB-009 probably is not a good number.

But you could argue that no, no, no, it wasn't like that. Then the .5 is good. Sorry, it's a long story because this goes back several years of discussion. But my question then here is, in this particular setting was consideration given as to what was the setting?

Was the residual activity, the kinds of activity that took place at Deepwater a fairly dirty operation where if there was, you know, that inadvertent ingestion would have been uranium. That's what was on surfaces. If that's the case then the .5 milligram per day would be a problem.

MR. ALLEN: This is Dave Allen. As
John said, this has been something that we've hashed over, over and over and over again. And I don't think we've ever really come to any kind of agreement.

I mean, NIOSH's primary position is that, you know, one or two generic numbers is really not very good at all. And I believe the ingestion should be proportional to the workplace conditions for a particular site.

And a very dusty site will have higher ingestion than a very clean site. Not just two different numbers, a .5 versus a 50, but, you know, proportional to it.

We developed TIB-9 that we do scale that with. And it is based on airborne. Because we do believe that anything loose enough on the ground, or on horizontal surfaces that could be ingested, can also be re-suspended into the air.

And therefore, there is a connection between airborne and surface contamination. What has been done in the past
on a number of TBD reviews from various
different sites is that --

If I'm not mistaken the Procedures
Work Group is looking at TIB-9 and reviewing
that. And we've generally in the past
transferred this issue to the Procedures Work
Group to pile it on to that one issue, that
one TIB review. And if that's the case,
that's what I would like to recommend for this
particular TBD review also.

CHAIRMAN ANDERSON: So this would
be a referral.

DR. MAURO: Yes. I would say that
by and large we're in agreement that there are
circumstances where these classic OTIB-009
approach serves you well. And there are times
when it doesn't.

And it is something that is before
the Procedures Subcommittee under Wanda. I
believe that we converge, at least in
principle, on a solution. And I don't know if
it's actually been formally adopted yet by way
of, let's say ultimately revising OTIB-009.

Because that is usually the end of the process. That is, once you resolve an issue, your revision to a procedure. But yes. I think as applied to this case --

I know we're spending a lot of time on this unfortunately. Maybe that's the answer is, let's just leave this and transfer it over to the Procedures Subcommittee.

CHAIRMAN ANDERSON: We can sure do that. I mean, my only concern is we just, we probably then need to keep this profile open. Or I'm just worried that, you know, when we transfer things like this it then gets lost in the process in this Site Profile stage. And we forget to go back if, in fact, the Procedures Committee changes it.

MR. ALLEN: Well we, Henry, the way we try to capture that, you know, because that is a concern. The way I would envision this going is, if the Procedures Subcommittee comes up with some recommendations that we agree to,
and we end up revising TIB-9, based on those recommendations, then our Program Evaluation Report process then goes back and sees what the effect of that would be.

And essentially the effect would be to have to go back and revise any number of Technical Basis Documents that were based on TIB-9. And then at that point those TBDs would be PERs essentially. And we'd be reviewing the effect of previously completed claims on new methodology. So I think --

CHAIRMAN ANDERSON: Okay I just don't want to gloss, that's all.

MR. ALLEN: I think --

CHAIRMAN ANDERSON: I mean, the temptation is to transfer things, so we don't have to do it.

MR. KATZ: This is Ted, Andy, this is Ted.

CHAIRMAN ANDERSON: Yes.

MR. KATZ: So I agree with the concern. I also agree with what Dave's
saying, and what John has said about Procedures dealing with this. I think the course to pass forward is, I will make sure --

I don't think you literally need to transfer this to Procedures. I will make sure that this piece of the transcript goes to Procedures. We have a Procedures meeting scheduled for I believe sometime in November, early November.

And let's make sure then John also works with Procedures. We'll make sure that this little piece gets addressed in the context of what Procedures is doing with TIB-9.

Because I don't recall at the moment what the status is, whether everything was resolved, or whether they're still some matters out for them, what have you.

But I'll make sure that they follow up on that. You can just leave this open as a in progress issue for this TBD review, with this Work Group.
And we'll, anyway, we'll close the loop with Procedures. And make certain that at whatever point Procedures has concluded its business -- perhaps they have already. I don't know. They'll report back to this Work Group so that you have that information to consider.

CHAIRMAN ANDERSON: Okay. That's good. I mean, kind of our charge is, is this appropriate for this specific site. Where the old TIB is really, TIB-9 is a more generic procedure. And whether those apply in this site or not is really kind of our --

MR. KATZ: Yes.

CHAIRMAN ANDERSON: -- our subsequent issue to deal with. So that sounds good. So let's move on to Finding Number 3, unless Dave or Bill has questions.

MEMBER FIELD: Yes. Let's go on.

CHAIRMAN ANDERSON: Okay, Number 3.

MR. ALLEN: Okay. This is Dave Allen again. Number 3 deals with an issue
that we were dealing with in the TBD-6000 Work Group. It became known as the Puzier effect.

And essentially the effect is that when you re-melt uranium metal some of the impurities, including some of the decay products, can essentially flip to the top like a slag and end up concentrating these decay products near the top.

And that can cause an increase in beta radiation for a few months until that decays away because those tend to be short-lived daughters. In this particular case we looked into it pretty closely for TBD-6000. And there is a write up in TBD-6000 discussing it.

And what we found during the research was that it's, you know, a real effect during the re-melting process. But there doesn't really appear to be any information that it actually occurs during the reduction process.

The difference there is that in the
reduction, just a quick background. The reduction process is essentially mixing magnesium metal with uranium tetrafluoride, and then heating that up.

And you get a process where you get the molten -- The magnesium essentially collects the fluorine and you end up with molten uranium metal settling at the bottom. For most places after that, that uranium metal derby, as they call it, is then re-melted and poured.

The molten uranium is poured into a graphite mold. Not only to change the shape, but also to purify it essentially. And to bring this slag to the top that has been cut off.

At DuPont they did do the reduction process with the magnesium fluoride, with the magnesium and the uranium tetrafluoride. But they did not do the re-melting.

That was done elsewhere. I'm not even sure where these were sent. I think they
were sent to Mallinckrodt, but I'm not sure about that.

So our response on this one is, this is discussed on Page 22 of TBD-6000. And the conclusion there was that this effect doesn't appear to occur during the reduction process, which is the only one of those two processes that occurred at DuPont.

So we think it's a non issue here. And I can of course, you know, put a response down on the matrix there. But I wanted to bring that out verbally.

CHAIRMAN ANDERSON: Thank you.

DR. THURBER: This is Bill Thurber. David, I agree with that. And in fact there is a patent out there, where in the re-melting process, if you will, the inventors concluded that you could eliminate the Puzier effect if you did use a magnesium fluoride slag.

So that definitely supports this whole concept that it is probably not an issue during the reduction of the uranium
tetrafluoride to the uranium metal. But it is associated with the re-melting. So I concur with that.

MR. ALLEN: Okay.

CHAIRMAN ANDERSON: So it sounds like we're in agreement, and you just need a written explanation.

MR. ALLEN: Yes. My thought was I would put down like the short, one paragraph reply --

CHAIRMAN ANDERSON: No, that --

MR. ALLEN: -- on the matrix. And anything that needs a further explanation --

This one won't. But others that need a larger explanation I would end up writing a White Paper and sending it to the Work Group.

CHAIRMAN ANDERSON: Yes. This doesn't need that much.

MR. ALLEN: No. This one I think is just going to basically refer to Page 22.

CHAIRMAN ANDERSON: Yes. That's fine.
DR. MAURO: One of the important points though is that you're saying your records of the operations here was that there was the original reduction process.

But they didn't actually make ingots and go through the second step. And I guess it wasn't apparent to me that that was the case.

MR. ALLEN: Okay. Well that will be our answer on that. And it's pretty clear. There's a whole history of DuPont and this particular site in our Site Research Database.

And it goes as far as to project numbers, the date that the DuPont Executive Committee approved, you know, beginning this contract. And, you know what the contract was for, what building was built to do it, and that sort of thing. So it's pretty detailed.

DR. MAURO: Good, good. That's a strong case.

MR. ALLEN: Okay. I guess moving on to Issue 4, correct?
CHAIRMAN ANDERSON: Yes.

MR. ALLEN: Issue 4 was a substantial disparity between the explanation on how the annual photon doses to operators were derived, and the actual values employed in the site matrix.

This particular issue -- It's mentioned in the matrix. It's, you know, there's a lot -- I'm sorry, it's mentioned in the TBD. But there's a lot of stuff in the TBD.

That the values, the starting point that we used as far as radiation dose rate values were considered to be an average type of value. And we wanted to apply some sort of uncertainty, or really needed to apply some sort of uncertainty to that.

From our Battelle TIB-5000, lacking enough data to do an analysis, you know, we have some basis in there for a generic assumption of a log normal distribution with a GSD of 5.
In order to apply an average value to a log normal distribution you need to calculate the geometric mean. So there is formulas in TIB-5000 that --

And it's just flat mathematical, statistical formulas that allows you to take, determine what a geometric mean is from a distribution that has a average value of X and a GSD of Y.

And that's what we did. And that is actually what the difference is, the disparity that's discussed in the issue. The table is not the average. But it is the geometric mean. And there is a GSD of 5 applied to the values in that table.

DR. MAURO: This is John. I understand that sometimes you go into some statistical treatment. So that when I read the Site Profile it seemed to be pretty straightforward.

In effect a statement was made that, well we believe that at different
distances the dose, the exposure rates, were either 1.3 millirem per hour or .3 millirem per hour. And these were the exposure rates that -- and really is milliroentgens.

And then you simply said, well we're going to assume that people worked there, worked 2400 hours per year. And half the time they were exposed to 1.3 mR per hour, and the other half was .3 mR per hour.

And I said, oh okay. So I, you know, just did a little calculation. And I came up with, well that means that the exposures these people would get would be, the field, 1920 milliroentgens per hour. But in your report it's 519.

And it sounds to me that -- So there's more to the story then my understanding of what's in the Site Profile, on how you got the 519. In effect, the issue is we get 1920 mR per year, you get 519 mR per year.

And it's not apparent to us, you
know, and I'm hearing that you're saying that it has something to do with the statistical treatment of the data. But I don't think that was in the write up of the Site Profile.

MR. ALLEN: It's in there, John. But it's really not, I mean, it's not highlighted or anything. It is the paragraph before Table 7.

DR. MAURO: Okay. But --

MR. ALLEN: Table 7 --

DR. MAURO: -- the system that, by the way that you would, I mean, it's not that's it's a small difference. We're talking about a fourfold difference. And I've got to say, the statistical aspects of it, it's always --

To be honest, I get thrown into a tailspin I feel when you start to apply all of these, I guess it's OTIB-5000, or TBD-5000, whatever it is, 5000. Where you have a statistical treatment of data.

But in this case it looked like you
weren't working with data. You actually said, listen, this is the radiation field. One foot away is the radiation field. One meter away from these, where the workers were working. And it was very, very straightforward.

So yes, I could certainly use a little help in understanding how you got, you know, a factor of fourfold lower. I'd love to understand that.

MR. ALLEN: Okay. And it's in there. And I will put that in the, you know, I'll do what I can as far as putting something in the matrix that might require a little bit more, a very short White Paper.

DR. MAURO: Yes. Walk me through it. I mean, I got to tell you, I mean, I believe there are ways that you might work the data that is a statistically valid approach to get to a geometric mean.

But in this case I thought it was not actual measured data with distribution. This is simply a physics problem. This is the
exposure rate at one foot and the exposure rate at one meter from a drum. And given that exposure rate, that's that.

And we're going to assume that there's a guy spends 50 percent of his time at one foot away, and 50 percent of his time at one meter away. And it's pretty simple. So yes, I'm more than open to take a look at your write up. I'd like to see it.

MR. ALLEN: Okay, I mean, you are right. It is a calculated value. But that's assuming you have a stick figure, you know, exactly half his time here, and exactly half his time at the other place.

DR. MAURO: Yes.

MR. ALLEN: And there's, you know, going to be some uncertainty to that value. And based on measured values at various sites, and what we're seeing, you know, the geometric standard deviation of 5 encompasses the worker location type of uncertainty that we've seen. And that's why we applied that. Because we
know we don't have stick figures standing there next to a drum.

DR. MAURO: It is my --

DR. THURBER: Go ahead, John.

DR. MAURO: I'm sorry, Bill. No, go ahead, Bill.

DR. THURBER: What I was going to say, Dave, it is, you know, to follow up on John's point. Yes, if this is a standard physics model calculation, which I suspect it is, there is some uncertainty in that calculation.

But that's not the kind of uncertainty where it's appropriate to apply a GSD of 5, which is a default position in Battelle 5000, which says you can use that if you don't know anything. And obviously I'm sure that these physics calculations have an established uncertainty.

DR. MAURO: One more -- and to follow up on that. In so many occasions when we are looking at an AWE site, where you're
dealing with a barrel of yellowcake, or you're dealing with a rod, or a slug. And you --

And in fact, it's right there on the front end of TBD-6000. It says, well listen, the radiation field at contact is 22 mR per hour. That would be the beta-gamma if you were contacting it from the, you know --

And at one foot away it's about 2 mR per hour. And then you usually go with that. And then you say okay, well how many hours per year are they -- and so I don't --

When it was reduced to these types of simple physics calculations, which we were very comfortable with. I mean, there's nothing, it's hard to, you know, there's nothing to argue about.

This is the physics of the problem. But then to go to this geometric mean and standard deviation factor of 5, it just seems to be incongruous with that. So, yes.

MR. ALLEN: Okay, John, I mean, this is something we probably aren't going to
gain anymore today on.

   DR. MAURO: Yes, yes.

   MR. ALLEN: I think it's something reasonable people can disagree. The reason we tried to apply the uncertainty was more for the assumptions rather than the calculated dose rates. Because this uncertainty ends up producing a higher PoC than what just using that average is going to do.

   DR. MAURO: Well there's a big difference. And this is important. In other words, this issue is going to have a significant impact --

   MR. ALLEN: That factor of four --

   DR. MAURO: -- on the dosage instructions.

   MR. ALLEN: -- average used as a constant in IREP is going to give you a lower Probability of Causation than what we did. We're applying a distribution is what I'm saying.

   DR. MAURO: Yes.
MR. ALLEN: But it's a -- I don't know how significant it is. And I don't think it's something we're going to settle here today.

DR. MAURO: Okay.

MR. ALLEN: And I owe a write up as far as what the mathematics, et cetera, are, and our reasons for using that. And then I think we can make more progress the next time around.

DR. MAURO: Yes.

MR. ALLEN: Okay?

DR. MAURO: Okay.

MR. ALLEN: So moving on to Number 5, find where I'm at here in my notes. And this ends up being, if I'm not mistaken, this is kind of the same thing.

DR. MAURO: I think so, yes.

MR. ALLEN: Because it is another issue of the geometric mean versus, you know, what we consider to be an average. And I think I'll include all this in a White Paper
type of write up for the Work Group. And there's probably no reason to really discuss it thoroughly right now.

DR. MAURO: For the Work Group, it said the former question had to do with photon exposures. And the one we're talking about now has to do beta exposures. So it's, you know, the issue is the same.

In other words, in one case we're doing a very simple physics calculation as opposed to somehow some kind of statistical treatment. So yes, I think the answer is that both those are sort of going to be the same type.

MR. ALLEN: Okay. And then just moving on to Issue 6 here, unless somebody stops me.

CHAIRMAN ANDERSON: We're on a roll. That's what I was hoping, that we'd --

MR. ALLEN: Yes. Two more to go here. And Number 6 is an assumption. And I'm trying to remember what this is, John. This
is the -- we made an assumption --

DR. MAURO: Yes.

MR. ALLEN: -- for the residual period, if I'm not mistaken.

DR. MAURO: Yes, we're in the residual period now, yes.

MR. ALLEN: We made an assumption that the -- we had open window measured dose rates that were, that would include both beta and gamma radiation. We made an assumption of a 50/50 split between beta and gamma to total to that total radiation dose that was measured.

And John's review, or SC&A's review indicated that that doesn't seem very realistic. It should be a bigger number, you know, much more beta than gamma. And they point to a table in TBD-6000 to point that out.

Again, this will be a, I need to give you a written response on this. But essentially it came down to, they did some
significant attempts at decontaminating these buildings. And it included sandblasting the floor.

They actually took, you know, several hundreds if not tenths of inches off the concrete floor. And these measurements are, you know, essentially what was left there.

Because of the cleaning, and because it was clearly, you know, embedded, I'm not sure if the ratio, the beta to gamma ratio that was calculated for surface contamination really applies as well.

Because there should be, it's very credible there's a great deal of self shielding of the beta radiation. Beta doesn't have, you know, near the range that the gamma radiation does.

And if it's embedded in concrete, much of that beta radiation could be missing from that total measurement. Therefore, it is possible that the gamma is a bigger component
than what would be calculated from just
surface with no self shielding.

And also, as a result, it's very
possible we would be underestimating the dose
to most organs. We could be -- the way we did
it could underestimate skin dose.

But in reality not really. Because
the skin is going to get all that dose. It's
going to get the beta dose and the gamma dose.
And we're going to use both in the
calculations.

My concern was more the photon dose
for all the other organs. If we assumed this
bigger ratio we'd be grossly underestimating
that dose.

And I don't know if there's enough
to say that it's, you know, definitely higher
beta than gamma. It probably is, but not to
the extent in TBD-6000.

That was the working assumption
when the TBD was written. And again, I can
put all this in writing. But at least get,
you know, some type of feedback if anybody has
a thought on that.

DR. MAURO: Let me just help out a
bit. When I, you know, we've seen these
calculations before for AWE sites. Within the
residual period someone has made some
measurements, whether it's a contact dose,
open window where you get beta-gamma.

Or someone has made a dose exposure
rate measurement at one meter or one foot.
And you have some data on what the field is.
And then you make certain assumptions on what
portion, especially if it's open window, what
portion of it is penetrating, what portion is
not penetrating.

And this is all very standard
stuff. And we've seen it before, and we've
always been fine with it. In this case, I
have to say -- there's a couple of pages of
text that I wrote up here.

I got to tell you, it threw me for
a loop. I said, I don't get it, I got to tell
you. And because it seems to be a simple problem that could easily be calculated. But you ended up coming up with numbers and an approach with the whole body dose.

And using these numbers in a way that actually was somewhat convoluted. I just didn't really understand the rationale behind it.

And again, I'll be the first to say, maybe there's a really good rationale. But I didn't get it. And anything you could do to help me understand it, that would be great.

MR. ALLEN: Okay. And I think you are actually not only talking about 6, but actually getting into Number 7.

DR. MAURO: Six and 7 are coupled, yes.

MR. ALLEN: Seven as well.

DR. MAURO: Yes, they're coupled, yes.

MR. ALLEN: And I have it written
down that I owe you an explanation as to how it was done, exactly. I'll put the equations in there as far as how it was done, and a why. As well as why I feel that is a better method than what you proposed in your review.

DR. MAURO: Okay.

MR. ALLEN: I think that's what the Work Group needs to, you know, make some type of decision. And maybe we'll even come to agreement before, you know, they have to make a decision. Does that sound like the appropriate path forward?

CHAIRMAN ANDERSON: Sounds good to me. Are you including 7 in that? Or do we want to talk 7 as well?

MR. ALLEN: I was just including 7 in that. Because that's almost what John --

CHAIRMAN ANDERSON: No. I think they seem --

DR. MAURO: Yes.

CHAIRMAN ANDERSON: -- very similar.
DR. MAURO: Yes, I agree. Yes. I think they're really coupled up issues. And you could address them in one fell swoop.

CHAIRMAN ANDERSON: Okay. Other Board Members, any questions? It seems to me we got a way forward here. We've got a couple of White Papers.

MEMBER FIELD: Right.

CHAIRMAN ANDERSON: We're finding 1 and finding 4 and 5 together. And then, I don't know if it's a White Paper or not, but at least a written explanation combining kind of 6 and 7 issues as one.

MEMBER FIELD: Right.

MR. ALLEN: If I even have a -- It might be 4, 5, 6, and 7 all in one shot.

MEMBER FIELD: Okay.

CHAIRMAN ANDERSON: However you want to deal with that, it's fine. I just, you know, 3, I think --

MR. ALLEN: Three, I'm going to give you the NIOSH response on the matrix.
and I think 3 can just be answered right there.

CHAIRMAN ANDERSON: Right. And then 2 we're going to talk about, you know, referral. Or hopefully the Procedures Committee will address that for us.

DR. MAURO: I'd like to just point out, 4 is the one I'm most concerned with. Because this, we're talking about operations, relatively high doses. And the difference in our approach and their approach is a factor of four.

The other is dealing with the residual period. Residual period is, you know, never important, I mean, unless that's the only period you're dealing with. But in this case --

So I am most concerned about making sense out of Issue Number 4. Because that's going to have a real effect, depending on how we resolve it, on dose reconstruction for workers.
MR. KATZ: Okay. This is Ted. Dave's going to do a lot of responses on that, and indications where he's going to I guess write a White Paper on the matrix. We can just use that as our action list for this I think. Is that right? Will that work, Dave?

MR. ALLEN: I believe so, yes.

MR. KATZ: Okay. Is that okay with you, Andy?

CHAIRMAN ANDERSON: Yes, that's fine. Yes, I think we're -- the only thing we need is some kind of a timeline.

MR. KATZ: Right. So, Dave, do you already have a sense for how long you'll require to do -- I mean, I can tell you for Issue 2, Procedures is meeting in early November.

So we won't have anything back from Procedures before that. Unless I find when I look in the records that we've already put everything to bed. But, Dave, do you have sense for how much time you'll need for these
White Papers where you need to do White Papers?

MR. ALLEN: The main issue is finding the time to work on this particular one.

MR. KATZ: I understand.

MR. ALLEN: I think I can definitely shoot for having a White Paper to the Work Group by the time the Procedures Committee meets in early November.

MR. KATZ: Okay.

MR. ALLEN: If I can shoot for that then they'll have both pieces of information. And then can decide on when they, you know, when a Work Group meeting is, you know, when we can have one.

MR. KATZ: Okay. Then roughly we're thinking about later in November possibly having a meeting. Right, Andy?

CHAIRMAN ANDERSON: Yes.

MR. KATZ: And my guess is that given how this has gone, I think we'll be fine
to do it as a teleconference.

CHAIRMAN ANDERSON: Yes. I think it's more, it's technically getting it all documented is what we need.

MR. ALLEN: Yes. It's hard to discuss mathematics on a telephone call.

CHAIRMAN ANDERSON: Yes. Well let's see what the White Paper is. And we can take it from there and see.

MR. ALLEN: Okay.

MR. KATZ: Very good.

CHAIRMAN ANDERSON: Okay. I think that closes out our agenda. Are there other issues that people have?

MEMBER FIELD: No.

CHAIRMAN ANDERSON: Or any other sites that are coming up for us?

MR. KATZ: I don't believe any new sites have been assigned, Andy. So I think this will -- I think, if I'm not forgetting something, that this DuPont will close all the sites that you have in hand currently.
CHAIRMAN ANDERSON: Yes. Okay.

Looking at my past files that seems to be the issue.

DR. MAURO: Ted, this is John. There are, in the pipeline, a number of AWE Site Profile reviews that SC&A has worked on.

So just to let you know that this is great.

I mean, we have a single Work Group that's knocking off lots of these. But there are others. And, you know, you won't put on the Agenda.

MEMBER KOTELCHUCK: Would you mind naming them, so I can just keep notes on it?

DR. MAURO: Well I know that we just issued Kansas City Plant. I believe that, you know, I think that's an -- I'm not, is that an AWE?

MEMBER KOTELCHUCK: I think that's a DOE site.

DR. MAURO: Is that a DOE site?

Let's see, General Atomic.

MEMBER KOTELCHUCK: Okay.
DR. MAURO: That one was -- I know I finished reviewing that. I'm not sure where that is.

MR. KATZ: I think General Atomic, John, was assigned to TBD-6000. But I could be wrong about that. I could be --

DR. MAURO: Oh, yes. You're right. I'm sorry. We do have this sort of thing. I know I've been working on a number of what I would call AWE sites.

And I've completed, you know, some have been completed. Some are close to completion. So you're right. They would either populate TBD-6000 or the AWE facility.

MR. KATZ: Right.

DR. MAURO: We'll work all that out.

MEMBER KOTELCHUCK: Okay.

MR. KATZ: Right now we don't have any other sites to add. But as John said, there will be other sites that this Work Group addresses. I'm sure of that.
MEMBER KOTELCHUCK: Okay.

CHAIRMAN ANDERSON: Oh, yes. I mean, we're not going to disband.

MR. KATZ: Right.

CHAIRMAN ANDERSON: Just so, you know, as we're looking at what activities are in the queue, we would be ready to go, you know, after the next meeting with others.

MR. KATZ: Right.

MEMBER KOTELCHUCK: Okay.

CHAIRMAN ANDERSON: So just to kind of not drag out our meeting here. To close it out, kind of the action items I have here by this coming Thursday, SC&A are going to provide us with slides for the United Nuclear presentation in Denver, as well as a close out on Baker-Perkins.

MEMBER KOTELCHUCK: Just to request on that. Ted, I am still having trouble getting my CDC computer to work. It's been driving me crazy. But the bottom line is, it still isn't up.
So that would you please send me
the Site Profile Review PowerPoint to my
regular number. And hopefully I'll have it
done in a few days. I'm working with ITSO on
it. Okay?

MR. KATZ: That's not a problem.
And then, John, just to note on the Baker-
Perkins TBD, it's just a 15 minute I think
session. It's a brief session.

CHAIRMAN ANDERSON: Okay.

MR. KATZ: So it should be a
relatively brief --

DR. MAURO: Are you asking me to be
brief?

MR. KATZ: I'm actually -- you can
go into somewhat more detail in the
PowerPoints. But Andy's going to have to be
relatively brief in his presentation.

DR. MAURO: Yes, no problem. Yes,
I will make it. And so I'll shoot for the two
of them. There's only two, United Nuclear and
Baker-Perkins.
MR. KATZ: Yes.

DR. MAURO: The slide presentation should be something that, all together 15, 20 minutes?

MR. KATZ: No, no. They're two different sections. Baker-Perkins is brief. United Nuclear has a normal full SEC session.

DR. MAURO: Oh, okay. Got it.

MR. KATZ: So don't scrimp at all on United Nuclear. And Baker-Perkins just, you know, I mean, be reasonably precise.

DR. MAURO: Sure.

MR. KATZ: But Andy can handle the verbal part within time.

DR. MAURO: And we'll be on the phone, that is, Hans, myself and Bill, in case any questions come up. We were not planning on attending.

MR. KATZ: Yes. And that's excellent I think. If you're on the line that will work.

DR. MAURO: Very good.
CHAIRMAN ANDERSON: Okay. Any other issues? I don't know. Do we have any public commenters on DuPont or Baker-Perkins. I think they're all off I guess, or on mute. So with that, I'll entertain a motion to adjourn.

MEMBER FIELD: So moved.

MEMBER KOTELCHUCK: I'll second, thank you.

MEMBER KOTELCHUCK: Thank you, bye bye.

CHAIRMAN ANDERSON: Take care.

(Whereupon, the meeting in the above-entitled matter was adjourned at 11:09 a.m.)