 

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 WELDON SPRING

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TUESDAY
NOVEMBER 29, 2011

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The Work Group convened via teleconference at 9:00 a.m. Eastern Standard Time, Michael H. Gibson, Chairman, presiding.

PRESENT:

MICHAEL H. GIBSON, Chairman
RICHARD LEMEN, Member

 

ALSO PRESENT:

TED KATZ, Designated Federal Official
ISAF AL-NABULSI, DOE
RON BUCHANAN, SC&A
STU HINNEFELD, DCAS
KAREN JOHNSON
MARY JOHNSON
JENNY LIN, HHS
JOHN MAURO, SC&A
ROBERT MORRIS, ORAU Team
MARK ROLFES, DCAS
TINA TRIPLETT

 

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

 

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

9:05 a.m.

MR. KATZ: Okay. So, I think we're all here. Let's get started. This is the Advisory Board on Radiation and Worker Health, Weldon Spring Work Group, and let's begin with roll call.

(Roll call.)

MR. KATZ: All right, good. I think we're set to go then. A few reminders. Everyone when they're listening, except when they're speaking to the group, please mute your phones.

You can press *6 if you don't have a mute button, to mute your phone. And then *6 to take your phone back off of mute.

And, also, if you need to leave the call at any point, please do not put the call on hold, but hang up and call back in because the hold will upset the call for everyone else.

 

I have sent out an agenda for the meeting. It should be getting posted this morning, if it's not posted. I also asked that it be sent to the petitioners, but this was all done last night.

I don't know whether it's arrived, but it's a very brief and simple agenda and I'll let Mike go through it if he wants. And that's it.

It's your meeting, Mike.

CHAIRMAN GIBSON: Okay. Thanks, Ted.

Well, I guess we can just jump right into the agenda and get to the first issue. We're going to discuss the remaining issues from the matrix, and the first one is the data completeness, Section 1a.

So, it looks like we have a NIOSH position, SC&A review, NIOSH reply, and an SC&A response.

SC&A, do you want to briefly tell

 

us where you stand on the issue?

DR. BUCHANAN: Okay. We discussed this at the September 13th meeting. We presented our report to the Working Group there.

We found out, just to summarize -- I'll do a brief summary of these issues so that everybody is on the same page.

This was mainly was the data records verified and adequate. And we found that NIOSH is not going to use the CER database. And so, they're only using the original handwritten or computerized datasheets, the original ones, photocopies of them.

And so, that takes out the question of accuracy, because these are photographs of the original records and they are legible.

And so, that came up in the May meeting then, are they complete and -- and

 

complete, yes.

And so, the Work Group charged SC&A with doing an initial test to see if there was any problems with the completeness of the data like was there gaps in certain years or anything.

And so, we submitted a plan and that was approved. And then SC&A conducted an initial, brief analysis of the data then in June and July, sent that to the Work Group on the 15th of August, and then presented that at the September 13th meeting.

And, essentially, we found that in this initial test -- we tested 15 cases of workers that were likely to have been exposed and, therefore, should have been externally monitored and bioassayed the majority of the time, and we came up with a final report which went out on the 15th of August, which showed around 90 to 95 percent of the workers, for these 15 workers, that they were badged or

bioassayed during their work period at Weldon Spring.

And so, we presented that for the Work Group's consideration on the last meeting. And we have no more input into that at this time. We were not charged with any other task for that.

CHAIRMAN GIBSON: Okay. And just for my benefit, can I ask NIOSH why they chose not to use the CER database?

MR. ROLFES: The CER database hasn't been needed, because we currently believe that the people who needed to be monitored were monitored and we have monitoring data for each of the claimants that was involved in uranium production processes at the Weldon Spring plant.

So, we haven't had a situation where we needed to use the CER data.

DR. BUCHANAN: Okay. This is Ron.

The CER database, the way I

understand it, did not contain any data that the original handwritten ones contained -- it didn't contain any additional data. And there was a question of whether it contained all the original data, and so that was the original question on the CER database.

And so, we feel that it's best not to use CER database.

CHAIRMAN GIBSON: Okay. Dr. Lemen, do you have any thoughts on this issue?

MEMBER LEMEN: No, I don't.

Do you hear me?

CHAIRMAN GIBSON: Yes. Is there any comments from the petitioners on this issue?

MS. JOHNSON: I don't think we have any more questions at this time.

CHAIRMAN GIBSON: Okay. So, are we ready to close Issue 1a?

COURT REPORTER: If you could please identify yourself.

 

MS. JOHNSON: I'm sorry. This is Karen Johnson.

COURT REPORTER: Thank you.

CHAIRMAN GIBSON: Dr. Lemen, are you comfortable with closing 1a then?

MEMBER LEMEN: Yes.

CHAIRMAN GIBSON: Okay. We'll consider that closed and we'll move on to the next bullet, which is blunders, 1b.

Who wants to take that? Is it DCAS or --

MR. ROLFES: That's fine. Mike, I can take care of that. This is Mark.

Yes, I realize it's late in the -- I didn't give you much time to take a look at this since I only was able to get the electronic copy out to you yesterday.

The majority of the report is the exact same as the original revision that we had sent out. However, we were asked by SC&A and the Work Group, I believe it was at the

 

last Work Group meeting, if we could quantify how the blunders would impact the doses that we would assign during the dose reconstruction process.

And so what we went back and did was to look at each individual blunder and determine -- we looked specifically at the arithmetical errors. We looked at how those arithmetical errors would impact the thorium intake rate.

And at the 95th percentile, in summary, the -- let me pull that up here. It was roughly four percent. So, the thorium intake rate after incorporating the blunders, the thorium intake rate at the 95th percentile went up by four percent.

So, not a very significant amount, but that will be included in the revised intake approach for thorium.

I'm trying to find the page on which the report states that. Okay. All

 

right. Here we go. I can read that summary. It's on Page 7 of 14. It's under Impact of Blunders on Dose Reconstruction.

And the median, the distribution with blunders was 2.3 percent higher than the baseline without the blunders. At the 95th percentile, the distribution with the blunders incorporated was 3.7 percent higher than the baseline.

So, the 95th percentile thorium intake rate would be about four percent higher with the blunders incorporated, and that's all I have in there. That was the only thing that was new from the previous report.

DR. BUCHANAN: I'd like to discuss this a little more if that's okay with you, Mike.

CHAIRMAN GIBSON: Absolutely.

DR. BUCHANAN: Okay. Mark, I'm a little concerned here about the use of the word thorium.

 

Is that a correct term here on Page 7 where it says, the increase in 95 percent of the thorium intake?

MR. ROLFES: Yes, it would be the thorium intake rate would increase by a factor of four percent.

DR. BUCHANAN: But this data that was used to create this to look at these blunders, the -- didn't include any thorium data. This is all uranium data, air sampling data.

MR. ROLFES: The majority of it was uranium. But the methodology used for the uranium daily weighted exposure evaluation and the thorium daily weighted exposure evaluation was essentially the same. So, it's sort of independent of the radionuclide.

Now, that being said, the majority of the daily weighted exposure reports were for uranium. However, there are thorium results contained within this.

DR. BUCHANAN: Well, the 82, I assume that these -- on the front -- on Page 4, it says there is 36 reports for thorium and scores of other reports. And I assume that that's referring -- the data used was the 82 cases or the 82 datasheets listed there in the appendix; is that correct?

MR. ROLFES: The 82 cases, I'm not sure where the --

DR. BUCHANAN: Or line. It says, line. Line 82.

MR. ROLFES: Oh, okay.

DR. BUCHANAN: Yes.

MR. ROLFES: Yes.

DR. BUCHANAN: There's one through 82. So, I assume that this data is what was used to derive the figures and tables --

MR. ROLFES: Yes.

DR. BUCHANAN: -- in the revised report.

MR. ROLFES: You're correct. That

 

is correct. Everything from Attachment 1, those were the blunders. They're on Page 10 of 14 -- 10 through 14 of the report.

DR. BUCHANAN: Right. Now, if you go through those, there is only a couple that is past -- thorium was used 1963 to 1964 -- I mean, 1966. '63 to '66 occasionally.

And if you go through there, they're all -- anything in a '63 to '66 time frame is labeled uranium, except for '56 and '57.

MR. ROLFES: Okay.

DR. BUCHANAN: And if you look at that reference ID, this appears to be uranium too. It doesn't state that, but from the building and the process it looks like uranium. And there was no blunders on '56 and '57.

So, it looks like all this information that is in the tables and in the front of the revised paper, came from uranium

air sampling.

MR. ROLFES: Yes.

DR. BUCHANAN: And so, I guess you know SC&A just, of course, received this yesterday. And so, we haven't went completely through it.

But a preliminary look at it, it looks like that the, you know, I agree with your analysis if we didn't use the word thorium there on Page 7. But it bothers me that we're using this uranium data and we're extrapolating it and we're stating it for thorium.

The question is, is this, I mean, shouldn't we say that this is uranium intake? And then if we're going to use it for thorium, extrapolate it to thorium.

MR. ROLFES: Well, I guess it depends -- if you'd like for us to remove the word "thorium," we can say that the majority of the data were for uranium. However,

 

there's no reason to believe that the evaluation methodology would be any different for uranium than it would be for thorium, I guess.

Would you agree with that, or --

DR. BUCHANAN: Well, I don't know, because that brings up the second question we still have from our September issue. And that is the, you know, whether this data represents the majority of the working condition, because it was a limited availability of data.

I guess my problem -- okay. First of all, are you saying that there will be no adjustments then made because it's only four percent, to either uranium or thorium?

Is that the bottom line on that, or will there be an adjustment made?

MR. ROLFES: Well, for the uranium intakes, we wouldn't be using air sampling data to assign the uranium intakes. We would assign the uranium intake based upon

 

urinalysis data in the individual's file.

For thorium, we do have thorium in vivo counts. However, the way they were reported, an actual value wasn't reported to us. It was just as a fraction of a permissible lung burden.

They basically had identified exposure bands, three different exposure bands; for a person who wasn't occupationally exposed, someone who had some exposure, and someone who was around the maximum permissible lung burden of thorium.

So, we agreed not to use those in vivo results. So, we said that we would rely upon the daily weighted exposure evaluations to assign thorium intakes to essentially unmonitored thorium workers.

So, based upon our analysis of the blunders, which, as you said, the majority of the daily weighted exposure evaluations were for uranium, however, there were some for

thorium, our evaluation of all those blunders contained in the daily weighted exposure reports we found that the 95th percentile intake rate would be about four percent higher when incorporating the effects of the errors, the arithmetic errors or blunders.

And so, we are proposing to increase the thorium intake rate based upon the daily weighted exposure Evaluation Report, by four percent. So, we're going to increase the 95th percentile thorium intake by four percent.

DR. BUCHANAN: And that would be a revision to the TBD?

MR. ROLFES: That's correct.

DR. BUCHANAN: Okay. Now, you state that daily weighted average will not be used for uranium -- okay, maybe you're going to cover this in the next topic, the coworker data.

So, people that weren't monitored

 

that should have been monitored for uranium, you're going to use coworker bioassay data as opposed to air intake; is that correct?

MR. ROLFES: If there is an individual who does not have any monitoring data and was a production worker or had potential exposure in the production area, we would assign an intake to them based upon coworker urinalysis data or coworker intake model.

We wouldn't be using the daily weighted exposure reports for uranium intake since we have quite a bit of uranium urinalysis data.

DR. BUCHANAN: Okay. So, this clarifies -- let me check and make sure if I had any other questions on that.

DR. MAURO: Ron, while you're looking into that, this is John Mauro. I also have a couple of simple questions.

The genesis of the breathing zone

approach and the DWE and the blunders issue, really started with Fernald and the work that we did with Bob Morris and the work we did on Fernald, and quite a bit of time was spent.

And as I recall, and I'll get to my point, the philosophy was you -- there's a time period when air -- breathing zone samples were collected in locations where we know people or we suspected people were working with thorium in addition to uranium.

And breathing zone data, quite a bit, this is now Fernald, quite a bit of breathing zone data was available. And it was judged that those breathing zone data can be used to come up with DWEs and weighed and using the Strom approach, fundamental approach, I know it's different a little bit the way it was done on Fernald, but we reviewed that and we came away favorably inclined that, yes, you did basically use the Strom approach.

Now, where I'm headed with this is in your circumstance at Weldon, it sounds like a very analogous situation whereby you have a period of time for a group of workers, and I'm not sure if you make a distinction, where you suspect or have strong evidence that they did in fact work with thorium-232. And you do have considerable breathing zone data such that you could generate DWEs.

But we all recognized at the time of Fernald, that it's possible that a significant fraction of the counts on that breathing zone data, which is simply dpm per cubic meter, was, in fact, alphas that were counted that were from uranium as opposed to thorium.

But to be claimant-favorable, we'll assume that it was thorium. And we agreed that that approach, in fact, is -- errs on the side of the claimant, because the uranium is going to be reconstructed using

bioassay. And then you're going to add in the thorium dose based on these breathing zone samples, which could very well be some mixture of thorium and uranium, but assuming that it's all thorium.

Is this the approach you are fundamentally using here at Weldon?

MR. ROLFES: Dr. Mauro, this is Mark and, essentially, what we would be doing with the Weldon Spring plant, it is very similar.

We would be reconstructing uranium intakes based upon urinalysis data. And then adding a thorium intake on top of that based upon the daily weighted exposure results.

DR. MAURO: But those DWEs, they're based on gross alpha air counts, which could be any combination of thorium and/or uranium.

MR. ROLFES: That is possible.

However, one, you know, it all depends on a specific operation. In some

cases, it could be both uranium and thorium. In other cases, it would probably just be plain thorium.

DR. MAURO: Okay. So, you have a pretty good handle on who the thorium workers were where you're going to do this?

MR. ROLFES: We have information on which plants -- I think in our Evaluation Report, we provided a chart which showed which plants were involved in thorium operations during which years.

DR. MAURO: Okay. Again, I was hoping to get my sort of bearings.

Now, with regard to blunders, in the Strom paper, their analysis of the blunders, I recall, had a substantially -- and they actually went back, in other words, maybe for the benefit of the Work Group, to -- what they did in the Strom paper, say, they went back to the original data and saw how many, I guess, typos there were in converting and

 

taking the data off the original sheets and what affect -- how extensive those blunders were.

And I forget the percentage of blunders, but it was like ten percent. I forget the number, but it had -- if I remember, it had a fairly big effect when they corrected for the blunders.

MR. ROLFES: Yes.

DR. MAURO: In other words, the report said, okay, when we correct for the blunders, the results changed. And my recollection, it was a relatively large change not on the order of a few percent.

And I think when they did that, they actually corrected for the blunders because they had the data. And they found the transcription errors, et cetera, et cetera, and corrected for them to see, okay, how did the blunders affect the results.

Now, in this case, of course, you

have data. You don't know if there are any blunders. There may not be any in the data that you have, or there may be some.

How did you -- and I didn't read your report, but, mechanistically, how did you take your original set of whatever this data set is that you're working with, these breathing zone measurements and dpm per cubic meter from -- in other words, the source data that was used to derive the DWEs, how did you actually introduce how blunders would affect that?

That is, what assumptions did you make and how did you mechanically go through the process to say, okay, this is what would happen if we had certain percentage of random blunders in the way in which information was transcribed?

MR. ROLFES: Our original report does give -- in both the original report and the revision, we've gone through how we've

identified the blunders, the type of blunder, whether it was a typographical blunder, a mathematic or an arithmetic error, and a self-contradiction blunder. There were three different types. And then we also assigned a value that that error had on the reported air concentration.

What we've now done, we've gone back and done a Monte Carlo simulation. And I don't know if I have Bob Morris on the phone or not, but if he's out there -- Bob, are you out there?

(No response.)

MR. ROLFES: No, probably not, but I believe he is the one who has completed the analysis.

What we've done is gone through each of the blunders, corrected it, and come up with this new four percent 95th percentile --

DR. MAURO: Oh. Oh, so you

actually -- oh, okay. I have to say -- forgive me. I thought that you had a data set.

I'm sorry for interrupting, but, see, I thought you had a data set of numbers that you worked with where you don't know where or if there are any blunders.

You're saying you actually could go back to the original measurements the way Strom did, I guess, and you actually found where the people who were doing the DWE calculations made blunders. You're in a position to go back to the original measurements that were -- and determine if there were blunders. So, I guess I misunderstood conceptually what was done here.

I thought you actually had a set of DWEs and said that embedded in them may be some blunders of the nature that occurred in the Strom work and somehow, you know, made some assumptions regarding how many there

might be and randomly assigned blunders, I guess.

And I have to admit that my recollection of the details of it is not perfect, but I remember it being somewhat substantial in the Strom work, but it sounds like it's not here. And that may be simply because there were fewer blunders here.

And I may misunderstand exactly what was done for you to capture the effect of the blunders and the mechanics you went through, but it sounds like you were able to go through the original data and identify what blunders there were.

MR. ROLFES: Correct. In Attachment 1 of our report on Page 10 when Ron Buchanan had mentioned the 82 different lines, those are the blunders which we have identified from various Site Research Database documents.

And we've got the title of the

 

document from the SRDB, the date that the data were collected, the page where the report was, the number of operations represented. For example, they might have air-sampled somebody machining a piece of uranium. They might have air-sampled somebody dumping green salt.

So, each one of those operations was reported in each of the daily weighted exposure results.

DR. MAURO: And you actually found places where the transcription from the original data into the DWE calculation, that there were these certain errors or types of errors.

MR. ROLFES: That's correct.

DR. MAURO: And you found them, corrected them, and redid your Monte Carlo simulation for the DWEs.

MR. ROLFES: And revised our thorium intake rate or our intake rate based upon the daily weighted exposure results.

DR. MAURO: I understand.

MR. ROLFES: And at the 95th percentile, our intake rate was about four percent higher.

DR. MAURO: I understand.

MR. ROLFES: So, we've gone back and corrected.

Now, what you were referring to, the Dan Strom Health Physics Journal article, I believe, based upon their analysis, there were some underestimates by about a factor of ten.

DR. MAURO: Right.

MR. ROLFES: And some overestimates of a factor of two or three. So, yes, the data are tighter here, I guess you should say, with the four percent error at the 95th percentile.

So, we've agreed to increase our thorium or intake rate based upon the daily weighted exposure results.

DR. MAURO: I understand.

MR. ROLFES: By a factor of four percent.

DR. MAURO: I think, you know, I haven't read the report and of course SC&A hasn't reviewed it, but, in concept, what you described to me sounds like an appropriate strategy.

Ron, I mean, I don't want to jump the gun. Do you feel that we should take a closer look at this in light of the fact we've only had it for a day or so?

(No response.)

DR. MAURO: I don't know if Ron heard me.

CHAIRMAN GIBSON: Well, this is Mike. I think you should take a closer look at it.

DR. MAURO: Yes, because I understand conceptually now what was done. And, as I said, I haven't read it, but a lot

of work went into this at Fernald. And I guess I would hate to just jump to the conclusion based on a relatively brief conversation.

It may not take us very long, because we are very familiar with the subject. And it would be great to have Ron and John Stiver, who did a lot of the heavy lifting on Fernald, and of course our statistician Harry Chmelynski, take a look at it.

Hopefully, we can get back to you quickly, but it would be a good idea just to put this to bed in a way that we feel we took a closer look at it.

Because, quite frankly, it is a very favorable finding that the blunder rate was relatively low and had relatively -- virtually zero effect as compared to what was observed in the Strom data.

DR. BUCHANAN: Yes, this is Ron. I agree.

 

SC&A has only briefly reviewed this latest information. And we will -- I will work with John Stiver on this and try to turn this around and get our evaluation to the Work Group as soon as possible.

I did have a question kind of related to John's summary there, Mark. We see on Page 4 that we had 36 thorium data and scores of other data, DWA reports.

Now, that brings down to the question is that the 82 lines you have listed in the attachment, the reason that -- you had a lot to begin with, and then we came out with 82.

I assume that that's because a lot of them didn't have the original data that you go back and trace the actual calculations so that you could look for blunders; is that correct?

MR. ROLFES: Ron, I think I just may have -- I had a lightbulb come on in my

head here.

You had mentioned earlier that everything that you had looked at from Lines 1 through 82 appeared to be uranium. This title that is presented here is the title of the Site Research Database document and not necessarily the title of the daily weighted exposure report.

So, whoever -- it's possible that there are thorium data embedded in each of these reports, but not represented in the title.

DR. BUCHANAN: Okay.

MR. ROLFES: Sometimes the title of the document doesn't always reflect the contents of it. That might be part of the confusion from earlier on.

There are thorium data here. And as you pointed out, it did say that there were 36 daily weighted exposure reports that represented thorium operations.

DR. BUCHANAN: But is it correct to say that there was quite a few daily weighted average reports, but not all of them had the original data that you could check the calculations?

Is that true, or not?

MR. ROLFES: I'll have to get back to you on that. I'm not certain if the raw data were included in every daily weighted exposure report or not. I can check up on that and get an answer for you.

DR. BUCHANAN: Yes, it would be interesting to know that if there was a lot more daily weighted average reports, but not the original calculations, or this is all there is.

I mean, you analyzed every one that was there, because they all had the original calculations.

That would be helpful to know if Bob Morris maybe would know that offhand.

MR. ROLFES: Okay. I want to say that these were all of the reports that we had and we had identified. So, to confirm that I'm going -- I'll get back to you to confirm that.

DR. BUCHANAN: Okay. Okay, yes.

So, on Point Number 2, blunders, which we will -- SC&A will try to wrap up this issue and send a final report to the Work Group as soon as possible.

MR. KATZ: This is Ted, Ron and John and Mark. Just some context, I think, is needed here.

Can you clarify, is this at this point an SEC issue, or a TBD issue? Because we have a Board meeting next week and Weldon is on the agenda for the Board meeting.

So, timing in terms of Ron's follow-up if this is a TBD issue, that's one thing. If it's an SEC issue, it's another.

DR. MAURO: Can I take a shot at

 

that, Ron, if you don't mind?

DR. BUCHANAN: Yes, go ahead.

DR. MAURO: I think Ron's last question goes to the heart of that, and let me explain.

Let's say that all of the data that was used to produce the DWEs that are in your report, was in fact the raw data -- the data -- the raw data itself was available for all of the measurements, all of the DWE analysis, and they went back and looked at all of the data.

And that would mean that you had a complete sample -- it's not a sample any longer. You scrubbed the whole data set to check for blunders. And all we would do is to see if what you did was in fact appropriate, we check it and say -- and that would make this -- and if there were any errors or any aspects to the way in which the mechanics was done, it's something that could be fixed,

which makes it a Site Profile issue, okay?

However, let's say it turns out that the actual raw data that was available to check for blunders represents a very, very small percentage of the total data set that was used to develop the DWEs. There might be some question whether or not that data set is representative enough in order for you to assign a blunder estimate.

Do you see where I'm going? Which means there is a data adequacy issue that is if you really don't have very much of the original raw data to check for blunders, it puts you in a position where you don't really know whether or not you've evaluated the blunders adequately. And then, it becomes an SEC issue.

So, the bottom line is it would be a great idea if, Mark, maybe you could confirm with Bob Morris the degree to which the data set that you were able to check for blunders

represents a large fraction of the total data set that was used to develop the DWEs.

Now, if it was a very small fraction, there's a problem. If it was a large fraction and this becomes a statistical question, if you have a large enough fraction of it, you have a representative sample. And in theory, you could live with that.

So, I mean, so perhaps this question could be answered pretty quickly. Namely, I'll call it the Bob Morris question. And if the answer to the Bob Morris question is, yes, we had a substantial amount of data, if not all data or maybe more than 50, 60 percent, I'm throwing a number out, well, you know you really captured most of it. And, therefore, your representation of the blunders is a fair representation.

Then I would say if you could come back with this, I would say, yes, this is a Site Profile issue, not an SEC.

MR. KATZ: Okay. But, John, I mean, you say size. I mean, it's really -- it's not sample size, it's whether the sample is representative, right?

DR. MAURO: Exactly. Is it representative? That's what I mean by that.

And if a large percentage of the data, you know, what you want to do is walk away with confidence that when you did the blunder analysis, where you found the blunders and corrected them and measured the degree to which it affected your outcome, that sample or that analysis was representative -- I think that's a better term -- was representative of the full data set that was used to derive the DWEs.

And if one could walk away and say, yes, it was representative, and then after that say, and the mechanics, the way in which it was implemented, it was scientifically sound, the issue is taken care

of.

MR. ROLFES: Okay. John, this is Mark Rolfes again. And to address maybe the representative of the sampling to present a little bit along that line, I can, from our results portion of this report on Page 5, the first paragraph describes the documents and how much data and the representativeness of that data, I guess.

DR. MAURO: Okay.

MR. ROLFES: It says, in the nine SRDB documents located that contained dust studies and DWA evaluations, there were 81 pages that contained calculations of interest for evaluating whether they were blunders. These pages contained 1,405 different operations that were used to estimate the blunder rate.

Though there's 1,400 different operations that are sampled, on Page 6 we've summarized the occurrence of the blunders from

those 1,405 operations.

And of those 1,405 operations, 95 percent of the -- of the operations sampled, which was roughly 1,339 occurrences, there were no blunders.

DR. MAURO: Oh, so you looked at everything. That's what I'm hearing. I mean, the full data, you had access to the full original 1,300 individual --

MR. ROLFES: Operations.

DR. MAURO: -- one-minute samples or whatever they were. These are usually relatively brief samples.

So, you had access to the original data for everything that went into the DWEs.

MR. ROLFES: It appears that way.

DR. MAURO: Yes.

MR. MORRIS: Mark, this is Bob Morris.

MR. ROLFES: Oh, hi, Bob. How are you?

MR. MORRIS: Hi, good. I just joined.

Do you want to set the stage and I'll answer the questions I think that are out there?

MR. ROLFES: Yes. John Mauro was just asking about the representativeness of the daily weighted exposure results.

And I guess basically if you could summarize what you did in this most revision of the report -- I've explained that the 95th percentile intake rate that we would be assigning in dose reconstruction, increased after we've evaluated the arithmetic blunders and their impact. The 95th percentile intake rate increases by a factor of four percent.

MR. MORRIS: Okay.

MR. ROLFES: So, John Mauro was asking if we had the original data to go back and correct the blunder. And so, that's what we were discussing at this time.

MR. MORRIS: Okay. Great. Is Ted there?

MR. ROLFES: Yes, he is.

MR. MORRIS: Okay. Ted, this is Robert Morris with ORAU team. I have no conflicts on Weldon Spring.

MR. KATZ: Yes, thanks, Bob, for that.

MR. MORRIS: Okay. Let's see. After the last critique of the DWE blunder analysis that SC&A produced, they said in Work Group session, well, what impact does that have on what the ultimate dose reconstruction values might be, the intake rates that could be derived out of that?

And I think our position was, well, there's not very much impact, because with the data already having a geometric standard deviation of the log-normal distribution defined at being a value of five, which is a factor, a multiplier -- or divider

by five of the data, he said that probably is wide enough to include any kind of small incident errors like this that could occur.

A fair question came out. Well, I think you should prove that. And so, that's what we set about to do in the latest revision.

And we used the same data set that you had seen before, John. And then what we did was actually take every individual error that was identified and the value it would have taken for that error to have gone to zero.

So, sometimes it was underestimated by a factor of ten. I think that happened twice. Most often it was an underestimate by a factor of two or less. And so, we put together a distribution of discrete values that would have happened to make the correction come back to the correct value.

DR. MAURO: Bob, I'm sorry to

interrupt. Real quick question.

Those numbers, the factor of ten above and two less, that was the Strom work. In other words, those were the numbers -- the errors that they found in the work --

MR. MORRIS: Well, we actually went in and looked at -- we found -- when we could identify -- we went through the entire data set that was available to us in the SRDB.

DR. MAURO: Okay. Good. So, when you just said those numbers, it just turns out that the kinds of errors that you observed in your own database for the work there at Weldon, were not unlike the numbers that were observed by Strom in his work.

MR. MORRIS: I think that's right, yes.

DR. MAURO: Which is -- well, very interesting. Good. Keep going. This is good.

MR. MORRIS: Okay. So, then at

that point we took a Monte Carlo analysis approach and said, okay, here is the data, here is the log-normal distribution with a geometric mean of one and a GSD of five. And if we superimpose an error set on top of that, what does the resulting log-normal distribution look like?

And it turns out when you inject, you know, if you take 10,000 incidences of the calculation, you actually inject errors at the tiny rate of the three or four percent rate that we found, you inject those errors actually to emulate exactly what we observed and let the iteration happen over and over and over again, it turns out that at the median -- I don't have the paper open in front of me right now. So, you'll have to -- you probably can quote the number better than I can.

At the median, there's about a two percent difference in the value that would have been calculated as the intake rate. And

 

at the 95th percentile, there's about a four percent increase.

DR. MAURO: No, I think I've got it. But now for the last question, which is really where this began, it had to do with when you went back to the original data set, these thousand -- 1,300 or whatever actual measurements where you found the, I guess, what you called transcription-type blunders or whatever-type blunders they were --

MR. MORRIS: And there were also arithmetic blunders that happened over and over again. The same blunder at the same spot in the calculation.

DR. MAURO: Got it. Now, when you did that work-up, here was the question that Ted asked and it goes to the heart of whether this could be an SEC or not an SEC issue, were you working -- ultimately, the DWEs that you derived come from this original data set that you just described.

Did you have access to the full data set that was used to go from the original measurements, these individual three-minute air samples or whatever they are, and did you have access to the full data set that was used to derive your DWEs or --

MR. MORRIS: Yes. And that's why these data were actually analyzed.

DR. MAURO: Oh, then that's great. Because, you see, the question that we asked and Ron originally asked was, sometimes you don't have access to the full original data set and you had to check your blunders based on some subset of the set of data that was actually available to derive the DWEs. You didn't have --

MR. MORRIS: That's true. And in the majority, you know, there are hundreds of -- I'm making -- I don't know. I couldn't back this number up, but my perception is there are a hundred or so daily weighted

 

exposure reports at Weldon Spring.

And of those, we found complete data sets accessible on only a few. Five percent of those, maybe. But those were the five percent that were represented in the analysis that we reported on.

DR. MAURO: And with that, that's how you -- that's what you used to derive your DWEs?

MR. MORRIS: In our test case looking for blunders, it is.

DR. MAURO: In the test case. So, okay.

So, ultimately, when you are about to assign an intake rate for thorium which is at your upper 95th percentile --

MR. MORRIS: Right.

DR. MAURO: -- based on your DWE analysis, you say, okay, here's the number, whatever it is, becquerels per day.

MR. MORRIS: Yes.

DR. MAURO: This is our 95th percentile.

MR. MORRIS: Okay. I'm sorry. I didn't mean to interrupt you, John.

DR. MAURO: I'm just trying to get my thought across.

That calculation goes to -- originates with the data set of measurements that we use to derive that distribution of DWEs. And the data set that is -- the DWE that you derived comes from this data set of some -- I thought I heard 1,300 measurements, a number on that order.

These original 1,300 measurements sorted as you sorted them out and worked with them, you went through a process and came up with a 95th percentile daily weighted intake rate for these workers.

Were you able to look at the full set of data, the original data, that was used to derive that intake rate and check for those

blunders, or did you only look at a small portion of that data for blunders?

MR. MORRIS: Okay. I think I have answered that, but I'll try one more time because I have a feeling you didn't --

DR. MAURO: Yes, sometimes this whole DWE process is complicated.

MR. MORRIS: I don't want to leave you misled.

DR. MAURO: I understand. And I appreciate the difficulty here.

MR. MORRIS: Okay. Let's say that you were a thorium worker during a sol-gel process. We probably did not find the full data set for the DWE analysis that was done to represent an intake rate.

There is assembly level intake rate that is available in the records from Weldon Spring which would say for this kind of work by this kind of worker at this location at this time, this was the daily weighted

 

exposure this person received.

We take that value, put a geometric distribution around it, assume that it's the median of the log-normal distribution, and then put a GSD of five around that number to allow for the high-range excursions that could have occurred on a daily basis.

DR. MAURO: Okay.

MR. MORRIS: All we have is the one-day estimate, for example.

DR. MAURO: Right.

MR. MORRIS: Okay. Now, the question was, well, what impact do the blunders have on that, the arithmetic errors, the transcription errors, the little mistakes that happened?

And what we found by sampling the few cases where we have the entire data set available --

DR. MAURO: Okay.

MR MORRIS: -- we found that in those cases where we could assess it, it had about a four percent impact at the 95th percentile.

DR. MAURO: Oh, okay. So, I think we've got -- I think you've explained it well.

So, there really was a sample, in other words, you were able to access certain source data that really represented only a fraction of the total data set.

MR. MORRIS: Right.

DR. MAURO: And it was that, what was available to you was a fraction of the total data set.

Assuming that fraction is representative of all the data --

MR. MORRIS: Right.

DR. MAURO: -- in theory, your blunder analysis holds up, assuming that it's representative.

Now, the degree to which it's

representative, right now of course I would say is there any reason why that data set that you used to evaluate your blunders was not representative?

MR. MORRIS: Okay. Let me weigh in on that.

DR. MAURO: Okay.

MR. MORRIS: Potentially, yes, it happened from different years than the years we were most interested in.

DR. MAURO: Yes.

MR. MORRIS: But on the other hand, it was a relatively small and stable core of people who were making the assessments.

DR. MAURO: Okay.

MR. MORRIS: And they only got more experienced with it as time went on. It turns out, if I recall correctly, the years when we found example cases that we could take all the way to the analysis end point were earlier in the process at Weldon Spring than when the

thorium work we were really focused on occurred.

So, like I said, there were only two or three or maybe four people involved in making these calculations and it appeared to us like we had no reason to think what we got wasn't representative of what happened.

DR. MAURO: I hear you. I think I could answer Ted's question now.

I think we have to leave it as an SEC issue until we have a chance to take a look at this particular matter. I mean, the fact that it was some relatively small portion of the complete data set that was used to evaluate the magnitude of blunders and their impact on the outcome -- and, Bob, I understand what you're saying. And I think you're probably right, that is, that the sample that you did work with to check blunders is probably representative. There's nothing about why it should be biased.

MR. MORRIS: We didn't pick it as a biased sample.

DR. MAURO: No, I understand. It was what was available to you.

MR. MORRIS: Right.

DR. MAURO: And I think we need to look at that, Mike and Ted, the rest of the Work Group, and as part of our evaluation.

So, my recommendation based on what I just heard, and certainly I would welcome any feedback from -- I hate to jump the gun from Ron, but I think we leave it as an SEC issue until we can put this to bed.

CHAIRMAN GIBSON: And this is Mike. I totally agree. If we don't have the full set of data, then this needs to be looked into further.

Secondly, one thing just for my information, where did we come up with this "blunder" word?

MR. MORRIS: That is a word that is

actually -- it came out of the Dan Strom paper. And it is a -- "blunder" is a technical term in one of the ISO standards that they used to make the judgement against.

And so, it's not like, oh, a stupid mistake. A blunder is defined as one of about five different kind of errors that could occur, including transcription errors or arithmetic errors.

I've forgotten the other kinds, but really those are the two that can really stand out as being prominent.

CHAIRMAN GIBSON: This may be insignificant to a lot of you people, but if -- where this word came from if we bring it into this program and into our reports, a blunder is just that. Something that happens on a football game on Sunday afternoon.

MR. MORRIS: No, that's not at all the context here. We've had this conversation in Work Group meetings and, I think, Dr.

Melius may have asked this question in an advisory group meeting once before.

A blunder is a technical term in the ISO standards that Dan Strom introduced when he analyzed the first AWE data set in this context.

CHAIRMAN GIBSON: I understand what you're saying. I'm not suggesting that's not true.

What I'm saying in essence, though, there's errors in monitoring workers and it should be looked at and worded as such.

The public and the claimants out there, they're not -- when they see this, they're not going to know about this ISO standard that accepts the word "blunder" and has a definition. They're going to look at it like I do, and it's like that we're not taking these errors very seriously.

MR. MORRIS: Well, I don't think --

CHAIRMAN GIBSON: I don't think it

should be in our reports.

MEMBER LEMEN: This is Dr. Lemen and I totally agree with what's being said, because I think "blunder" is so misleading a term.

Whoever introduced it, that may be the way ISO and others use it, but it's so correct that people that are not familiar with that, are not going to understand that. And it's just going to raise a lot of questions and concerns.

Is there some way we can change that terminology?

MR. MORRIS: I wouldn't do that myself. I think that that's more a decision you would have to direct at the Work Group level.

MEMBER LEMEN: Well, I'm asking that maybe should be an agenda item then, Ted, for us to talk about.

MR. KATZ: This is Ted.

Dick, I mean, we're not there yet. But when we get to reporting from the Work Group, I mean, certainly this is something that you can talk about as well.

MEMBER LEMEN: I'm meaning at the Board meeting coming up next week.

MR. KATZ: Yes, I'm speaking exactly about that.

MEMBER LEMEN: Okay.

MR. KATZ: This Work Group has Weldon Spring as an agenda on the Board meeting next week. And most certainly you can address what your concerns may be about use of the term "blunder" as part of your report.

MEMBER LEMEN: Because I think Mike's point is really well taken at least by myself.

MS. JOHNSON: This is Karen Johnson, one of the petitioners.

I would have to wholeheartedly agree that the word "blunder" is just almost

insulting.

MEMBER LEMEN: It makes it sound like that it was really mistakes that are just inappropriate. And "blunder" has multiple meanings maybe in the scientific community and the non-scientific community, but it's a word that we should get away from, I think.

MR. MORRIS: This is Bob Morris again going back to one more thing you said, John.

DR. MAURO: Yes.

MR. MORRIS: You have had this data set in the original report. So, we didn't introduce any new data in this. We just re-analyzed the data that you've already seen.

So, if that was the context of the recommendation that says it's still an SEC issue, you have had the same set of data the whole time.

So, the pedigree of where our data came from did not change.

DR. MAURO: Okay, I hear what you're saying. I brought this up mainly as a bridge going back to Fernald where this issue was addressed.

And it sounds like this White Paper that came out recently explicitly addressed it, the error -- I'll use the term "error," calculational error or transcription error.

And you have actually gone through a process to characterize and quantify that error and found it to have a small effect on the outcome.

And I believe the question is -- and whether or not we analyzed it in the past, I can't speak to it, but it sounds like that you went through a process of looking through your data, your original data, which represents some subset or some portion of the full data set. You had access to the original data.

We may have had access to that before, but I don't -- I think the question on the table is in coming up with your estimate of the magnitude of these errors, could we say with some degree of confidence that the data set that you worked with was representative of the full data set, so that we could have confidence that the upper bound that you're assigning with the four percent consideration is, in fact, a reasonable upper bound taking errors into consideration?

I don't think we've ever looked at that. Ron, did we ever look at that? This sounds new to me.

DR. BUCHANAN: No, no. We wrote -- we did a reply report on September 27th and distributed it to the workers and NIOSH. And in that, our two points were how was this going to be applied -- that was considering Revision 0 that they sent out on the 7th of September. NIOSH sent out the 7th of

September, the original report.

On the 27th of September, our reply was a summary, two points, how is it going to be applied? And I feel that that has been answered. Whether we agree with all the math, I think it's been answered.

And our other point was representation. Did the error analysis represent the original data and how could that be shown?

And so, I think that issue is the one that still remains.

DR. MAURO: Okay. So, we have not addressed that issue yet in any of our previous deliverables.

DR. BUCHANAN: Yes, we addressed it on the 27th of September. We wrote the report. And in that we said we were concerned whether it represented -- we did not see any concrete basis saying that it was -- it represented all of the working conditions and

conditions that -- it might. We're just saying we didn't see that it was supportive.

DR. MAURO: But we did not --

CHAIRMAN GIBSON: Excuse me. This is Mike.

DR. MAURO: -- actually take a position.

CHAIRMAN GIBSON: This is Mike.

DR. MAURO: I'm sorry, Mike.

CHAIRMAN GIBSON: It's obvious that there needs to be more work on this issue. So, rather than try to do it on the phone, let's just agree that we need to look at this further and maybe try to move on and keep the agenda rolling.

DR. MAURO: Okay.

CHAIRMAN GIBSON: Is that alright with everyone?

DR. BUCHANAN: Yes, that's okay.

CHAIRMAN GIBSON: Okay. So, let's move on to coworkers/unmonitored

workers/unmonitored work periods, Section 1d.

Who wants to take that?

DR. BUCHANAN: Well, this is Ron and I'll just give a -- the reason it's on the agenda is that we had asked -- on the action items from the last meeting on the 13th of September, the action items set out on 19th of May, we agreed that -- or NIOSH agreed to provide a method that would be used to assign doses to unmonitored workers that should have been monitored and bridge gaps and dose records for monitored workers, and NIOSH will evaluate petitioner's concern of unmonitored workers' access to the operating plant area.

And so, that's kind of two things in one there. Number 1, what is NIOSH's position on coworker -- we just talked about historian data. And we said we were going to use coworker data instead of the DWAs for uranium assignment of people that should have maybe been monitored that weren't.

And, also, the petitioner brought up at the last meeting on the phone on 13th of September, about some people having access to the operating plant that weren't monitored.

And so, that's where that issue originated. And so, I'll turn it over to NIOSH to discuss their response to that action item.

MR. ROLFES: Okay. Let's see. I think the consistency of the approach to assigning dose is something that we would put into our Site Profile, because each claim is independent of other claims.

So, the facts of how we would complete one dose reconstruction would be based upon the details of that claim and type of cancer that that claimant had. So, that's something that's more specific to an individual dose reconstruction.

To speak to the other issue about administrative workers accessing the site and

not being monitored, we did look at a specific case to determine whether an administrative worker that wasn't involved in production would have been monitored.

And to date, reviews of records for people that may -- we've looked at cases and there have been some instances where people did not believe that they were monitored, but did enter the production area. And in our review of those cases, we have found monitoring data for those cases.

And during each dose reconstruction if there's an individual that has a concern that they had an exposure and didn't believe to be monitored, we would certainly look into that for each specific case.

Getting back to our original evaluation of the SEC petition we received, I don't have the exact number here in front of me. But from what I recall, roughly 90

percent of the Weldon Spring plant population did have monitoring for internal exposures to uranium. And this was done via urine sampling.

So, we did look into whether or not people could have gone into the production area and whether or not they were monitored. And the cases that we did look into did have monitoring data available.

So that's, I guess, about as much detail as I can provide.

DR. BUCHANAN: Now, this is Ron, SC&A.

Now, I don't believe that 90 percent of everybody that worked there was bioassayed or external monitored.

Is that what you're saying?

MR. ROLFES: Yes, I'd have to go back to the original Evaluation Report and take a look. If you could bear with me for a minute, I could pull that up.

DR. BUCHANAN: Because we found that out of the 15 cases we looked at, we found around 90 percent were bioassayed, but that was for production workers.

I don't believe that the entire population was routinely bioassayed or even on an annual or semiannual basis.

MR. ROLFES: Let me pull up the Evaluation Report and -- if you could bear with me for one more minute here, I have the report. I'm just trying to identify the -- there's a summary table which -- okay.

Let's see here. Of the number of claims that were submitted for dose reconstruction to NIOSH at the time the Evaluation Report was written, there were 258 claims that we received from the Department of Labor.

Of those 258, there were 207 individuals who had bioassay data in their files. So, that's 80 percent of the

individuals who were monitored for internal exposure.

And it's a little bit less than that for external exposure. It's 192 out of the 258. So, just under 80 percent.

So, it wasn't 90 percent. If I said that, I misspoke. It should be 80 percent.

DR. BUCHANAN: Okay, of the ones that filed claims.

MR. ROLFES: That's correct.

And then as you said from the SC&A sampling of the 15 cases, there were 93 percent, I think, is what you found had monitoring data associated with them?

DR. BUCHANAN: Yes, that was of the people you'd expect that worked in the production area.

MR. ROLFES: Yes, correct.

So, for the entire population which would include both the production

workers and administrative workers and other site support personnel when you look at the total number of people monitored for our claimant population, roughly 80 percent of the population for which we received claims, 80 percent of the population was monitored.

DR. BUCHANAN: Okay. To summarize for the Work Group, we're saying that we will not construct -- that NIOSH does not plan to construct a table listing external -- coworker external doses and coworker uranium and thorium intake to be used by the dose reconstructor for individual cases; is that correct?

MR. ROLFES: At this time, we haven't identified any cases where a coworker intake model has been needed. So, at this time, we don't intend to develop such a table for intake rates.

DR. BUCHANAN: And so, if you come up to a person that appeared that should have

been monitored, but wasn't monitored --

MR. ROLFES: Then at that time, it would be appropriate to develop a coworker intake model either based upon the data that we have available to us for the whole population, or any data representative of that person's exposure or anything that would be claimant-favorable for that specific case to be completed.

DR. BUCHANAN: Okay. So, as far as, I guess, to the Work Group, SC&A can only say that we can't evaluate a coworker model, because one has not been proposed other than what Mark just said.

CHAIRMAN GIBSON: This is Mike.

So, is NIOSH saying that coworker data is not -- a coworker model is not needed at this point, but you'll develop one if claims come in?

Is that what you're saying?

MR. ROLFES: Yes. If there is a

case, for example, that we receive for a production worker that was not monitored, at that time we would have to assign a coworker intake for that case.

And so, to my knowledge, we haven't received any such cases based on our review of the records. And, also, SC&A's sampling of the 15 cases for production workers, they found that 95 percent of the people, the production workers were monitored.

Our evaluation found that 80 percent of the entire claimant population from the Weldon Spring plant was monitored. And so, we haven't readily identified anyone that needs a coworker intake model to complete their dose reconstruction at this time.

However, if we do in the future, then a coworker intake model may need to be completed.

CHAIRMAN GIBSON: Dick, do you have any comments on this?

MEMBER LEMEN: No, not really, except I'm kind of like you, Mike. I think I'm a little unclear of what they're really planning on doing here.

CHAIRMAN GIBSON: Yes.

MEMBER LEMEN: I don't think it's been explained to me enough that I know exactly what's going to happen at this stage.

Are you going to go ahead and do dose reconstruction on all the ones you have right now with no coworker data?

MR. ROLFES: That's correct. We would complete dose reconstructions on the cases where we have bioassay data. For example, to estimate the uranium intake, we would use that individual's data.

Now, the situation where we would need a coworker intake model would be if we had a production worker that never provided a urine sample and we didn't have any other method of estimating how much uranium he could

have inhaled, for example.

MEMBER LEMEN: Because when you were bouncing around the 80 percent and 90 percent of the production workers, how many do you have actual data you can do dose reconstruction on?

MR. ROLFES: Well, we haven't gone through specific to production workers. We evaluated the entire population.

SC&A sampled the production worker population, the 15 cases -- say randomly sampled 15 production worker cases -- and found, was it, 93 or 95 percent of those had data.

MEMBER LEMEN: Well, that leaves a question to me, how long before you will know how many you can do dose reconstruction on and make a decision on that so we can determine whether or not we want to go with a Class on this or whether we want to go with individual dose reconstruction?

MR. ROLFES: Well, I can --

MEMBER LEMEN: The time frame.

MR. ROLFES: I can speak for our current claimant population. We haven't encountered any cases where we've needed a coworker model to date.

I can't predict future claims since we are still receiving claims from the Department of Labor. We haven't identified any claims where we have needed a coworker intake model at this point.

MR. KATZ: Mark, this is Ted.

Maybe it would be helpful -- I mean, how many claims have you already run dose reconstructions for?

MR. ROLFES: At the time the Evaluation Report was completed, we had received 258 claims from the Department of Labor. And at that time, we had -- let's see. 244 of those cases out of the 258, met the Class Definition criteria for the covered

years of employment from 1957 through 1967.

Of those 244 cases, NIOSH had completed 180 via dose reconstruction. And I can pull up some more recent numbers for you if you can give me just one minute.

Okay. We have received 268 claims for Weldon Spring plant. We have completed 215 dose reconstructions out of those 268, and then 52 cases have been pulled.

MR. KATZ: Have been what?

MR. ROLFES: Pulled. Which means that they were removed from NIOSH by the Department of Labor likely because they were in another SEC Class.

So, currently there is one Weldon Spring plant dose reconstruction that is outstanding to be completed.

MEMBER LEMEN: And have you sent all the ones back to the Department of Labor or where are the ones that you've completed? What's the status of those?

MR. ROLFES: Of the -- let's see. Of the 215 dose reconstructions that have been completed, the -- it's roughly half were greater than 50 percent Probability of Causation, and half were less than 50 percent Probability of Causation.

As far as which step in the administration process of finalizing the claims, I really couldn't speak to that. I don't have those numbers available and, ultimately, it's the Department of Labor who would make the compensation decision for each claim.

MEMBER LEMEN: So, about half of the claims, you're saying, qualify for compensation at this time?

MR. ROLFES: That is correct.

MEMBER LEMEN: And you don't know what the time frame in getting those claims to the claimants are at this time?

MR. ROLFES: The recommended --

well, excuse me. The dose reconstruction reports have already been completed to determine whether or not the Probability of Causation would exceed 50 percent or be less than 50 percent. So, those claimants have already received answers at least from NIOSH.

They may not have received a final decision from the Department of Labor yet, though.

MEMBER LEMEN: Okay.

MR. ROLFES: So, as far as what NIOSH has in its queue of claims that we have not yet completed a dose estimate or a dose reconstruction report for, we only have one case that is currently outstanding.

MEMBER LEMEN: So, of all the cases that have sent in and dose reconstruction has been determined, and you have one outstanding, all of those cases had been notified to the individual claimants telling them that they qualify or don't qualify.

MR. ROLFES: That is correct.

MEMBER LEMEN: With the exception of one.

MR. ROLFES: That is correct, with the exception of one.

MEMBER LEMEN: Okay. Thank you.

MR. ROLFES: You're welcome.

MS. JOHNSON: This is Karen Johnson. I have a question about the administrative staff.

Do you know approximately how often they were monitored?

MR. ROLFES: It all depends on the individuals and the history of their exposure potential, essentially.

If they had a potential for exposure and went into the production area or some other area where they could have possibly had an exposure, they could have been sampled following that potential exposure or they could have been routinely monitored.

We would have to take a look at a specific case. I don't think there's a hard and fast rule for how often someone would be sampled.

MS. JOHNSON: Okay. I'm just asking, because we have a lot of office staff who say they were able to walk wherever they wanted. There were no restrictions placed on anyone.

And they, other than maybe an annual exam, don't recall ever being monitored.

MR. ROLFES: That's certainly possible. And if one takes a look at someone's urinalysis records, for example, if we only have a couple of urine samples to estimate someone's intake, the intake estimate is actually likely going to be a little bit higher, a little more claimant-favorable, than a detailed analysis of day-by-day acute intakes.

So, if you're exposed to enough uranium, you'll continue to excrete it for months to years at a time. It depends upon the solubility of the uranium to which you're exposed.

And when NIOSH completes a dose reconstruction using those urine sample results, we would use the uranium solubility that results in the most claimant-favorable intake for that specific claim.

DR. MAURO: Mark, to follow up on that question by Karen, so out of the 200 or so cases that you performed DRs, in every case you used the bioassay -- for the internal dose, you used the bioassay data for that worker.

In some cases, the workers may have had fairly frequent bioassay, and some cases, as Karen pointed out, they may have been relatively infrequent such as administrative workers.

Is it your experience that the ones with minimal frequency was once a year? I'm trying to get to the need for a coworker model.

And what I'm hearing is that, well, in one respect you were able to do all these dose reconstructions without resorting to a coworker model, even administrative workers who actually had sufficient data, from your perspective, to actually reconstruct their doses using their own bioassay data.

MR. ROLFES: I'm sorry, John. If there was a question in there, I --

DR. MAURO: Yes, I guess the question is -- I'll make it two questions.

One, so out of all those 200 or so workers, you never had to resort to a coworker model?

MR. ROLFES: To my knowledge, that is correct. Since there is no coworker model developed, there hasn't been one, per se, to

rely on.

Now, very early on in the program we could have completed some dose reconstructions using coworker or coworker-like data.

I don't know if that happened with Weldon Spring plant. However, there could be a case or two out there, for example, where we know so and so worked with so and so. And one person had monitoring data, but the other didn't.

And so, early on we may have used information from a coworker -- or, excuse me, from a computer-assisted telephone interview report and identified coworker bioassay data from people doing the same job who were identified in that CATI, for example, and we may have completed a case using another individual's bioassay data, for example, but that would be the exception from the norm.

So, there could be a situation

like that early on, if that answers your question.

DR. MAURO: Yes, it does.

To help out a little, when we originally evaluated this, and certainly Ron could help out, and we sampled those 15 workers, we did find, we did concur that, yes, for the workers that we sampled and looked very carefully at their historical records, it was a complete record.

Karen raised an interesting question. Sounds like that certainly our sampling focused in, I believe, on operators, people who you would expect to have the high-end exposures. And it certainly appeared that for those that we sampled, there was quite a bit of data for those workers.

Karen's question goes toward what about administrative workers who may not have been sampled/bioassayed as frequently?

What I'm hearing is that you do

run into those and you do have data for them. And even if it's annual data, you have a mechanism to use that annual data, bioassay data, in a manner that will place a plausible upper bound on the intake for those workers also.

Would that be a true statement?

MR. ROLFES: Yes. There are cases where we have administrative workers that provided annual samples, annual urine samples, which we've used to estimate people's uranium intakes.

And so, as I said earlier, when we make assumptions about a chronic exposure duration, that alone even if we know that a person in an administrative fashion didn't spend 100 percent of their time in a production area, if they had a couple of uranium urinalyses over one each year, we would assume that they had a chronic exposure for the entire duration of their employment in

that job capacity, or the entire time period from the first bioassay sample, or a little bit of time before that bioassay sample such as the employment start date all the way through the date of the last bioassay sample.

So, even if the person says, I only intermittently entered a production area, but we had bioassay data for each year that they could have potentially entered the production area, we would assign a chronic intake for that entire time period that was represented there.

CHAIRMAN GIBSON: This is Mike. And I guess I don't see that -- maybe in most cases it's claimant-favorable, but there could be the situation where an administrative worker walked through the production plant the day after they left the bioassay and got an acute exposure. And then 365 days later you're still seeing some excretion.

By assigning a chronic dose all

year, that would in no way cover the big, acute exposure that happened the day after their last bioassay.

MR. ROLFES: We have looked into this. And the acute intake would have to be so large as to be something that couldn't have occurred without some sort of medical -- we've discussed this a little bit with Fernald, and you would have to have something that would be physiologically impossible almost.

And so, by assigning an intake over that entire year chronically, typically will result in a more realistic -- and it typically does result in a little bit higher total intake than just a single, acute intake.

So, yes, that is something that can't be ruled out. It is possible that that could occur. However, the likelihood of it occurring and resulting in an intake higher than what we would assign by our assumption of a chronic intake over an entire year, it's not

likely. It's not likely that an acute intake would exceed our total chronic intake.

DR. MAURO: Mike, this is John.

This issue has come up quite some time ago on other sites.

CHAIRMAN GIBSON: Right. I think I brought it up.

DR. MAURO: Yes. And at the time, Jim had performed a number of what-if analyses and did demonstrate to SC&A satisfaction, that that strategy that was just described by Mark, SC&A did find favorably.

So, it's sort of a generic issue that applies across the board on how dose reconstructions are done everywhere.

CHAIRMAN GIBSON: Sure. Absolutely.

DR. MAURO: And it was something that we did look at. And I don't want to say that it doesn't necessarily mean it doesn't need to be looked at some more. But I can say

we did look at it in the past, and SC&A did find favorably with that strategy.

CHAIRMAN GIBSON: Well, we can look at it more on a site-wide basis.

DR. MAURO: Sure.

CHAIRMAN GIBSON: I just wanted to raise the point again, because it is feasible.

Okay. Anything else on this issue or -- Dr. Lemen, do you have any comments or --

MEMBER LEMEN: No, I don't at this time.

DR. MAURO: I'm sorry to interrupt. This is John again. I do have something.

One of the things that we did find when we -- and, again, Ron, please correct me if I'm misrepresenting this in any way. That when we did look at those 15 cases and we found -- and we looked at the cases that we felt confident did represent the folks that have the highest potential for exposure, and

 

we did find a rather complete data set for those workers, that left us with information that also led us to the conclusion that if the day did come when a coworker model had to be developed, it could be developed because the data for -- the problem always is can you build a coworker model if you need one?

And the reason why you can't sometimes is you just don't know whether you have sufficient data for the limiting groups of workers to build a coworker model from that would place a plausible upper bound.

Our work has shown the work we did, which was -- it has shown that there does certainly appear to be sufficient data for the limiting group.

And, Ron, because of the importance of the statement I just made as my understanding of where we came out from the work that we talked about in the past, did I fairly characterize that SC&A finding and

 

position?

DR. BUCHANAN: Yes. This is Ron. Yes, the SC&A found that there is -- appears to be sufficient data for both bioassay and external monitoring to create a data -- for coworker data if needed.

CHAIRMAN GIBSON: Okay. So, this is Mike. We'll leave that one as is and we'll come back to it if it's ever needed.

Is that all right with everyone?

(No response.)

CHAIRMAN GIBSON: Hearing no objections, let's move on to radon model, Four.

MR. KATZ: Mike, this is Ted.

In terms of reporting out since this is one of your issues, SEC issues, I think you and Dick need to come to a conclusion on your own, I mean, not - I mean, SC&A has given you its recommendation, but you all need to as a Work Group, come down to a

 

position on that.

CHAIRMAN GIBSON: I would say that we can close it --

MR. KATZ: Okay.

CHAIRMAN GIBSON: -- given the fact that SC&A thinks that it can be done if needed, and also that we have the other Work Groups that do the coworker studies and stuff.

Is that agreeable to you, Dr. Lemen?

MEMBER LEMEN: Yes, it is.

CHAIRMAN GIBSON: Okay.

MEMBER LEMEN: It takes me a minute to get my mute off.

MR. KATZ: Thanks, Mike.

CHAIRMAN GIBSON: All right. So, who wants to take the radon model?

MR. ROLFES: This is Mark. I can give you the latest update.

There really isn't any new information. I guess we had proposed a new

 

methodology to assign radon intakes to Weldon Spring plant workers and I believe SC&A ultimately has come to agreement with our proposed approach. I don't think there's anything that's been discussed since that time.

We did agree that that White Paper would be incorporated into the TBD ultimately when the TBD is revised, if it hasn't been yet.

I don't believe there's anything other than that.

DR. BUCHANAN: This is Ron.

No, as we left it last time, there was no action items on Item Number 4, radon/thoron.

As Mark said, they -- originally SC&A objected to the model. NIOSH came out with a revised, highly-conservative model.

We reviewed that. Now, this was in tandem with Fernald, because they had

similar issues. I believe it was Fernald.

We did last time at the September 13th meeting, we did recommend that the model was acceptable. We did discuss last time that the Advisory Board in the past had not accepted some radon models when there wasn't any measurements to benchmark those models. However, the other models previously did use an air-exchange rate.

In this case, the model was ultra-conservative and it did not use any air-exchange rate. And so, we have no further input on that.

I think that the Work Group can decide on that and present it to the Board for their discussion.

CHAIRMAN GIBSON: So, was there radon monitoring at Weldon Spring, or is this one of the places where we viewed surrogate data from another plant?

DR. BUCHANAN: No, we did not use

-- NIOSH did not propose to use any surrogate data like from Fernald or anywhere.

Essentially, it was there was no radon monitoring, to answer your question, or thoron monitoring. The method used was to look at the throughput of uranium. Take the maximum throughput per year, within a year, and calculate that there was a conservative amount of radium in the uranium and that all the radon was released from a material into a closed room, and then what the maximum concentration would be in that room, and then assign that intake.

And that would apply to radon, and also the thorium input and its resulting concentration.

And so, that would be a maximum limit that could be present to the workers in any room.

CHAIRMAN GIBSON: Dr. Lemen, do you have any thoughts on this issue?

 

MEMBER LEMEN: I don't.

DR. MAURO: Mike, this is John Mauro. Would you mind if I just add a little bit to what Ron said that I think is important to not only you folks, but also to the full Board.

You may recall that there was another site, Blockson, where a radon model was used. It was a rather sophisticated model. Took into consideration a lot of processes that were at play and there was a Monte Carlo. And if you remember, there was quite a bit of discussion on it. And in the end, the Board voted down to use a model to predict the concentration of radon in the room.

We are in a very similar situation here. Again, a model is being used to predict the radon concentration in a building.

The only difference with here, the important difference, not the only difference,

 

but the important difference is here they're assuming the room is, for all intents and purposes, sealed.

That is, any radon that becomes airborne never leaves. The only way it leaves is by radioactive decay.

So, what this does is it creates the circumstances where you place an upper bound on what the levels might be in the room as a way to tap it. And there would be variable doubt that that represents an upper bound, because it's not leaving. And of course we know that there is ventilation in buildings where you would expect something to leave. But, nevertheless, it is a model.

SC&A finds this to be certainly a bounding scenario. The exposures could not be higher than the ones that are being calculated for thoron -- this is for both thoron and radon.

Nevertheless, I think it's

important to let everyone know that we are in the similar situation that we were with Blockson where there may be some Members of the Board that are not comfortable with models and would rather have some type of measurement data.

But SC&A's position here is that there is -- that this does in fact represent an upper bound on what the concentration of radon and thoron could have been in that building.

CHAIRMAN GIBSON: Well, this is one that personally I don't know that I'm comfortable with closing just for that issue. I do remember the Blockson discussions that we had for a long time.

I just don't know if I'm comfortable with closing this one. Maybe --

MEMBER LEMEN: I concur with you, Mike.

CHAIRMAN GIBSON: Just throw it to

 

the Board and --

MEMBER LEMEN: Mike, I concur with you.

CHAIRMAN GIBSON: Okay.

DR. MAURO: That's the reason I brought it up, because I knew this is a subject of great interest to many Members of the Board.

CHAIRMAN GIBSON: And we have some radon experts there, some of our newer Members. So, I think this is one that maybe we just ought to throw out there to the Board.

MEMBER LEMEN: Agreed.

CHAIRMAN GIBSON: Okay. Anything else on the radon?

If not, let's move on to the neutron calculations.

DR. BUCHANAN: Could I interject here?

We did have -- if we're going to go in order here, we had action item for SEC

 

Issue Number 5. And that's the recycled uranium. We need to pencil that in, in between radon and neutron.

We had a recycled uranium -- SC&A had researched this in conjunction with Fernald, that's where the material came from, and found that the hundred parts per billion plutonium assignment from the uranium analysis was claimant-favorable.

However, we did not find necessarily in the dose reconstruction, that this was always being done. Our small sample showed that about half the time it wasn't being done.

NIOSH was going to check in and see if there needed to be a PER or something sent out and investigate that. And so, Mark, what's your status on that?

MR. ROLFES: That's correct. Essentially, once the Site Profile is ultimately revised after we receive the

 

recommendation from the Work Group, we would issue a Program Evaluation Report which would take a look at any previously completed dose reconstructions which had a Probability of Causation less than 50 percent.

And if the recycled uranium intakes were not previously assigned and the assignment of those intakes and the other updates to that dose reconstruction would affect the outcome of the Probability of Causation, meaning making it go from less than 50 percent to greater than 50 percent Probability of Causation, we would work with the Department of Labor to have those claims sent back to NIOSH and have new dose reconstruction reports completed.

And so, that recycled uranium issue would be one of the things that we would look at when a Program Evaluation Report would be issued.

DR. BUCHANAN: Yes, will there be a

PER issued -- or what did you say about issuing a PER?

MR. ROLFES: Yes, we would issue a recycled uranium Program Evaluation Report after the Working Group has made its recommendation and the Site Profile has been revised.

See, we'd also consider additional things that have been updated as a result of the Working Group process. Any changes, for example, since our radon model has changed or our thorium intake approach has been revised, those things would also need to be considered for each previously completed dose reconstruction that was less than 50 percent.

DR. BUCHANAN: So, you do it all at once rather than doing each one --

MR. ROLFES: Correct.

DR. BUCHANAN: -- and then redoing it when something else changed.

MR. ROLFES: That's correct.

 

DR. BUCHANAN: Okay. So, the Working Group, SC&A finds that acceptable and we have no further input on that issue.

CHAIRMAN GIBSON: Dr. Lemen, do you have any thoughts on this?

MEMBER LEMEN: No, I'll defer and concur with SC&A.

CHAIRMAN GIBSON: Okay. I think we can close that one then.

Now, if we can move on to the neutron.

MR. ROLFES: Ron, would you like to start this or do you want me to summarize?

I think we've both come to agreement. We've both ultimately obtained the same answer for neutron-to-photon ratios. It's just SC&A had used a built-in conversion factor that NIOSH doesn't apply until we complete the individual dose reconstruction. It was just a method of how the calculations were completed. In the end, the same result

 

was obtained for the neutron-to-photon ratios.

I don't know if you have anything to add, Ron, or --

DR. BUCHANAN: Yes. Originally, SC&A did not agree with the method used to select the neutron-to-photon ratio.

Just a little background. A case made around uranium plants, you'll have a small amount of neutron dose. There was some NTA film used at Weldon Spring, but it wasn't recorded, apparently, and so -- neutron film, NTA film, and it wasn't recorded.

And so, how do you assign neutron dose? Well, there's a fairly constant ratio of neutron-to-gamma dose, photon dose. And so, the standard procedure is to assign that and say like a half a rem of neutrons per rem of photon if a person is working around that material.

And so, originally NIOSH had used some data from Fernald, which we really didn't

 

object to using that because it's a fairly constant ratio. But we did object to the way it was obtained.

And so, SC&A went out and did some calculations to see what they would arrive at. And through the exchange of information, we finally found out that we came out with the same numbers very close, 0.42 and 0.44 or something like that. Very close.

And so, I sent out an email, I believe, in -- recently since our last meeting, I sent out an email to the Work Group saying that we accept that number. I think that was on the 20th of September. And that we no longer have an issue on that.

And the Work Group can close that as far as the SC&A is concerned. That's up to you.

CHAIRMAN GIBSON: Dr. Lemen, do you have any thoughts on this issue?

MEMBER LEMEN: No.

 

CHAIRMAN GIBSON: Okay. I think I would agree to close that, too.

So, if there's nothing else under that issue, we can move to the off/normal/accidents and incidents.

DR. BUCHANAN: I would like to say something there. NIOSH, did you have anything on that?

I think that really should be Nine. I guess we can discuss it. We had no current action on our action item list from our 13th meeting. We had -- September 13th meeting we had no action items. And we left that up to the Work Group chair to close it if they wanted to.

We had no further task on that unless NIOSH has something new.

MR. ROLFES: No, there wasn't anything new, Ron. Your recollection is correct.

I think we had basically said

 

we've done all we can do on that issue, I believe, at the past couple of Working Group meetings. And that was another one of the things that you were going to leave up to the Working Group chair, I believe.

MR. KATZ: Right. Mike, this was one where Dick wasn't going to close it on his own. So, he wanted you to have the opportunity to read the transcript and the discussion tying this up.

CHAIRMAN GIBSON: Yes, I've done part of that. It seems like there's been -- it's been fairly well discussed. And unless Dr. Lemen has any objections, I think we can close this.

MEMBER LEMEN: No objections.

CHAIRMAN GIBSON: Okay. So, now we will open the floor up to petitioners or claimants.

DR. BUCHANAN: We had one other item that wasn't on the agenda. It was on the

action item list that unfortunately wasn't on the agenda today. And that's Number 9, and that's geometry in extremity monitoring.

And last time we discussed this on September 13th, and NIOSH agreed to provide geometry correction factors and revised TBDs and establish a PER if necessary, to correct for geometry affect.

This comes from wearing the badge on the lapels to the radiation that might be assigned that would be higher -- the worker might get more dose to, say, the hands, the wrists, the arms or the legs or the torso as opposed to wearing it on his chest.

And so, NIOSH, did you have a response for that action item?

MR. ROLFES: Yes. Yes, Ron. This is Mark.

We did discuss this at the last Working Group, I believe. And we do now have a published DCAS TIB-13, which is Revision 1.

 

And the title of it is Selected Geometric Exposure Scenario Considerations for External Dose Reconstructions at Uranium Facilities.

So, that is something that will be considered in dose reconstruction for finding, for example, external dose to the lower torso, for example, when the badge is worn on the lapel or center mass of the chest.

So, we will need to put a statement into the Site Profile that will reference OTIB-13. And that will, I believe, close the geometry factors, Issue Number 9.

DR. BUCHANAN: Okay. That was OTIB-13, and has that been posted yet?

MR. ROLFES: Yes. It's DCAS TIB-13, Revision 1. And it was posted in November of 2010.

DR. BUCHANAN: Thank you.

MR. KATZ: Ron, just for the record, this Item 9, as well as the one that you raised that wasn't on the agenda, which

 

was Five, I think, these were, I think, already relegated as TBD matters. Which is why they're not on the agenda, because we're trying to get through the SEC matters for the upcoming meeting.

DR. BUCHANAN: Okay. Thanks, Ted. I just wanted to make sure the Work Group --

MR. KATZ: No, it's fine. It's fine. They haven't taken a lot of time. I just want to be clear as to how I set the agenda.

DR. BUCHANAN: Okay. Thanks.

CHAIRMAN GIBSON: Okay. Anything else before we get to listen to the petitioners and the claimants?

If not, Karen or Mary or Tina, the floor is open to you.

MS. JOHNSON: This is Karen.

I think at this time, I don't think I have anything else unless Tina does. We're kind of in the middle of going through

some of -- we've actually both just received part of our FOIA. So, we're still going through quite a few documents. So, we may have some questions in coming days.

Do you know if we still will be on the agenda for the Advisory Board meeting?

MR. KATZ: This is Ted, Karen.

It is on the agenda. It's -- I don't have the agenda in front of me. I think it's the first day though. Hold on a second. Let me look.

Yeah, it's on Wednesday at three o'clock in the afternoon, 3:15.

MS. JOHNSON: Okay.

CHAIRMAN GIBSON: So, this new data that you just got from your FOIA request, is there a lot of data?

Is it going to take you -- I guess my concern is if you may find substantive issues that you want the Board or the Work Group to consider and --

 

MS. JOHNSON: We'd like to gather all of our documents that we've pulled together by the end of this week and forward it on to the Board and NIOSH and SC&A, if that's possible.

CHAIRMAN GIBSON: Yes, I think Ted can make that happen, right, Ted?

MS. JOHNSON: Have it before the Board meeting?

MR. KATZ: Yes, Tina. If you have anything you want to send to me, I can get it distributed.

MS. JOHNSON: Okay. This is Karen.

MR. KATZ: Oh, Karen. I'm sorry. I'm sorry.

MS. JOHNSON: That's okay.

We'll go ahead and do that. Would it be best to email it to you if we can --

MR. KATZ: Yes, email is great.

MS. JOHNSON: Okay.

MR. KATZ: And let me just give you

my email right now.

MS. JOHNSON: Okay.

MR. KATZ: Or you have my email, actually. I think we've corresponded, haven't we?

MS. JOHNSON: Yes, I do have it.

MR. KATZ: Okay. So, just email me, and I'll get whatever you send, to all of the Board.

MS. JOHNSON: Okay. All right. Thank you.

MR. KATZ: As well as the status. Thank you.

CHAIRMAN GIBSON: Anything else from any of the other petitioners or claimants?

If not, I guess we're at the place about report and recommendations to the Board. We still have an issue that is the data representative.

I don't know that -- I guess my

opinion is I don't know that I'm -- I would be ready -- I won't be at the meeting, but I hope, Dr. Lemen, I hope you can make a presentation for us, but I don't know that I'm in a place where I would recommend accepting NIOSH's position.

Dr. Lemen, how do you feel?

MEMBER LEMEN: I'm not either. I concur with you. I think we need to talk about it between us a little bit more, Mike.

CHAIRMAN GIBSON: Yes, okay. So, I guess, just for the record, I think that we will probably say at this point we can't concur with NIOSH's position to deny the SEC.

MEMBER LEMEN: I agree.

CHAIRMAN GIBSON: And then Dick and I can talk at another time off line and --

MR. KATZ: Actually, we need to do this on line. This discussion is really part of the deliberation of the Work Group. It should not be off line.

But, I mean, if you're not prepared to make a recommendation -- I'm not clear whether you're saying you're recommending to add a Class and what that basis might be, or you're not prepared to make a recommendation, period, to the Board, but I think you need to sort of decide what your course will be for next week and make that clear so that then -- and we can have Ron help Dick put together a presentation on it.

But I guess that much needs to be made clear, because that's really what comes from the Work Group is your recommendations and your basis.

But, I mean, I think Ron assuming he's available to do this, can put together the technical material so that you can present the whole story to the Board as it is.

And as it is, it sounds to me like it's unfinished on the blunders question that the representative data for the blunders

 

matter. So, that's something you're tasking SC&A to look further into, and they'll do that.

So, that's part of your story, but anyway --

CHAIRMAN GIBSON: I mean, yes, that's where I'm at. My recommendation is at this point, we don't concur with NIOSH.

MEMBER LEMEN: I guess at this point -- this is Dick Lemen -- that we can just say that at the Board meeting, Ted, and make that our presentation.

MR. KATZ: Okay. Then let's talk about what you would like for Ron to prepare. I think the Board has not heard about Weldon Spring, I believe, since they got the DCAS presentation; is that correct?

MR. ROLFES: Ted, this is Mark.

MR. KATZ: Yes.

MR. ROLFES: Dr. Lemen did provide an update to the full Advisory Board in St.

Louis.

MEMBER LEMEN: That's correct.

MR. KATZ: Okay.

MR. ROLFES: You may have been a little distracted because of the tornado.

MR. KATZ: Well, that's fine. No, that's good and thank you for reminding me. But as far as -- I think this should be sort of quite a full update so that they can -- again, that was a while ago anyway even if they've done that, if we've done that.

So, I think it should be a fairly full presentation of what the issues were, how the issues that have been closed have been closed, about this issue that remains open related to blunders and whether the data is representative --

CHAIRMAN GIBSON: That's what Ron should put together.

MR. KATZ: Yes, and the radon question as well is one that you can present

clearly. There's not more to do there, but it's an issue that, as you said, the Board would be interested in. So, that can be presented.

If that sounds good to you, then that's what, you know, Ron can put that together in a PowerPoint that, Dick, you can present.

MEMBER LEMEN: Yes, I think that that would be fine. And I think what we discussed today and came to closure on, Ron is aware of that. So, include all of that in the presentation.

CHAIRMAN GIBSON: Well, and then I think it should be mentioned that the petitioners were not -- they were put in a position where they couldn't address their concerns because of recently getting the material they had requested.

So, we need to give them time to hear them out. I mean, I know they'll have

the right during comments, but I think it should be known that, you know, they were on our agenda here for this meeting, but they were not in a position to bring their concerns to us because of the lack of timeliness or whatever reason for the --

MR. KATZ: Yes, I think that's a bit unfair. I mean, it's a FOIA request and I don't know when it was submitted.

CHAIRMAN GIBSON: I don't either. Okay.

MR. KATZ: I think simply enough Karen has the opportunity to provide me with information, but she certainly is welcome as well to say if she needs more time for more of the FOIA to be addressed if it has not been addressed, or if she needs more time the documents she has, that's most certainly something that the Board would be interested in as well.

CHAIRMAN GIBSON: I didn't mean to

 

offend anyone by saying the lack of time limits. I just meant they were not prepared to bring -- they didn't have the chance to get prepared to bring their concerns to us. And I want to hear those.

MR. KATZ: Right. Absolutely.

CHAIRMAN GIBSON: Okay. Anything else?

DR. BUCHANAN: Okay. Do you want me to prepare this slide presentation with Dr. Lemen, or with you, Mike? Is he going to give it?

If so, I'll work with him or --

CHAIRMAN GIBSON: Yes, you can work with him. I'll be on the phone as much as I can.

DR. BUCHANAN: Okay.

CHAIRMAN GIBSON: I won't be able to make the meeting. I've got some commitments here I've got to do.

Okay. Well, anything else?

 

If not, I guess we're ready to adjourn. I'd like to thank everyone for taking the time to have this meeting and I guess I'll be talking to you via phone when you're in Tampa.

MR. KATZ: Thank you, Mike.

(Whereupon, the meeting was concluded at 11:06 a.m.)