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

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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

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WORK GROUP ON TBD-6000

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WEDNESDAY,
FEBRUARY 16, 2011

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The Work Group convened via teleconference at 11:00 a.m., Eastern Standard Time, Paul L. Ziemer, Chairman, presiding.

PRESENT:

PAUL L. ZIEMER, Chairman
JOSIE BEACH, Member
WANDA I. MUNN, Member
JOHN W. POSTON, SR., Member

ALSO PRESENT:
TED KATZ, Designated Federal Official
DAVE ALLEN, DCAS
ZAIDA BURGOS, NIOSH
SAM GLOVER, DCAS
JENNY LIN, HHS
JOHN MAURO, SC&A
JIM NETON, DCAS
BILL THURBER, SC&A

C-O-N-T-E-N-T-S

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

(11:01 a.m.)

1. ROLL CALL AND CALL TO ORDER

MR. KATZ: Let's get started. This is the Advisory Board on Radiation and Worker Health, the TBD-6000 Work Group. This is Ted Katz. I am the Designated Federal Official of the Advisory Board.

Roll call. Let's start with Board Members, and since this is site-specific -- we're basically addressing Bliss & Laughlin today. GSI we're just giving some updated information. And I'm also going to read a letter into the record, but there won't be deliberations about GSI per se.

So let's get started with Board Members. Let's speak to conflict of interest as well with respect to the site beginning with the Chair.

CHAIRMAN ZIEMER: Yes. Paul Ziemer, Chair of the Work Group. No conflict.

MEMBER MUNN: Wanda Munn, Member. No conflict.

MEMBER BEACH: Josie Beach, Board Member. No conflict with either Bliss & Laughlin or GSI.

MEMBER POSTON: John Poston, Member. No conflict.

MR. KATZ: Okay. And any other Board Members? Do we have Mark Griffon?

(No response.)

MR. KATZ: Zaida, would you please give Mark Griffon a call --

MS. BURGOS: I will.

MR. KATZ: -- just to see that he didn't forget about this? Thanks.

MS. BURGOS: Okay.

MR. KATZ: Okay. And let's carry on, then, with NIOSH, ORAU team?

DR. NETON: Jim Neton, NIOSH. No conflict.

DR. GLOVER: Sam Glover, NIOSH.

No conflict.

MR. ALLEN: Dave Allen, NIOSH. No conflict.

MR. KATZ: Very good. SC&A team?

DR. MAURO: John Mauro, SC&A. No conflict.

MR. THURBER: Bill Thurber, SC&A. No conflicts.

MR. KATZ: Very good. Federal officials at HHS or other agencies or contractors to the feds?

MS. LIN: Jenny Lin, HHS.

MR. KATZ: Members of the public who wish to identify yourself?

(No response.)

MR. KATZ: I'm sure if Mark joins us, or Zaida will let us know. If he's not planning to join us, we'll hear then. But it's your agenda, Paul.

Everyone on the phone please mute your phones except when you are speaking, *6

if you don't have a mute button, *6 to take yourself off mute. Thank you.

CHAIRMAN ZIEMER: Okay. Thanks very much. I appreciate everybody being available this morning.

2. INTRODUCTORY REMARKS AND OVERVIEW OF AGENDA

CHAIRMAN ZIEMER: I did want to do a quick overview of the agenda and make sure we're all on the same line there. I had a strange thing this morning when I was pulling my copy off the email to get a hard copy.

I found on my computer my original email said it was never sent. It was sitting here in the out box, but it must have been sent because people have a copy of it. Is that correct?

MEMBER BEACH: I got one, Paul.

CHAIRMAN ZIEMER: Pardon me?

MEMBER BEACH: This is Josie. I got a copy.

CHAIRMAN ZIEMER: Is there anyone who didn't get a copy of the agenda? I guess that's my question. I don't know why it's sitting on my computer with a note that it was never sent because I was sure it went out. And I know a copy got on the website as well.

You will notice that the main thing we are going to focus on is Bliss & Laughlin. And Sam Glover will be leading us through that. We will determine after the discussion whether or not we are ready for recommendations to the Board.

And then with respect to GSI, we're not going to have any technical discussion there, just record some documents that have been received and also briefly give you some information on what has to be done in terms of prioritizing the path forward in terms of timetable. So that part should go very quickly.

So let's focus now on Bliss &

Laughlin. And just as backup material, let me -- well, first of all, I appreciate Sam having sent us the document which summarizes a number of previous documents that you can refer to as well as the transcript of our last meeting in October.

And in that transcript, if you had a chance to look through that, you will see that we thought at the time that we were pretty well through with Bliss & Laughlin. In fact, we were debating whether or not to take a recommendation to the Board at the Santa Fe meeting.

And we decided that since NIOSH had agreed to put in writing some responses that had to do more with the issues of how a dose would be constructed, as opposed to the issue of whether or not there should be an approval of the special cohort petition, we thought we were pretty close to closure.

In fact, as I looked at the

transcript, the question that was raised toward the end of the meeting was are we prepared to recommend to the Board in Santa Fe that we concur with NIOSH and SC&A on Bliss & Laughlin? And that was that dose could be reconstructed.

And then we decided to wait until we got everything in writing in terms of details on dose reconstruction since the recommendation would have been to deny the petition. And that meant that dose would have to be reconstructed. And there were some details that we didn't have in writing.

So we decided to defer a recommendation. And the focus at that time was on findings 6 and 7, which needed more clarification. Although there were a few minor things on 1 through 4, we had closed issue 5. There were seven issues. And you might want to refer in that regard to the SC&A report.

They had seven findings, the first four of which we had minor comments on, the fifth of which we said was closed. And 6 and 7 we wanted some additional clarification on.

But in going through this, I realize that -- and Sam has fleshed all of these out better because there were some questions on all of them. And I think it will be helpful, Sam, if you want to go through your sort of bottom line on the seven issues and any other materials you want to present. And then we can discuss them one by one if needed.

Is Sam on the line there?

DR. GLOVER: Yes, sir, however you would like to do it. I mean, I am happy to walk through the summary that we prepared.

CHAIRMAN ZIEMER: Yes. I think that would be helpful. And maybe the best way to do that if everyone has the summary document, it might be good if we went through

them individually. And I know that SC&A had a comment, sort of an overall comment, a day or two ago.

I think Bill Thurber sent out an email and indicated that SC&A may wish to have some comments on your responses and we need to allow time for them to do that perhaps. So that's why I sent out another email yesterday indicating that, if necessary, we could postpone final action if we deemed the need for SC&A to respond more fully to some of these issues.

So why don't you start, Sam, with the first item and take us through that or were you wanting to go through your slides at all? You distributed slides, which you had presented to us like a year ago or more. And I think you updated those a little bit.

DR. GLOVER: Yes. I was just going to maybe briefly -- where we are on a couple of things.

CHAIRMAN ZIEMER: Sure.

3. NIOSH REPLY AND CLARIFICATION FOR FINDINGS 6 & 7 OF THE FINDINGS MATRIX. SUMMARY OF FINAL NIOSH RECOMMENDATION ON BLISS AND LAUGHLIN

DR. GLOVER: I sent you an email, Dr. Ziemer. We did present. The details were not given at the meeting. We didn't include those in the Evaluation Report. But we did prepare as part of basically the dose reconstruction the examples, the example DRs.

What we would use for a best estimate method, we included sort of a TBD-6000 overestimating approach, but we also included basically what was going to be the more fine-tuned method. And I have changed that a little bit because there are some changes to the documents. And so over the year and a half, a few things have changed.

CHAIRMAN ZIEMER: Right.

DR. GLOVER: I summarized those.

And hopefully everybody got that email. And I saw some back and forth. I thought maybe it was a good time to perhaps remind us of some of the things that did change.

When we first did Bliss & Laughlin, it started in '48 to '52. Department of Labor has changed the covered period to only be '51 and '52. So cases that were done with that four years of exposure, they were done with -- and I gave you the list of cases that were done -- it's in the folder -- using TBD-6000 or probably the TIB-4, TIB-2 approaches. They would have been done 365 days a year with those large exposure estimates.

And so now that we understand more about Bliss & Laughlin, the best estimate method is going to be for the six days, the one day in '51 and the 5 days in '52 -- and so there's a very large change in the dose that would be used for best estimate methods in the

future. So I wanted to, you know, kind of point out some of the changes that have happened.

TBD-6001 has also gone away. And so what I prepared for the Board had some references to handling of drums. And so because that reference is no longer really useful, the information that I prepared for you in the Excel sheet and in the Word document uses the metal-handling exposure, the same that would have been used for handling the metal when they did the surface work and they ground off the surface rods before they went to Bethlehem Steel or before they were then transported to LOOW. I used the same metal-handling figures, instead of the drum-handling, to update that.

So, for the most part, most of this data is very, very close to what you saw in the presentation in July of 2009.

4. DISCUSSION AND RECOMMENDATION OF WG ON

BLISS AND LAUGHLIN FOR UPCOMING BOARD MEETING

CHAIRMAN ZIEMER: Right. Let me ask if there are any general questions on that before we proceed.

(No response.)

CHAIRMAN ZIEMER: Although there were a number of people for whom dose reconstructions were done based on an extended period, the Department of Labor subsequently reduced the eligible period. Isn't that correct, Sam?

DR. GLOVER: Yes, sir.

CHAIRMAN ZIEMER: But on those for whom -- and I don't know if there were such cases. I presume there were. Those who had successful claims that might not be successful under the new time scope, those still don't get changed back, do they?

DR. GLOVER: No. The general rule, DOL does not send those back to us for

dose reconstruction.

CHAIRMAN ZIEMER: Right. Right. So there are a number of claims that were based on an extended time period, which had they been done now would probably be much less. I assume that would be the case, or are the assumptions somewhat compensating?

DR. GLOVER: The example DRs included lung cancers. And I think the one that used the best estimate method had an 83 percent PoC. So certainly it is not -- we'll walk through that.

Whole day exposure is at 5,480 dpm per meter cubed. And so that's about a little over 70 MAC air.

CHAIRMAN ZIEMER: Right.

DR. GLOVER: And so those would have been -- you know, that would be assigned for five exposure days --

CHAIRMAN ZIEMER: Right.

DR. GLOVER: -- type S material

that will make a compensable case depending on your claims.

CHAIRMAN ZIEMER: Under the previous assumptions, what would it have been, though?

DR. GLOVER: It would have been 40,000 dpm per day times 365 days a year --

CHAIRMAN ZIEMER: Right, times --

DR. GLOVER: -- times 4 years.

CHAIRMAN ZIEMER: Right, right. Okay. No questions apparently. So maybe we should proceed then. Do you want to go through each of these individually, Sam, and just flesh out your comments?

DR. GLOVER: Yes. Go ahead and walk through the responses to the findings?

CHAIRMAN ZIEMER: Right.

DR. GLOVER: And then would you like to walk through the calculations very quickly?

CHAIRMAN ZIEMER: I think we can

do that as well, but let's go through the responses first and then also give SC&A a chance to react to any of these.

DR. GLOVER: Certainly.

CHAIRMAN ZIEMER: We'll do them one by one. So let's start with the first one, which out of the SC&A report would be identified as section 7.1.1, which is the internal monitoring data pedigree review.

DR. GLOVER: So I extracted these directly from the SC&A report. The description of the finding was NIOSH should describe reference procedural standings for performing individual dose reconstruction.

CHAIRMAN ZIEMER: Right.

DR. GLOVER: And the response I provided is largely included in the appendix in the Excel sheet, the details. Our response to NIOSH was "Develop a stand-alone appendix for TBD-6000 for Bliss & Laughlin. As all TBDs these change with time. However, based on the

information available, NIOSH has prepared a more detailed summary document," which is attached, "provide additional details which were not presented in the Evaluation Report. This material is attached as an appendix to this response in an Excel sheet," I believe which all of the members of the Board and SC&A have received.

DR. MAURO: Sam, is this the material that came out on Friday?

CHAIRMAN ZIEMER: No. It was on the 16th, I believe.

MR. THURBER: Monday, yes.

CHAIRMAN ZIEMER: Or no, today's the 16th. No, it was -- it was before that.

MR. THURBER: It was on the 14th, I believe.

DR. MAURO: The 14th, on St. Valentine's Day? Okay. I just wanted to make sure what you were referring to and with the revised spreadsheet. Okay.

MR. THURBER: This is Bill Thurber. Let me just make a brief comment here. Our original finding was that the NIOSH Petition Evaluation Report says that they had standards for doing this work. And all we said was, "Please advise us what the standards were." So it was more of an informational finding.

CHAIRMAN ZIEMER: Right. And I double-checked that against the transcript. And the statement, I think, that was made was that you weren't questioning the procedure so much as saying, "What is the procedure?"

MR. THURBER: Exactly right.

CHAIRMAN ZIEMER: "Tell us what it is."

MR. THURBER: Yes.

CHAIRMAN ZIEMER: "We agree you have a procedure, but you didn't tell us what it was."

MR. THURBER: Yes.

DR. GLOVER: And that is why I have tried to be very -- I shouldn't say rigorous in the calculations of how to walk through where they came from, TBD-6000 or TIB-70 approach, and try to make reference to that in the attached documents so that would be relevant, directly relevant, or observable.

I hope I am answering the question that is asked.

CHAIRMAN ZIEMER: And, Bill, Bill Thurber, have you -- I know you haven't had too much time to look at this, but have you had a chance to sort of determine, does that answer the question for SC&A for --

MR. THURBER: I think it does.

CHAIRMAN ZIEMER: But you --

MR. THURBER: The one thing that would be helpful for me to have some clarification on is this. What we had up until Monday was a Petition Evaluation Report, which we reviewed on its merits. And these

findings, which Sam is going over, are a result of that review.

Now we have a new document which is more in the way of a Site Profile. And it's not clear to me whether one document supersedes the other or how that question is going to be dealt with or if it's going to be dealt with because in regard to this first finding, I could certainly say, "Well, it's irrelevant if we're looking at how the procedures are provided in the new material that NIOSH has prepared." So I am confused a little bit about that.

CHAIRMAN ZIEMER: Sam, can you respond to that, or do you understand the question?

DR. GLOVER: I believe in the email I tried to make a little bit of reference to that. In the Evaluation Report, we provided a bounding method. At the time we presented this to the Board, we indicated that

here was the bounding method but also we had best estimate dose reconstruction abilities. And those would be used for dose evaluation.

In the ER document, the Evaluation Report is not going to be used long-term as a Technical Basis Document for dose reconstruction. And, you know, I believe what we were asked was to provide the details on the calculations that would be used to determine dose. And I hope that I have done that.

CHAIRMAN ZIEMER: So basically this new document, which looks a little more like a Site Profile, is the basis for what you would use. The Evaluation Report simply is that. It's saying what you will do. But, in essence, you have to go to this second document. Is that correct now?

DR. GLOVER: We have those, the Site Profile reference, for some of the history.

CHAIRMAN ZIEMER: Right.

DR. GLOVER: An actual separate appendix for actually doing dose reconstruction will be prepared. The dose reconstructors will use that. They won't reference the Evaluation Report.

DR. MAURO: Just so that I understand, so, in effect, the explicit protocol that is going to be used to do your dose reconstructions for, I guess the realistic cases is the material that's laid out in the spreadsheet and other materials contained in your Monday -- what would we call this, a supplement to the ER or is this the site -- you know, Bill looked more closely at it than I did, but we did have a chance to talk about it. And I guess it's our understanding is this to be considered an appendix or a supplement to the ER to be a little bit more explicit about exactly how we're going to go about doing these dose

reconstructions?

DR. GLOVER: In the interest of not creating a very long document that may be off topic, I didn't include some of the material that would go into the final appendix. These calculations would serve the basis for the appendix.

MEMBER BEACH: This is Josie. For the TBD-6000, not for the ER, correct?

DR. GLOVER: Yes. I guess this is not an -- it is listed as a supplement. This was basically as the predecessor for what would be the development of the appendix and also to show you basically how the example DRs were done in 2009.

CHAIRMAN ZIEMER: Well, I think Josie is asking if this is going to be sort of analogous to appendix BB. In other words, it's the appendix for Bliss & Laughlin under TBD-6000, correct?

DR. GLOVER: That is exactly

correct.

MEMBER BEACH: Yes. And that has not been developed but you are working? You have got it partially completed?

DR. GLOVER: That is correct.

MEMBER BEACH: Okay.

DR. MAURO: So this material that came in is almost like a preview of -- as I understand it, it's quite a bit of information there in terms of how you plan to do these dose reconstructions, but it's almost a placeholder for an eventual appendix to TBD-6000. I just want to understand --

DR. GLOVER: I would say it's an outline, yes.

DR. NETON: Yes. This is Jim Neton. The question, though, is does that full appendix need to be fleshed out in order to determine whether this is either an SEC or a Site Profile issue.

DR. MAURO: Fair enough. Okay. I

think I understand.

DR. NETON: That is where we are going here. We are saying, here is how we propose to do all of these calculations, but, you know, is that enough information to make a determination that we can do it --

DR. MAURO: Got it, yes.

DR. NETON: -- one way or the other.

DR. MAURO: Okay.

CHAIRMAN ZIEMER: Yes. That is exactly the question. And, in fact, that is sort of the reason we postponed it last time, was that I think both NIOSH and SC&A as well as the Work Group Members last time based on the discussion, we were sort of in agreement that dose reconstruction could be done based on the information we had, but we didn't actually have the details on how that would come about. So we were a little reluctant to say, "Well, we'll just go ahead and not

approve a Class for the SEC." You know, in the absence of those details, it does leave one a little uncertain that okay, we're pretty confident we can do this, but we haven't really seen it yet.

MEMBER MUNN: And seeing the material that we were just sent, it was my assumption that beginning on page 5 of the material we had, which is clearly titled as an appendix on details of dose reconstruction methods, it has been my assumption that that material or something very like it would serve as exactly that, as an appendix.

CHAIRMAN ZIEMER: Right, or, as Sam described it, it's kind of an outline of what -- you know, there may be some additional detail in it, but that would be the basic technical content is my understanding. Am I correct, Sam?

DR. GLOVER: Absolutely, yes, you are.

CHAIRMAN ZIEMER: Yes.

MEMBER MUNN: It appeared fairly thorough to me. I wouldn't anticipate much in the way of --

CHAIRMAN ZIEMER: Okay. Well, as far as item 1 is concerned, in one sense, that has been answered. Now, the question is going to be I think at this point, SC&A, your level of comfort in sort of saying we're okay with that now or are you going to need some time to look at those spreadsheets and look at that methodology in a little more detail?

MR. THURBER: Well, as far as this first finding is concerned, I am comfortable, and we can move on. Now that -- when we get to some of the other ones --

CHAIRMAN ZIEMER: Yes. Right. Well --

MR. THURBER: -- we may have a little --

CHAIRMAN ZIEMER: -- I am trying

to get a feeling for --

MR. THURBER: -- higher level of concern or maybe not. But I think that I am comfortable with that this new approach circumscribes a need for this to be resolved in the context of the Petition Report, Petition Evaluation Report.

CHAIRMAN ZIEMER: Yes. I am sort of trying to get a feel for which of these things we can actually close at this point.

MR. THURBER: Yes.

CHAIRMAN ZIEMER: And am I reading it correctly? SC&A is okay on this one. Work Group Members, anyone have concerns at this point? Unfortunately I guess we don't have Mark on the line. So I'm a little concerned about that.

But let's see. Work Group Members, at this point on this first item?

MEMBER MUNN: No. I thought your initial summary was pretty good. It was my

thought that the only two action items that we had truly outstanding at this point were those 6 and 7 items.

CHAIRMAN ZIEMER: Josie or John?

DR. MAURO: Well, I guess -- this is John.

CHAIRMAN ZIEMER: John Poston --

DR. MAURO: Oh, I'm sorry.

CHAIRMAN ZIEMER: -- or Josie Beach, if they had any issues on this first one at this point.

MEMBER POSTON: I don't have any concerns at this point, Paul.

CHAIRMAN ZIEMER: Okay.

MEMBER BEACH: And, Paul, this is Josie. I just got a text from Mark. He's looking at Deepwater evidence, so not going to make the call at all.

CHAIRMAN ZIEMER: Okay.

MEMBER BEACH: As far as this goes, I would prefer to have it all spelled

out, not what is going to be done but that is just me.

CHAIRMAN ZIEMER: Okay. That's good to have that on the record. Okay. I think just in terms of sort of consensus at this point, this one we can probably indicate is probably close to closure, if not closed, but we do -- well, I think -- let me say this.

I think the technical material is basically spelled out. I mean, all you would add to what we already have, Sam, I think are some additional sort of background words and, what, additional detail or -- I mean, I don't see anything you would add in terms of the technical content, is there?

DR. NETON: Yes. This is Jim Neton. I don't know that we need to do that at this point, though. I mean, it's always been sort of established that these are proof of principle-type calculations that we would offer and not have the complete, approved,

authorized appendix in order to move the SEC petition evaluation forward. I just don't think that serves any purpose at this point.

I don't know what else, like you say, would go in there other than some explanatory text and some formatting.

CHAIRMAN ZIEMER: Right. I think the proof of principle part you have provided for.

DR. NETON: Right. That has always been sort of the criterion under which these were judged.

CHAIRMAN ZIEMER: Right. So okay. I think we can sort of look at the total picture when we're done, but in terms of where we are now, both NIOSH and the contractor, SC&A, seem to be in agreement on this particular one. I think at least three of the Work Group are comfortable in perhaps closing this one.

We don't have a category called

"Tentatively Closed," but I am going to take the Chair's prerogative and indicate that we're basically at closure on this.

Let's go to number two.

DR. GLOVER: Okay. A brief description was "NIOSH should ensure" -- this is section 7.2.3.1. That's for bounding operational period internal dose. The description was "NIOSH should ensure the text of the SEC petition evaluation was consistent with spreadsheet 2009." The tariff test correctly describes the analyses that were done.

I left it as open. I didn't think we'd closed any others. It's kind of similar to the other. I mean, we were pretty much just trying to show that the data support dose evaluation, not the final material that would be used for dose reconstruction.

I did review it. And I hope I captured what Bill was trying to do there. I

did look at our Excel sheet. I compared what we put in the report.

And they talked about some of the samples. I looked at the samples that were used. There were 20 samples that were used. The others were not used because a fan was used or that there was no operation in progress.

So of the process samples, obviously we don't use process samples when we have BZ and GAs identified. The BZs and GAs, which indicated when an engineering control was in place, they were lower. And so we chose only to use the BZs and GAs when a fan was indicated not being on.

And when I compared those 20 samples, 13 of which were BZ samples, we generated this geometric mean of 2,603 with a GSD of 2.04, which seems to be substantially the same as what we indicated in the Evaluation Report.

And then we chose because of the limited number of samples to use 5,480 dpm, which is the centerless grinding value from TBD-6000. We felt that that is obviously a more claimant-favorable number. And we chose to use that to do these dose calculations. That's what we used for the cases.

CHAIRMAN ZIEMER: Sam, I think based on, again, my review of what we talked about at the last meeting and Bill Thurber can clarify this as well, but the concern had to do with consistency between what was on the spreadsheet and what was in the written text. Is that right, Bill?

MR. THURBER: That is exactly right. That is exactly right.

CHAIRMAN ZIEMER: So it was not so much the methodology as consistency within the document as to what was said and what was on the spreadsheet. And so I guess the question now is has that been clarified sufficiently?

MR. THURBER: This is Bill. It is my impression that NIOSH has developed a new spreadsheet with new assumptions as to which sample should be included and which samples should be excluded.

And so in a sense, that makes a discussion of what we referenced and, I think, NIOSH referenced as spreadsheet 2009 as irrelevant. The numbers are all in the same ballpark. The point that we originally made is, gee, we can't take what you, NIOSH, say is the source of your information and determine that it gibes with what you said in the ER. So that was the comment, which is exactly what Dr. Ziemer said a minute ago.

Now we've got a new spreadsheet, which comes up with very similar numbers. NIOSH -- Sam explained here that the new numbers took, excluded the process samples, which is the same as before. And they excluded certain breathing zone and general

area samples this time around that were excluded on the basis that in some cases, there were no machining operations being conducted. And in some other instances, there were some fans blowing across the turning machine, which would create some results that would be misleading.

And conceptually I think that's fine. Unfortunately, I can't count the same number of samples as Sam did. So, you know, we can maybe sort that out on the side because it isn't going to substantively affect the results, but some of the samples that NIOSH excluded as being taken with the equipment turned off, we don't read the data sheets the same way. And, similarly, some of the samples that were involved with whether the fans were turned on or not, we don't read the data sheets the same way.

But, that aside, which is a detail, we understand how the new calculations

were done. And they are different from the ones that were presented as in support of the ER a year or so ago.

CHAIRMAN ZIEMER: So in a sense, the original finding becomes moot --

MR. THURBER: Exactly.

CHAIRMAN ZIEMER: -- because it's not a matter any longer of having the old spreadsheet and text agree since we now have the new spreadsheet and sort of basically the new narrative in a sense.

Now my question, though, is you still apparently have some different interpretations on how you interpret those data sheets. Is that correct?

MR. THURBER: Yes, which samples are included and which samples are excluded.

CHAIRMAN ZIEMER: Oh, okay. Yes.

MR. THURBER: And, as I say, I don't believe that we'll --

CHAIRMAN ZIEMER: The methodology

looks okay?

MR. THURBER: Yes, the methodology looks fine. And I don't believe that if you put in a few more results or take out a few more -- it's actually put in a few more results -- that the geometric mean of the distribution is going to be significantly different than the 2,603 number that NIOSH quotes. I haven't done it, but I don't think it's going to change it substantively.

MEMBER MUNN: About how large is your perceived difference in the number of items --

MR. THURBER: Specifically NIOSH included -- I'm sorry, excluded four samples, which they said, "We exclude them because the equipment was not running." We look at the data sheets and we say, "Gee, we think two of those samples were taken when the machine was running." And those were quite low numbers. So if you add two more low numbers in, it

would push the geometric mean down a little.

MEMBER MUNN: Yes, yes. So we are only talking less than a half-dozen items, then?

MR. THURBER: Yes. And there were three samples which NIOSH said were involved with -- I'm sorry. NIOSH, I believe, limited five samples because the fans were running. We think that the evidence only points out that the fans were running for two of the samples, not all five.

MEMBER MUNN: Okay.

MR. THURBER: So our reading -- and, as I say, I may have totally missed something, that there should be a few more samples included, but, as I say, I don't think it will change the numbers.

MEMBER MUNN: It doesn't sound likely.

MR. THURBER: No.

DR. MAURO: But, Wanda and Paul

and the other Board Members, by way of process, you know, it sounds to me that there is fundamental methodology and the data out there, and it's really a matter of which data you use, how do you use it.

And in this particular case, it sounds like there might be some differences of opinion on what data should be used and how it should be used. And maybe there isn't. And, even if there is, it -- there is a difference, it sounds like it has potential to have a small effect.

I think it is important to realize that we're -- you know, right now we are just -- we are really -- SC&A has not responded; in other words, has not checked this what I would -- let's call it a new or revised Site Profile with any comments.

But what I am hearing is that we are not dealing with an SEC issue here. And I think it's important that the judgments be

made right now that -- you know, SC&A has not weighed in on whether or not the details have been all ironed out, but it certainly sounds to me that we're not dealing with an issue that is unresolvable. We're dealing with the matter of just what's the best way to do a calculation.

And I think the Work Group needs to make a judgment that though maybe there are matters like this that still need to be resolved, can you move forward with a determination regarding SEC status or not without the so-called official resolution of these matters?

CHAIRMAN ZIEMER: Thank you, John. That is exactly right that the final adjudication of that is not an SEC issue. It's a detail which is a technical detail that could be worked out between SC&A and NIOSH in terms of, you know, were the samplers on or not?

And, again, as you said, it has very little effect on the bottom line, but either way we need to agree on that for dose reconstruction, but it doesn't affect the SEC issue.

See if there are other comments or questions from other Board Members?

(No response.)

CHAIRMAN ZIEMER: SC&A folks, as far as an SEC issue, you're willing to close this one?

MR. THURBER: Absolutely.

CHAIRMAN ZIEMER: And Board Members?

MEMBER MUNN: Yes.

CHAIRMAN ZIEMER: Was that Wanda?

MEMBER MUNN: Yes, it was.

MEMBER BEACH: This is Josie. I'm okay with closing that also.

MEMBER POSTON: Yes.

CHAIRMAN ZIEMER: Okay.

MEMBER POSTON: Yes from John.

CHAIRMAN ZIEMER: Okay. We will close that. Item three. Now this one ties in to some extent, maybe a lot of extent, to the first item, but, Sam, do you want to go ahead on this one?

DR. GLOVER: This, they want to be prescriptive on how we performed the -- see, this is number 3. This is for --

CHAIRMAN ZIEMER: Bounding.

DR. GLOVER: -- bounding operational internal dose. They asked that we be prescriptive on how calculations were performed for a bounding analysis. And that's what we've really tried to lay out in the appendix, is the prescription of how -- you know, just like Bethlehem Steel or any of these things, once you have determined your prescriptive method, you really aren't in a -- you aren't trying to use bounding methods anymore.

You have really laid it out pretty concisely. And there's not much sense in doing one and then the other. You know, it was kind of left bounding previously because of how the cases had been done in the past, but I went through the calculations.

As you said, we'll talk about that at the end on how we perhaps go through the contamination calculations for the floor loading and then how that -- I'm sorry. This is for the operational period, so how we determine using the 5,480 dpm per meter cubed, how we assign the intakes with 8.8 hours per day for the operating, the days of operation that they actually conducted.

And then we, of course, then used a very long-term residual contamination factor found in the FUSRAP study to include in the operational period as well. So the first day was in, I believe, February 24 -- April 24th, 1951. And they didn't have subsequent

operations until September or October of '52. So we looked at that as well.

MEMBER BEACH: Sam, this is Josie. One of the other issues that came up was that the document didn't provide any guidance on how to treat the periods in between the operations. Does that cover that also?

DR. GLOVER: Actually, in the Excel spreadsheet, I actually show how the averages and including in the documents, the appendix how you calculate the averages between the different operating episodes.

MEMBER BEACH: Okay.

DR. GLOVER: And so we generate on the first day floor loading from that 8.8-hour day of 5,480 dpm per meter cubed, what would be your floor loading from that. And that is used for the time from that '51, that March -- or April 24th until the next operating time, that 10 or 12-month period what was the contamination of the facility, what would they

have ingested, what would they have breathed in, what would they have been exposed to from that surface contamination, from that single day of operation. And then it would have started back up. And we would have again added additional contamination on top of that.

So the calculations are very detailed for how those all add together. At least I hope they are. I've tried to make it very detailed.

CHAIRMAN ZIEMER: Bill Thurber?

MR. THURBER: Yes?

CHAIRMAN ZIEMER: Do you want to weigh in on this, answering the initial question of --

MR. THURBER: I will make a couple of comments. I agree with what Sam said, that indeed they have now provided something that is prescriptive. And, in particular, it does deal with the question that was just discussed. What do you do during the periods

between the -- how do you treat the periods between the machining operations? Because the ER was silent on that. And so I think in that sense, this finding has been dealt with.

I had a couple of questions for Sam. One, what is the basis for the extra day? Is there some documentation in the literature that says that there was another machining day at the end of October of 1952?

DR. GLOVER: There was a separate weekly report that discusses an activity on that date. It's unclear to me if they -- because it wasn't a -- it was a LOOW report, if I remember correctly. So it was a summary of another facility. It's unclear to me if they made a mistake or if that was an additional activity that we don't have documentation elsewhere.

CHAIRMAN ZIEMER: You have assumed that it was?

MR. THURBER: Yes. And that is

good. It was just a matter of technical curiosity that I asked that question.

The other comment or question I would ask is this. You looked at and analyzed the dust sampling data for the four days in 1952. And from that, you calculated geometric mean and geometric standard deviation. And then you chose to use the data from TBD-6000, instead of the actual data from Bliss & Laughlin.

And you point out that that is more claimant-favorable, which on an apples to apples comparison it is, but I just wondered why you chose to go that way given the fact that surrogate data is getting a lot more -- the proper use of surrogate data or how surrogate data is being used is getting a lot more attention than it was perhaps two or three years ago.

DR. GLOVER: Well, you know, TBD-6000 still is an approved appendix or

methodology. I thought with 20 samples, that this would give us a little more confidence that we were clearly bounding the dose for this activity. You know, with operations limiting, we certainly removed some of those.

This is what I presented a year and -- basically July of 2009. And so these calculations are, as I said in my email, are really identical. I know there was a spreadsheet sent out earlier, and I -- that may have been some -- which vintage that was, these numbers match up with what I presented at the Board meeting and what we used to support our -- bound our example dose reconstructions. There's been very little change in that.

So I used the 5,480 dpm per meter cubed data to do that. And I felt pretty confident that was a good number to use.

CHAIRMAN ZIEMER: Sam, this is Ziemer. Is the thought there that, even

though you have actual data that, in fact, the actual data may not be all-inclusive of what might have been there in terms of the overall area or if you use the overall data, obviously you have uncertainties in terms of variations through the facility or breathing zone levels and so on?

Now there has to be a -- I think in a sense, Bill was asking for the rationale for why not use the actual data. Is there a reason? Obviously it tells you that had it been much higher, you would know your initial bounding was way bad, but it's the opposite.

DR. GLOVER: The one thing when I looked at the data at the time, the first operations weren't supportive of Bethlehem Steel. And in that case, they actually machined out the outside edge of the material called conditioning the billet so that they wouldn't roll those lapses into the first rolling at Bethlehem Steel. They wanted to

see what Bethlehem Steel was going to do with that continuous rolling. And so those details were provided in a document. And so it's a little different than what they did later, which was more of a straightening operation.

And they don't have any air data in that first operation. So I thought, you know, it's not all completely apples and apples. There is a slight difference in that initial operation.

And so I felt justified in using that 5,480 dpm per meter cubed.

CHAIRMAN ZIEMER: Well, Bill Thurber, does that answer that?

MR. THURBER: From my perspective, yes. You know, as I say, I think that, you know, certainly we at SC&A have been sensitized lately to the need to validate, carefully validate, the use of surrogate data.

CHAIRMAN ZIEMER: Right. Well, I think what you are saying, then, Sam, is that

although we have the actual data, it's not necessarily complete. Certainly from that first run that you were talking about, you don't want to necessarily assume that the other runs represent that one by itself because that also becomes a sort of surrogate, even though it's at the same place.

Some would argue in terms of both time and operation that it may not be the right surrogate either. You would otherwise be assuming that that run for which you don't have data is the same as the other runs.

MEMBER MUNN: And it was not.

DR. MAURO: This is John. I like the idea that when you are at this type of decision, that it's thoughtful. And you say under these -- even though there's a hierarchy of data in 42 CFR Part 82, that sort of lays out what you give preference to.

I also think that when you are looking at the data that you do have and you

have perhaps some other information that leads you to one you feel more technically comfortable with.

So we are very comfortable with the concept of not only using, for example, TBD-6000 data, which might be more claimant-favorable and perhaps a better umbrella of what might have occurred. We also believe that there are times when models are better than scarce data.

So I just want to -- SC&A's perspective is these kinds of decisions in our mind are appropriate, but it's very important that the rationale for when you decide not to use the actual data and why -- and certainly this case it's clear that you're bounding, but what you just described, no, I didn't read the details. What you just described, it was not only -- was TBD-6000 limiting, but, in addition, there were reasons why there were certain aspects of the existing data that may

not have been as complete as you would have liked. So, I mean, we accept that rationale --

CHAIRMAN ZIEMER: Okay. Thank you, John.

Board Members, any questions on that?

MEMBER MUNN: No. It appears to be perfectly valid use of surrogate data --

CHAIRMAN ZIEMER: And it is more claimant-favorable.

MEMBER MUNN: Yes.

CHAIRMAN ZIEMER: But it's not an arbitrary choice. There is a rationale for it. John Poston, Josie, questions, comments?

MEMBER BEACH: None here, Paul.

CHAIRMAN ZIEMER: SC&A, are you comfortable closing this one?

MR. THURBER: I am.

CHAIRMAN ZIEMER: Board Members, any objection to closing it?

MEMBER MUNN: None at all.

MEMBER POSTON: No.

CHAIRMAN ZIEMER: Okay. Good. Thank you.

Let's move on to the fourth one.

MEMBER BEACH: Paul, I thought we moved the fourth one to the Procedures Work Group.

CHAIRMAN ZIEMER: Hang on. Was it the fourth one or the fifth one?

MEMBER BEACH: I believe it was the fourth.

CHAIRMAN ZIEMER: Let me look at my notes here. That's correct. The fifth one is the one we closed before. Number four, that's a TIB-70 issue, right, and moved to the Procedures?

DR. MAURO: Yes, that is correct. This is John. The one percent per day is a generic issue that we are engaged in right now on OTIB-70.

MR. THURBER: This is Bill. Indeed, what John said is correct. But I would note that in the proposed appendix to TBD-6000 covering Bliss & Laughlin, NIOSH has set that method aside and gone to a method that in the past SC&A has indicated that they much prefer, namely by fitting an exponential function to an initial point and a measured endpoint.

So from the perspective of Bliss & Laughlin, this comment is moot because they have changed the way they are doing it to a technique that we believe is superior.

CHAIRMAN ZIEMER: Sam, do you have a comment on that?

DR. GLOVER: Just to say that we detailed the calculations to show that we use a longer half-life than one percent. It is part of TIB-70. And, you know, they're using the surface-loading calculations and then the values from modern day measurements to see

what the surface values were.

So yes, we did use a different number, much longer half-life in the facility, as discussed.

CHAIRMAN ZIEMER: In this particular case, the reason for not using TIB-70, then, is that you have some numbers. Is that correct?

DR. NETON: The TIB-70 is used. It's just a different approach. There are seven prescribed approaches in TIB-70.

CHAIRMAN ZIEMER: Oh, okay. Yes.

DR. NETON: The one that is under discussion at the Procedures Subcommittee level is the one percent per day depletion factor, but here I believe from what I have heard, we have initial or operational surface contamination and post-operational surface contamination. And that is used as a basis to determine the depletion rate, which is a superior value.

I would say, though, that I think the 1 times 10 to the minus 6 was probably used in that calculation. It's also -- at the Procedures Subcommittee level.

CHAIRMAN ZIEMER: Right. So half of it is and half of it isn't, then, in a sense, right?

DR. NETON: Exactly.

CHAIRMAN ZIEMER: Yes. So it's either -- the 1 times 10 to the minus 6 definitely came out of the TIB-70 thing. And then you have actual values for the rest, which means you don't have to assume a different model. So it's kind of a combination.

Just checking the transcript, we had previously agreed to pass this on to TIB-70. And in a sense, that is correct for the one value that you -- referencing that. Then you're using actual values for the rest of that calculation.

So I think what I am hearing is that SC&A agrees that this meets their concerns. And it certainly seems to me that it would close the issue. It's a combination of closure and transfer, but it seems to me we can go ahead and close this in that regard.

Board Members, are you in agreement on that?

MEMBER MUNN: Yes. Wanda.

MEMBER POSTON: Fine with me.

MEMBER BEACH: That is fine with me also.

CHAIRMAN ZIEMER: Okay. Very good.

Item five we had already closed. Actually, it wasn't even, really -- I think we agreed it wasn't really a finding. It said that the original statement was just a statement of concurrence originally. So it's just a comment.

MEMBER MUNN: Yes.

CHAIRMAN ZIEMER: Number six was bounding the residual period. And, actually, six and seven now are the ones that originally we had sort of focused on as wanting more detail.

So, Sam, why don't you talk about -- you can talk about them individually or together, if you want.

DR. GLOVER: They are highly linked. Number six is bounding the internal dose during the residual period. And so we did use -- it's highly linked to number four. We developed a surface contamination loading. And then you deplete that as a function of time.

And so that data is then used to -- I used the 1 times 10 to the minus 6 factor, which is out of TIB-70, probably TBD-6000 as well, to take that decay corrected value and then just in each interval because I had to come up with 1952 averages, 1951.

So you'll see all of the details between the different operations -- that into the residual period, but you'll see those surface loading and then depletion calculations using that very long half-life to determine what was the floor loading, how much then it would be resuspended in air, which is based on 1 times 10 to the minus 6 factor, and use those with the tabled values for how much dose you would get from handling or being in a contaminated area, floor loading, how much dose would you get from the air contamination, how much dose would you get.

Obviously in the residual period, there's not any handling of direct metal. You're only dealing with contaminated surfaces. And so those are highly linked because then that also then will drive.

So that's your external component and your internal component together, how much is in the air, how much is on the floor.

Ingestion came from TIB-9. And that's the document. So it's basically straight from that, develop the ingestion factors.

And so essentially 6 and 7 are highly linked because you have to develop the floor loading. And it's air contamination from that floor loading values. And then they both support external and internal dosimetry.

CHAIRMAN ZIEMER: Okay. I do have one question in that regard. And, Bill Thurber, help me on this. You guys raised the issue last time of a 16-hour day. And I think, Sam, you're using -- what was it, eight and a half or a different value?

MR. THURBER: This is Bill. What you said, Dr. Ziemer, is correct, but I believe in looking at the calculations that NIOSH provided, although we haven't looked at them exhaustively, that the use of -- I think they used, actually, an 8.8-hour day --

CHAIRMAN ZIEMER: Yes. I knew it

was eight something.

MR. THURBER: -- is appropriate to the nature of the work that was done at Bliss & Laughlin. So that is one of the several things that was changed in the new work.

CHAIRMAN ZIEMER: Okay. Did you have any other comments on 6 and 7, Bill?

MR. THURBER: I might make this comment. We talked a little bit about the fact that some of this, the one percent per day and the resuspension factor of 10 to the minus 6 are things that are being reviewed by the Procedures Work Group.

And one of the things that was discussed in some detail here a few weeks ago with that Work Group is the fact that if you use a depletion factor of one percent per day, that is inconsistent with assuming a resuspension factor of 10 to the minus 6.

And we made the point, and I believe that NIOSH generally concurred, that

when you're dealing with resuspension factors and depletion rates, that the numbers should be compatible, if you will. And a second point is that in the past, SC&A has frequently argued that a resuspension factor of 10 to the minus 6 may be too low.

We have kind of refined our position over the last year or so. And we believe that if there is some evidence that the workplace was cleaned up after a particular operation, that a value of 10 to the minus 6 is probably -- for the resuspension factor is probably not unreasonable.

And there is evidence here in the case of Bliss & Laughlin, I believe, -- and I think Sam mentioned it or maybe it was mentioned in the document -- that the stuff was cleaned up and the oxide was carted off the same day or the day after the machining operations were done. So my feeling is that

the use of 10 to the minus 6 for the resuspension factor of Bliss & Laughlin is reasonable.

And the other point I would make is this. And, Sam, correct me if I am wrong, but the surface deposition from which -- to which you apply the resuspension factor, was calculated using this air concentration from TBD-6000 that we talked a little bit out earlier of 5,400 dpm per cubic meter.

And that is a high number relative to the air concentration that was actually measured at Bliss & Laughlin. So that certainly appears to be a claimant-favorable approach.

CHAIRMAN ZIEMER: Is that correct, Sam?

DR. GLOVER: That is correct.

CHAIRMAN ZIEMER: What is the bottom line on these two then? Bill Thurber or John Mauro, has SC&A seen enough on this to

be comfortable, or do you need to look at anything anymore?

DR. MAURO: This is John. I just have one question with regard to the residual period dust loading. So it's not that you -- I wasn't quite sure because Bill looked more closely at this. And, Bill, maybe you could help me, too.

Is the 10 to the minus 6 used as the way to get the slope? In other words, are there air concentration measurements during operation that then after that is over, then that air dust loading is assumed to decline at a rate consistent with the resuspension factor of 10 to the minus 6 per meter, or is it the residual activity on the surface after cleanup that is used to get the airborne concentration -- I'll call it the residual period and apply the 10 to the minus 6? So I wasn't quite sure how the 10 to the minus 6 per meter resuspension factor was being used.

DR. GLOVER: So real quickly, I took the air concentration data, that 5,480 dpm per meter cubed, let that run 8.8 hours all day long, and used the deposition value that we generated for floor loading.

DR. MAURO: Okay.

DR. GLOVER: I used that for five days, the last five days of operation, so I could accumulate how much stuff would be on the floor.

DR. MAURO: Okay.

DR. GLOVER: And then said, "Okay. Let's run that to what they found in the FUSRAP. When they did the FUSRAP measurements, what data did they have then?" And I took the highest smearable data that they had for surface loading. So this is based on surface contamination limits.

DR. MAURO: I've got it. So you've got a beginning surface based on the deposition model, which we already reviewed

and approved and accepted. And then you actually have some measurements of surface contamination at the end of the FUSRAP period. And so now you have got a beginning and end. And it is to those values that you applied the 10 to the minus 6 resuspension factor to get the airborne dust load.

DR. GLOVER: That's correct.

DR. MAURO: Got it. All right.

And, Bill, what I heard from you is that during the time period after the operation was over, that there was a cleanup that immediately followed. So your sense is -- and we all have come to the same place on this. If you do have a cleanup, the 10 to the minus 6 is a reasonable thing to do as recommended in NRC NUREG documents. And so that is the fundamental strategy you guys have adopted.

MR. THURBER: That is what I understand, yes, John.

DR. MAURO: Okay. Thank you.

And with that approach, I mean, I can just speak that what was just described to me and as I understand it, that is entirely consistent with our position here and in many other places where we have discussed these matters.

CHAIRMAN ZIEMER: Okay. Thank you, John and Bill.

Board Members, any questions on this? It appears to me that we have agreement between both NIOSH and SC&A on this approach. And if that is the case, unless we have questions ourselves we would be in a position to recommend closure on these two items.

MEMBER MUNN: My position is that this is more than adequate for the limited amount of exposure that these folks had in a few days of operations. It is very well-documented. I don't see how we could possibly ask for more data.

CHAIRMAN ZIEMER: John Poston, Josie, comments, questions?

MEMBER POSTON: I am fine with it, Paul.

CHAIRMAN ZIEMER: Okay. Are you okay to close, John?

MEMBER POSTON: Yes.

CHAIRMAN ZIEMER: Josie?

MEMBER BEACH: I don't have any questions right now.

CHAIRMAN ZIEMER: Okay. Now what I am seeing here now based on what we have covered is that we would be in a position to recommend or make a recommendation to the Board that we have substantial agreement between NIOSH, the contractor, and the Work Group on the issues that have been raised on the contractor review of the Evaluation Report -- SEC class.

My question would be are we all comfortable with making that recommendation at

the upcoming meeting. And if we are, what we would need to do, I think, Sam, we would probably have to re-present the petition evaluation as it now stands.

And then I would report that SC&A had reviewed all of the items and has looked at the modifications or the responses and that we have agreed that all items are closed and that the recommendation would be that we agree that NIOSH can reconstruct dose and, therefore, would not recommend an SEC Class for this facility.

MEMBER BEACH: Paul, this is Josie. I have a quick question.

CHAIRMAN ZIEMER: Sure.

MEMBER BEACH: Are you by any chance going to try and get a hold of Mark to let him know where we're at?

CHAIRMAN ZIEMER: I will certainly be glad to do that. I have tried to get a hold of Mark recently just on closing out the

TBD-6000 itself. And Mark is very busy, but I certainly would do that. And, again, this would only be a recommendation.

And, actually, we have a majority, even though Mark isn't here, but I don't know what else to do at this point. I mean, I can't guarantee that I can actually reach him before the meeting.

DR. NETON: Dr. Ziemer, this is Jim Neton. We've got sort of just a process question here. You mentioned something about NIOSH presenting or re-presenting the Petition Evaluation Report.

CHAIRMAN ZIEMER: Well, I was looking at just thinking about for refreshing the Board's memory on this whole facility. We need to have the description of the facility and what the recommendation is. That was presented, I think, a year or so ago.

And there have been a few changes since then, but I was thinking that there

would be kind of maybe an abbreviated version, Sam, of what you presented before, just your slides and the final recommendations.

DR. NETON: The problem is Sam is not going to the Board meeting.

CHAIRMAN ZIEMER: Okay.

DR. NETON: But, you know, we could do something. And that's why I'm trying to get a handle on what really we need to do here.

CHAIRMAN ZIEMER: Sam, you distributed or you sent me this morning -- were those revised slides, or was that the exact slides you presented before?

DR. GLOVER: Those were what was presented. There were no changes to those.

CHAIRMAN ZIEMER: Okay. Would those change any based on this material? Has anything in there changed?

DR. NETON: I was just talking to Sam about that. And I don't think so. You

know, mostly what Sam has done has --

CHAIRMAN ZIEMER: Yes, has just responded to the question --

DR. NETON: -- more detail.

CHAIRMAN ZIEMER: Yes, yes.

DR. NETON: I think there's one reference in here to TBD-6001 that would be no longer applicable, but other than that, I think nothing has really changed.

MR. KATZ: Paul, this is Ted.

CHAIRMAN ZIEMER: My only point is if we're going to make a recommendation to the Board, they need to have something to refresh their memory on what do they do at Bliss & Laughlin, what are the years, and --

MR. KATZ: Paul?

CHAIRMAN ZIEMER: Yes?

MR. KATZ: Paul, this is Ted. Can you hear me?

CHAIRMAN ZIEMER: Yes.

MR. KATZ: Okay, so I just want to

make a suggestion here. Why don't we -- I can distribute the PowerPoint that Sam sent along that is from the last presentation to all the Board Members.

CHAIRMAN ZIEMER: Sure.

MR. KATZ: And I think, Sam, if you will be available by phone for questions, then we can have that piece in place, too. But they can read the PowerPoint. They have, of course, the SEC Evaluation Report as well. Sam can be available for questions. And otherwise I think the Work Group can sort of bring people up to date on what the Work Group did.

DR. GLOVER: I certainly would make myself available. And from the presentations, there are very minor changes perhaps on the tables that had some specific values. They may have increased very slightly with the change in the TBD-6001 going away. So, again, very minor changes to this -- so I

think that would be fine. If you re-present that or resend that out, I will make myself available. And certainly Dr. Neton and --

CHAIRMAN ZIEMER: And then I would make a brief presentation to cover what issues had been raised by SC&A. And, of course, John, you would be there or who is going to be there for SC&A?

DR. MAURO: Yes. I will be there, but hopefully Bill will be on the phone.

CHAIRMAN ZIEMER: Sure. And then we would just present what the issues were and how they were resolved and then make a recommendation.

Now, Ted, let me ask you this. The Board has asked recently that if we are going to take action on a site, that the Board know that in advance. Do we have enough -- I don't think we actually showed it that way. Did we in the --

MR. KATZ: Yes, we did.

CHAIRMAN ZIEMER: We show it as an action?

MR. KATZ: We did.

CHAIRMAN ZIEMER: Okay. Then we'll --

MR. KATZ: Pretty sure. Let me -- before -- yes, I did. I'm just checking the annotated agenda. Yes, I did show it as an action.

CHAIRMAN ZIEMER: Okay. Okay. We don't want to spring this on anybody --

MR. KATZ: Right.

CHAIRMAN ZIEMER: -- if there's not enough --

MR. KATZ: No surprises.

CHAIRMAN ZIEMER: Well, that would be the plan. Let me see if there are any objections to that. In other words, we re-show the NIOSH presentation. Sam, do you have time to tweak those if there are some number changes?

DR. GLOVER: I think the change would be minor.

CHAIRMAN ZIEMER: Yes.

DR. GLOVER: If Jim and them will let me. There is a certain time frame that they try to hold me to.

DR. NETON: Yes. I think we will give it a shot. I think we can do it.

CHAIRMAN ZIEMER: Well, if not, can we just verbally say that those numbers have changed slightly based on the technical discussions, or do we --

DR. NETON: Yes, we can do that. I'm getting a sense that we want to have this loaded up, though, and available for viewing. Is that what I'm --

MR. KATZ: This is Ted again. I guess, Paul, my only worry about that, about having them -- is we are already here on Wednesday. And I would like to get this information, both the PowerPoint and the copy

of the Evaluation Report, out to all the Board members right away because I don't know. I mean, some of them probably are starting now preparing for next week.

CHAIRMAN ZIEMER: Well, I think there is sort of a practical process issue and it's sort of within the agency. We do have to allow them time to do what they have to do. And if there's not enough time, then we postpone the action. We could probably even act on this one by phone at the next phone conference.

But, you know, NIOSH and even the Board members just -- I don't want to be in the position of saying that we're just going to railroad this through. Actually, for this facility, as a practical matter, most of the dose reconstructions have already been done, number one.

I believe there's only like two outstanding ones at the moment. So I'm not

sure if there's a great sense of urgency on this in terms of actually coming to closure but that, if we're able to get it off the Board, that's fine. If not --

DR. NETON: Dr. Ziemer, this is Jim. I just talked to Sam offline here a little bit. He thinks that we can get any of the changes that need to be made done today. And if we can get our review process out through today and early tomorrow, we can get this available to the Board by tomorrow sometime. Do you think that is sufficient time?

MEMBER MUNN: That should be sufficient time. It's not as though this is new information that anyone has to absorb from the beginning. It's been presented.

CHAIRMAN ZIEMER: This is not really a very complex site either.

MEMBER MUNN: No.

CHAIRMAN ZIEMER: So the operation

is fairly straightforward. It's a small site. It was limited work there. It's not like many other sites we've handled.

MEMBER MUNN: No. We're talking about --

CHAIRMAN ZIEMER: I would say if you can do that, fine. You know, again, I don't think there's a great sense of urgency. If we can't do it within the framework, we just postpone the action until the next time.

Ted, what do you think on that?

MR. KATZ: I mean, that is true. It sounded to me like what we are doing in terms of analysis is very minor. And, you know, if we postpone it to the next time, that just adds one item to the next Board's meeting. So just personally, where we can knock these things off, I think it would be good.

CHAIRMAN ZIEMER: Well, let's see if we can do it.

DR. NETON: This is Jim. When we get this done, how do you want this distributed: from us directly to the full Board or --

MR. KATZ: Given the timing, that would be great if you just -- and you are talking about revising the Evaluation Report?

CHAIRMAN ZIEMER: No.

DR. NETON: Just the --

CHAIRMAN ZIEMER: Just the slides I think, right.

MR. KATZ: Okay. Well, I mean, if you just -- okay. I mean, yes, absolutely --

CHAIRMAN ZIEMER: You are only talking about a couple of numbers on a couple of slides I think, aren't you?

DR. NETON: The Evaluation Report doesn't change. It is just a couple of numbers on I think maximum three slides.

CHAIRMAN ZIEMER: Okay.

DR. NETON: Then we can reissue it

to the Board.

MR. THURBER: This is Bill Thurber. I would urge you to look at the last slide in the package. It says, Feasibility Findings to the Bethlehem Steel SEC Petition. You might want to change that.

DR. NETON: You're right.

MR. KATZ: Okay. That doesn't sound like a problem at all.

CHAIRMAN ZIEMER: Can you get that through the approval process?

DR. NETON: I think we can handle that.

CHAIRMAN ZIEMER: Thank you.

DR. NETON: We'll try to get this done today and out the door by tomorrow sometime. Sam, I guess you --

MR. KATZ: That's fine. Sam, you can send it to me. And I'll distribute it to the Board.

DR. GLOVER: That is good. That

is great.

DR. NETON: Because then maybe you can give him a little of couple sentence as a heads up as to why they're getting --

MR. KATZ: Absolutely.

DR. NETON: Okay. Great.

CHAIRMAN ZIEMER: Okay.

DR. NETON: We will try to get that done by tomorrow as soon as possible. And I've got to talk to Chris Ellison about that, but --

MEMBER MUNN: Should the slides be accompanied by a note from either Paul or Ted about the results of the Work Group deliberations today?

CHAIRMAN ZIEMER: Say it again, Wanda.

MEMBER MUNN: Should the slides be accompanied by a note from either Ted or you indicating the results of the deliberations we have had today?

MR. KATZ: Wanda, I'm not going to summarize the deliberations today. I'm just going to let them know that this will be presented by the Work Group but that the slides were revised as a result of the Work Group's interactions with SC&A and DCAS.

MEMBER MUNN: I wasn't suggesting a summary. I was just suggesting that a note indicate that all of the action items have been closed by the Work Group.

MR. KATZ: I mean, I will let the Work Group report out. I'm not going to report out for the Work Group. I will just let them know that they know this is on the agenda and that these materials, we have to prepare them.

MEMBER MUNN: That is fine.

CHAIRMAN ZIEMER: Have we normally done that? I don't think the work groups have normally notified us in advance, have we?

MEMBER MUNN: Not ordinarily, no.

MEMBER BEACH: No. I think, Paul, that would be something you would do, right?

CHAIRMAN ZIEMER: Right.

MEMBER MUNN: Yes.

CHAIRMAN ZIEMER: But I don't think that has been done in the past, has it?

MEMBER MUNN: Not often.

MR. KATZ: No, no.

CHAIRMAN ZIEMER: I am not sure they ever have.

MEMBER MUNN: Well, on one or two occasions. One occasion I can remember some information was provided. But it was not a formalized thing. No, no. It's just fine.

CHAIRMAN ZIEMER: Okay. Well, I need to prepare a presentation myself. I can do that over the weekend. And then whatever I prepare, I will try to get out to the Work Group members. And I also will try to reach Mark and try to summarize for him, see what concerns he may have as well.

5. GSI UPDATE:

A. OVERVIEW OF RECENT DOCUMENTS RECEIVED FROM GSI PETITIONER

CHAIRMAN ZIEMER: Okay. Let's proceed. We have one final item, and it's a GSI update, General Steel Industries. And we are not going to have any technical discussions on this.

But for the record, I want to make sure that it's in the record that this past week we received a document. And you should have all received it, actually a reference to a paper on air activation related to high-energy accelerators. And I sent that reference to the Work Group. And I want to make sure. And that came from Dr. McKeel, the petitioner.

And then I think also we had another document. I believe, Ted, you agreed you would read it into the record. Isn't that correct?

MR. KATZ: That is correct, Mr. Ziemer.

CHAIRMAN ZIEMER: Why don't you go ahead and do that?

MR. KATZ: Okay. So let me just preface this. This is a little bit lengthy, but I will try to read quickly. I have given the letter to James, our court reporter, so that if I am reading too quickly for his ears, we should be okay. But I'll try to do this clearly, even though quickly.

So this is dated February 9th, letter from Dr. McKeel to Dr. Ziemer, Dear Dr. Ziemer.

I ask that this letter be read into the Work Group official record and made part of the transcript for the February 16, 2011 TBD-6000 Work Group meeting.

Several points I wish to make to the Work Group as they consider making a recommendation on the General Steel

Industries.

One, sensitivity to greater than 1 MeV photons of Landauer GSI badges has not been sufficiently discussed by NIOSH. GSI site expert Ron Kobiske, physicist and former head of the Physics Department and Betatron program at Milwaukee School of Engineering, indicates the higher energy 1 to 25 MeV betatron photons are not captured and measured by standard Landauer film badges.

I wrote to Dr. Ziemer asking for a thorough technical discussion of this topic at the TBD-6000 Work Group level on 2/16/11. The meeting agenda has not been issued as I write.

Number two, betatron component activation. Elements with a t1/2 greater than 15 minutes, IMRT article sent to the Board and circulated to TBD-6000 Work Group members, have been identified in this new article and in many publications the GSI co-petitioner and site expert John Ramspott have previously

brought to the attention of the Work Groups. Internal component chronic activation can account for betatron residual radiation after the beam is turned off. See reference 1.

Number three, Allen path forward. The co-petitioner requested a progress report to define what, quote, information reviews, unquote and, quote, calculations, unquote, that NIOSH has been doing the past 3.5 months since the October 12, 2010 TBD-6000 Work Group met have not yet been answered as of 2/9/11.

Four, Appendix BB. SC&A findings in a cover letter dated April 21st, 2008, of a 92-page report to contract officer Mr. Carl Staudt of CDC included the following, italics and bolding added for emphasis.

A) According to Appendix BB, betatron operators, who had the limiting exposures of all GSI workers, spent two hours per shift at a distance of six feet from the activated betatron apparatus and in the

vicinity of irradiated steel. Our finding is that they spent over four hours per shift at distances of three to six feet from the betatron, during which time they were exposed to the irradiated steel.

As a result, their external doses per eight-hour shift were more than four times as high as those calculated in Appendix BB.

B) The recollection of a group of former workers was that overtime work was the norm and that a 65-hour week was a reasonable estimate of their work hours. We, therefore, conclude that they worked approximately 3,250 hours per year, as opposed to the 2,400 hours per year assumed in Appendix BB. This would result in an additional 35 percent increase in their radiation exposures.

C) We identified several errors in the calculations of external dose rates from irradiated uranium that were furnished to us by OCAS. As a result, we found that the dose

rates were overestimated by a factor of 16.

According to our models, the daily external rates from the radiography of steel and of uranium were about equal. Therefore, we found that the annual external dose rates were relatively constant from year to year, rather than varying with the amount of uranium radiographed each year.

D) We estimated annual external exposures of the betatron operators of about 12 rem per year for 1952 through 1963, when only the 24-MeV betatron was in operation and about 14 rem per year for 1964 through 66, after the 25-MeV betatron was installed. One half of the annual dose was received in 1966, since the contract ended on June 30th.

These exposures are two to six times the external exposures listed in Appendix BB.

E) According to Appendix BB, workers who did not perform betatron

radiography or handle the metal within two hours of irradiation are to be assigned exposures of .72 millirem per hour.

Our analysis identified locations on the foundry floor, to which such workers had unrestricted access, that had exposure rates as high as 50 millirem per hour while the betatron was in operation. Locations on the roof, accessible to maintenance workers servicing ventilation equipment, had exposure rates of up to 1,000 millirem per hour.

Contrary to the assertion in Appendix BB, radiography employing the 60 cobalt sources could produce higher dose rates than the betatron radiography. In the absence of detailed information on the locations of their work stations and the time spent on various tasks, we were not able to arrive at bounding estimates of external exposures of workers maintaining ventilation equipment, nor of those in the vicinity of the 60 cobalt

radiography sources, unquote.

SC&A thus identified very important findings in Rev 0 of GSI Appendix BB that was issued on June 25th, 2007 and not revised since then. The parent document, Battelle TBD-6000, that was issued 12/13/06 has also not been revised. About 96 percent of the 276 GSI dose reconstructions have been completed by NIOSH based on the technically flawed Appendix BB.

DOL, parentheses, DEEOIC, Director Rachel Leiton, unparentheses, has informed the GSI co-petitioner that his perceived efforts to have denied GSI claims reopened cannot happen until all appendix issues have been resolved and the Board has certified the new information is valid and the SC&A findings, such as those referenced in A through E have been also resolved.

Five, the SRS Work Group on September 3rd spent 1.5 hours discussing

sparse bioassay results as being too few to be representative of the entire workforce. The TBD-6000 Work Group apparently believes that NIOSH's total lack of urine bioassay individual monitoring data in the GSI workers is unimportant.

Six and last, SECs are being handled in a non-uniform way and wildly different criteria and lengths of time considering individual SECs are being used by the Board to recommend them for approval or denial. See item 5.

As but two examples from sites on which I am co-petitioner, NIOSH claims it can validly use very limited surrogate film badge data from 108 of 3,000 GSI workers, parentheses, 3.6 percent, unparentheses, to bound external exposures during the residual period.

At Dow Madison, NIOSH used very limited surrogate film badge data from another

Dow plant that NIOSH has failed to justify as being similar to the Dow Madison.

For GSI and Dow, in contrast, NIOSH lacks any workforce urine bioassay samples for uranium or thorium while claiming, nevertheless, that they can reconstruct intake internal photon doses with sufficient accuracy. Yet, this fact has raised nary a question from any member of the Board.

This petitioner wonders why different criteria are being applied to large DOE sites, such as SRS, as compared to GSI, which, with up to 3,000 employees, is one of the larger AWE sites based on the numbers of claims, question mark.

Respectfully submitted, Daniel W. McKeel, Jr.

That concludes the letter. He asked that it be read into the record.

CHAIRMAN ZIEMER: Okay. Thank you very much, Ted.

And, as I indicated before, we are not going to actually discuss that record, but we assured Mr. McKeel we would read it into the record. This could be part of the discussion in our face-to-face Work Group. This phone call today was directed primarily at Bliss and Laughlin, and I indicated to Dr. McKeel we would not be discussing actual technical issues for GSI today.

The other item that I referred to on GSI, the paper I referred to, just for being more specific, the paper by James Welsh and coworkers from the University of Wisconsin, it's called High Energy Photons in IMRT. That's an acronym, IMRT, intensity modulated radiation therapy. And the rest of the title is Uncertainties and Risks for Questionable Gain. It has to do with activations or includes discussions of activation of accelerator components and that sort of thing.

So I just want to make sure that everyone got that and has a chance to familiarize yourself with that prior to the next meeting.

B. STATUS OF NIOSH PATH FORWARD ON GSI

CHAIRMAN ZIEMER: The final thing relating to GSI, which I put on the agenda, is the status of the NIOSH path forward. At our face-to-face meeting in October, Dave Allen presented a White Paper, which was referred to as the path forward. And it indicated a number of steps that were going to be taken by NIOSH to come to closure on dose reconstruction approaches at GSI.

One of the questions that arose was, when will this be done? And where is it on the priority list with all of the other things that NIOSH is doing?

And we don't really have the answer to that, but I want to make you aware that we hope to have a timetable clarified in

the near future with NIOSH as to when they will be done with the path-forward materials for the Work Group to review and for SC&A to review and when we might come to closure overall or on the GSI.

So that is sort of the question. I don't think we have an answer to that at this point and probably won't for a little bit.

But I would ask Ted, if you can speak to the issue, in terms of what has to happen for us to get sort of a timetable.

MR. KATZ: This is Ted. I'm sorry. There is another phone ringing at the same time. I hope it is not disturbing here.

I have spoken or traded e-mails and so on with several of the parties. Stu Hinnefeld is out of town until the end of the week. And I am hoping that there is time to have a discussion with Stu and Dave Allen and others who are involved prior to the Board

meeting so that we can discuss what resources are available because that is going to affect the timetable that they produce.

So that's why we don't have an answer right now. And I hope to get it. You know, best case, I hope to have at least some indication that I can tell you about at the Board meeting but if not, soon thereafter.

CHAIRMAN ZIEMER: And I will just add to that, that the ability of this Work Group to come to closure on GSI is very dependent on those documents in terms of when we get them and also SC&A in terms of what review needs to be done by them.

So there is kind of a domino effect sort of thing here. We need to know how far out we're talking in terms of when documents will be available.

And one of the concerns I have as Chair is if that time horizon stretches too far into the future, if we're going to be sort

of marking time for an extended period, what the implications are of that in terms of decision-making.

GSI is one of those sites that we have been dealing with for a fairly long time, measured in years. So we need to come to closure on it, in my mind, as soon as we can. It is stretched out. Clearly there have been some changes in terms of information and documents available that have affected this, but, nonetheless, the time has stretched out. And we do need to come to closure.

So I just wanted to have that on the record that we are trying to get the commitment from NIOSH as to when we might expect the documents and how they are prioritized with respect to other sites and other issues that are being handled and, again, being aware there are limits to both resources in terms of time and personnel.

So that is all I can say on that

at this point. I would ask other Board members if you have questions or comments relating to that.

(No response.)

CHAIRMAN ZIEMER: In the silence, I assume not.

MR. KATZ: Let me just say, Paul, when I say your perspective on the need for finalizing this at this point with GSI and from that perspective, I'm bringing to the discussion with DCAS, whenever I can have it, with Stu and Dave Allen and others.

CHAIRMAN ZIEMER: Okay. Thank you.

That completes our business for today. I'll give an opportunity for any other final comments that anyone might have.

(No response.)

CHAIRMAN ZIEMER: If not, I thank you all. And we stand adjourned.

MR. KATZ: Thank you, everyone.

(Whereupon, the above-entitled matter went off the record at 12:47 p.m.)