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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

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WORK GROUP ON ANL-EAST

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FRIDAY
MARCH 10, 2017

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The Work Group convened via teleconference at 10:30 a.m. Eastern Time, Bradley P. Clawson, Chairman, presiding.

PRESENT:
BRADLEY P. CLAWSON, Chair
JOSIE BEACH, Member
GENEVIEVE S. ROESSLER, Member
LORETTA R. VALERIO, Member

ALSO PRESENT:

TED KATZ, Designated Federal Official
BOB BARTON, SC&A
NICOLE BRIGGS, SC&A
RON BUCHANAN, SC&A
JOE FITZGERALD, SC&A
ROSE GOGLIOTTI, SC&A
LARA HUGHES, DCAS
MARK LEWIS, ATL
JENNY LIN, HHS
VINCENT KING, ORAU Team
JOHN MAURO, SC&A
LaVON RUTHERFORD, DCAS
JOHN STIVER, SC&A
ELYSE THOMAS, ORAU Team

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P R O C E E D I N G S

(10:30 a.m.)

Welcome and Roll Call

MR. KATZ: First of all, welcome everybody to the Advisory Board on Radiation and Worker Health. This is the Argonne East Work Group. And the Argonne East Work Group is working on a review of the Argonne East Site Profile.

The agenda for today is very simple. It's on the NIOSH website. The scheduled meeting, today's date. But it's almost not worth going through the agenda. Although there is a document there which is the SC&A review of the current Site Profile. So, or the issues that are being resolved related to that.

So that SC&A review is posted on the website. And people can go to it and read that background material for the lead part of the discussion for today. And then, also, I think at the end we'll try to work out then what's going to be presented at the Board meeting, which we're having a Board meeting in a couple weeks in

Naperville, close to the facility. That's on March 22nd we'll be having a presentation, a brief presentation about the review of that Site Profile. And what we'll be looking for, also, is issues that we can ask people who've worked at the website -- at the site there about, you know, holes there may be to fill and questions we may have.

So, anyway, that's more or less what's going on today.

For roll call, I have all my Board Members. My chair of this Work Group is Mr. Brad Clawson. And then we have Ms. Josie Beach, Dr. Gen Roessler, and Ms. Loretta Valerio. And none of them have conflicts of interest.

And we'll go on to the NIOSH ORAU team and please keep the conflict of interest as you run through your roll call. Thanks.

(Roll call.)

MR. KATZ: Brad, it's your meeting.

CHAIR CLAWSON: Great, I kind of don't' know where to start with this. If Lara wants to start first and give us some background, where they

are at or if SC&A wants to go over the Site Profile Review issues.

DR. BUCHANAN: I'd prefer seeing if SC&A could bring up the issues and then have NIOSH respond to them, if that would be okay with you.

CHAIR CLAWSON: That would be fine. Ron, go ahead.

SC&A 2016 Review of Site Profile Issues & NIOSH status/preliminary responses

DR. BUCHANAN: Okay. This is Ron Buchanan, SC&A. And Bob Barton is doing the display today. If you'd put up page 5 of the SC&A 2016 report. That is the introduction part.

And what I'd like to do today, okay, it's been a long time since we visited this site. Many of you might not be familiar with it. And even SC&A, it's been a while since we've worked on it much. And so I'd like to do a little review, set a little background so that we're all on the same page.

And I think that's one of the main things we want to do today is to get everybody up

to speed, get all on the same page and then see where we want to go from here.

The TBDs for this site were issued way back in '05 and '06. And so most of you know TBD-6 was revised in 2014. Now, as we progressed, then nothing was done on that till about 2008. Back in those days NIOSH and SC&A had back and forth conversations so that we could discuss questions, answers, clarifications, issues. And that is what is contained in Attachment 4 of our 2009 report.

And so this was some -- we asked questions, NIOSH responded. And on a few of them we replied back. And so that's then pages 91 through 102 of the 2009 report, Attachment 4, which gets referred to sometimes. And so I wanted to give a framework of where that fit in.

So then in March the 11th of 2009, we actually issued our evaluation of the Site Profiles for Argonne East. And that included Attachment 4 in the appendix, or in the attachments.

And so nothing more was done on it until TBD-6, Revision 1, was issued the 16th of October

of 2014. And, again, nothing much was done until the Board tasked SC&A to do a status report in March of 2016, about a year ago. So, SC&A gathered this information up which, as you know, was kind of mothballed. So we gathered this information up and tried to put it in a report that brought it all together. And did some Site Profile issue recommendations in June of 2016. So not quite a year ago. So that's the introduction page you see displayed on the display at this time.

And in that, what we tried to do was bring together some of these issues and accomplish three things:

Look at what the revised TBDs may be at that time. And the only one was the TBD-6 from 2014;

And perhaps address some of the issues we brought up by other Board venues at other sites and other documents to see if some of those answered some of the questions;

And number three was to look at new procedures or OTIBs and such that might address

some of the issues. And, for example, OTIB-6 for medical X-ray did address some of the issues.

So that's where we were last summer. And then recently this information was put on the BRS for everyone to look at and try and consolidate it so everybody could follow that roadmap. And this was put on in February by SC&A.

And then we noticed, about day before -- well, we noticed yesterday that day before yesterday NIOSH had responded or had responded day before yesterday on the BRS to our 13 findings. And so, obviously we haven't had time to digest so we can respond to them.

And so what we'll do today is outline the finding and then have NIOSH give us our current response and then we'll decide, you know, whether that's a NIOSH action. Some of them they're going to do further work on. A few of them, SC&A needs to read and then provide a written response. And then I think one of them perhaps can be closed.

Now, I would like to make a point of clarification in that the 2009 Site Profile Review

lists items number in Attachment 4. And there's 13 item numbers that we discussed back and forth with NIOSH. These correspond somewhat with our 2016 report but not exactly. There's not always a one to one correspondence because some of those items we took and put into topics.

And so on the BRS and then today and here forward we will use our 2016 numbering system for our findings so we don't get confused and we have a uniform method.

So, if that's agreeable to everyone, I will start on Finding 1. If Bob will put up the BRS Finding 1.

Any comments or questions before we get started?

CHAIR CLAWSON: I don't have any at this time.

Is everybody hearing that cut-in or cut-out? Or is that maybe my fault?

MR. KATZ: He's clear on my phone, Brad.

CHAIR CLAWSON: What's that?

MR. KATZ: He's clear on my phone.

CHAIR CLAWSON: Okay. I might change the phone. But I'll plug in there. So, okay, go ahead, Ron.

DR. BUCHANAN: Okay. So we see that Finding Number 1 is potential missed dose from lack of definition of radionuclide compositions and radionuclides not addressed in the Site Profile. And what SC&A was concerned with when we did this review in 2009 was issues with the source term, really.

For example, the percent enrichment, of enriched uranium, what would be used? Because most of the time back in those days they had gross alpha, gross beta, so how would you assign dose? Or what was the radioisotopes because it wasn't completely described in the TBD? And so plutonium, what radionuclides of plutonium were there?

Accelerator-produced radionuclides, which are usually fairly short-lived activation products. And back then what we called exotic

radionuclides such as californium-252, et cetera. And so we felt there needed to be some further description on that for the dose reconstructor tiers. And so that was our Finding Number one.

So now I'll turn it over to Lara and she can provide her response to that.

DR. HUGHES: Okay. We had some discussion with the group about the dose reconstruction part. I meant to point out during roll call, we are expecting some folks from ORAU to call in. But I was notified that they might be running a little late today. So I just wanted to put that on the record.

As for the uranium mixtures, what's typically done in the dose reconstruction is a lot of the uranium bioassay that we see in front of units, not in mass units but in radiological units. And in that case it would be assigned as uranium -- was whatever uranium -- let me see, typically it would be assigned as uranium-234.

I haven't seen a lot of mass units in the claims. But in case a claim has uranium

bioassay mass units it would be assigned depending on the individual scenarios. So there would be some research into where does this person work at, and would we assume that the person most likely worked with National Uranium.

So, and then some might assign it in a claimant-favorable way but also in a reasonable way, depending on the individual claim.

For plutonium mixtures we typically, I think some of it is discussed in the TBD. It's often with plutonium-231 -- 239 because it's claimant favorable.

So but that's in a nutshell. I mean, there could certainly be some additional guidance in the TBD, and we're currently assessing to see if any information is available regarding any other exotics such as accelerator turns. I believe the accelerator startup at ANL was in the 1950s.

So, we have currently mostly looked at the very early periods in focusing on to see if we find any infeasibilities in the 1940s. So in that regard, yes, there could be some more information

in the TBD, but we're still assessing and we have not come to any final conclusions whether or not the information is available.

I'd like to point out that since the TBDs were written 2006, we have currently about 4,000 documents in the SRDB. And would say probably half of those have been added since the TBDs were issued. So we have a very large information, very large amount of information to go through and to research to see how we're going to refine these TBDs. And also to assess the status and feasibility of the early, the early period, especially for internal dose reconstruction.

DR. BUCHANAN: Okay. So I guess the procedure at this time is we should wait to evaluate this until you, you are planning a revised internal TBD. Is that correct then?

DR. HUGHES: Yes. There will be a revision.

There will also be an assessment whether or not there is any infeasibilities and,

you know, whether or not there will be an SEC added. That's obviously going to go along very similar to, to other sites.

At this point I cannot -- we have obviously not come to a conclusion. We're still in the middle of doing the research. It's a lot of -- it's rather time consuming.

DR. BUCHANAN: Okay, thank you.

Brad, then I assume that you would prefer SC&A to wait to provide a written response to Finding Number 1 and NIOSH's response until we see a revised TBD-5. Is that correct?

CHAIR CLAWSON: That is correct, Ron.

DR. BUCHANAN: Okay. So I think that probably on a lot of these findings we will be looking for a revised TBD. But we will address each one individually and then make sure that the SC&A is clear on what we should do next.

So is there any questions or comments or clarification anyone wants to ask on Finding Number 1?

MR. KING: This is Vincent King from

ORAU. I just wanted to -- I think I missed the roll call. And wanted to let you know I'm on the line.

DR. BUCHANAN: Okay. Any comments on 1, Finding 1?

MEMBER BEACH: Ron, this is Josie. I don't have any right now.

DR. BUCHANAN: Okay.

CHAIR CLAWSON: I'm good for right now. This is Brad.

MEMBER ROESSLER: This is Gen. I don't either.

MEMBER VALERIO: This is Loretta. I don't either.

DR. BUCHANAN: Okay, thank you.

So, Bob, you want to bring up the Finding Number 2.

Okay. Finding number 2 was missed dose from the use of gross alpha counting for bioassay from 1946 to 1972.

And this had to do with, kind of related to Finding 1 in that not knowing the radioactive material was present. And back then, again, they

did gross output. In the early years they didn't have any way to do spectrometry much, especially on a routine basis.

And so it would be important to know what isotopes we were counting for. And so this is, like I say, similar to 1, only this is concerned more with the bioassay results themselves. And so that is the issue that we have.

And so, Lara, do you want to address that?

DR. HUGHES: Yes. I mean this is obviously the early internal. It's always a big issue. And we're still assessing. It's true that mostly it was alpha in the late '40s, early '50s.

We're trying to figure out at what point they actually, they had the capacity to do all the specific analytes if needed. The current -- it looks like they were I think attempting to analyze for specifics if needed. But I just think we need to kind of figure out, you know, what the capacities were, what were the methods used and all that. But we're still, we're still assessing that.

Again, that's obviously one of the major issues to look at with regards to potential infeasibility. And we're still assessing it.

What we did, our main -- well, one of the big things we looked at was the comparison between the Metallurgical Laboratory and ANL-East because of the, as you might be aware, but the Met Lab is an SEC based on that there was no monitoring data available at the time. And so isn't -- Now, we're trying to figure out what, what happened in the meantime, like once ANL-East came up and running, so to speak.

It was a transition from the Met Lab to ANL-East which essentially not so much the same facility but it's the same contractors, the same people working. So there is a continuation at this facility. So what we're trying to figure out is what changed? Why, why did they -- were the same infeasibilities there that were at the Met Lab?

And we found that, no, indeed there were not. They did have a potential to be internal in the late '40s, which is somewhat, not necessarily

unusual, but we don't see it at many of the other sites.

So there's no clear indication that they didn't do the bioassay. However, we still need to assess whether or not this program is indeed robust enough for our requirements. And this is an effort that is still ongoing. As I said, there are additional documents regarding health and safety. Regarding the program that has been captured, that has not been, that information has not been included in the TBD. And that is all on our to-do list currently.

DR. BUCHANAN: Okay, thank you. So that is saying this Finding 1 will be issued, a new TBD, and like I say, SC&A will review it. And any questions, comments, clarification at this time on Finding Number 2.

CHAIR CLAWSON: This is Brad. I'm good.

MR. KATZ: I think that's all good, Ron.

Just could I ask everyone that's not

speaking please mute your phones because there's a lot of sort of static that's coming through and interfering. Thanks.

DR. BUCHANAN: Okay. Finding number 3 is -- what that was concerned with was assuming the TBD said that they assumed the inhalation pathway for radionuclides if no other information was available. And mainly SC&A wanted to point out that ingestion also needs to be included. And looked at a pathway for some organs such as the GI tract.

And so that was our issue there was, is ingestion considered in some dose reconstruction where it would lead to a higher dose, or should be included with the dose? And so that was our question on that.

Lara, do you want to address the Finding Number 3?

DR. HUGHES: Yeah. Based on our discussion with our contractor that is involved in the DR processes, I was told that ingestion, intakes are included as appropriate. However,

inhalation is our default intake mode based on, you know, all the program documentation.

So, I mean, that's really it. It would be considered if needed or if appropriate. And I think that's always been the case. So I mean it's not ingestion, it's --

DR. MAURO: This is John Mauro.

DR. HUGHES: -- considered.

DR. BUCHANAN: Yes?

DR. MAURO: Yes, I just wanted to ask a question because it may help clarify.

Typically in the more recent cycle of files there is a coupling between the methods you use to do inhalation and ingestion where you draw upon OTIB-9 and on the airborne activity. In this case, since you have biological data and on your Findings 1 and 2 you're going to clearly take advantage of the unit samples, and then if you find yourself, well, you know, usually -- this is not how I would speak if I was NIOSH -- include the OTIB-9 approach. Knowing the airborne activity during operations, let's say, you have your

protocol to convert to ingestion, which always turns out to be a relatively small contribution.

Do you, or I guess the question posed is, do you plan on taking that sort of line of attack whereby either you use available airborne activity or you back-calculate what the airborne activity might have been, given the biological data, and then go forward with the ingestion pathway on that basis?

DR. HUGHES: That's how I understand it, yes.

DR. MAURO: Okay. I'm bringing it up only because there seems to be a tractable problem. And if you are able to get to the point where you're able to reconstruct the inhalation or the internal dose, in theory then you could also come up with a way to get airborne activity if you don't already have the measurement.

So, I bring this up as just a line of approach that might work.

DR. BUCHANAN: Okay. I think that's one then that, yes, if NIOSH has completed with

their response that's one that SC&A will have to evaluate and provide a written response on. If that's okay with everyone?

MEMBER BEACH: Sounds good, Ron.

DR. BUCHANAN: Okay. Okay, if there's no further questions or comments, we'll go on to Finding Number 4.

MR. KATZ: Am I the only one who's hearing a lot of static?

MEMBER BEACH: I'm not hearing any static at all.

CHAIR CLAWSON: Yes, clear as a bell for me, too.

MEMBER ROESSLER: I can hear everything fine.

MR. KATZ: Okay, thanks. It's strange because I have a hard line here. Okay, thanks.

CHAIR CLAWSON: I had to change phones.

MR. KATZ: Go ahead, Ron. It's just me then, apparently, who has the problem.

DR. BUCHANAN: Okay. So Finding Number 4. We had concerns about insufficient

information on the calculation of the MDA, minimum detectable concentration, and uncertainties in bioassay methodology.

And so our concern there was that there was too little information to really give the dose reconstructor confidence in what the MDA values were and the associated uncertainties there. And so we would like to have seen, you know, further investigation into perhaps finding more information on that.

And so I'd like to turn it over to Lara now for her response.

DR. HUGHES: Yeah. The MDA values that are in the TBD are based on the information that was available at the time. Often they are taken from individual bioassay results. So we will not necessarily find a report that states explicitly to any effort in this method of what, you know, this value that we reach from the available bioassay data.

And anything that's included in the TBD is what was available at the time.

And we can certainly attempt to refine that based on, you know, any additional research from data that has been collected since that time. But I have no indication at this time that we necessarily have any more data than we had nine years ago.

There might be some, yes. I mean, but I mean essentially what's included in the TBD is usually all of the information that we have. And it's almost early if minimum detectable levels are quite high, which gets resolved in a large missed dose. That's pretty typical.

DR. BUCHANAN: Okay. Now, in your reply you say records between ANL are being reviewed to determine if they may refine the current estimates of the MDA values. What are you -- should we evaluate this as it stands now? Or do you anticipate any changes in TBD-5 when it's reissued?

DR. HUGHES: It is quite possible there might be some changes. I cannot -- I do not have any, you know, refined values in front of me at this

time. We have not gotten to that point.

DR. BUCHANAN: I think probably it would be best then for SC&A to postpone further evaluation until we see the revised TBD in case there are additional values in it; if that's agreeable to everyone?

CHAIR CLAWSON: That's fine, Ron.

DR. BUCHANAN: All right.

MEMBER BEACH: Sounds good.

DR. BUCHANAN: Okay. Finding Number 5 is guidance for missed dose for unmonitored workers, for large gaps in monitored workers' dose. And this is concerned, of course, with the issue of what would be done when there was a gap in the bioassay records for people. And, of course, at this time we had no coworker data for this site.

And so, Lara, do you want to address that issue?

DR. HUGHES: Yes. There's no coworker model for this site. We at this point do not know if it's possible to develop one. I would think that at some point it's probably possible.

Currently, you know, the guidance that is followed in the TBD is that for unmonitored work -- the TBD states that all workers that needed to be monitored were monitored. And where it's often questionable, we have found some reasonably reassuring information that ANL actually had, you know, workplace restrictions in place and that it had a fairly good program.

We found program documentation that was, like, all the way to 1948. So, there is a reasonable amount of confidence that the workers that were rad workers were indeed monitored.

So the current approach is that somebody who wasn't monitored is not considered for that period that they weren't monitored, is not considered to be going into a radioactive area and, therefore, wouldn't receive an occupational exposure other than the environmental exposure. And that's how this is currently used in the dose reconstruction.

Now, this is always an issue. And we certainly need to look into it some more. It's

quite difficult to produce. We're currently reviewing all the available claims in NOCTS to kind of see what job titles are available and, you know, whether or not the worker was monitored to see if we can somehow, you know, correlate the job with their monitoring status. And then that is still ongoing.

There is surprisingly large number of claims that have early bioassay data, even from the 1940s, especially compared to the data I've seen at other sites. Now, that being said, there is also a fair number of workers that were not monitored in their early years. So we're still, again, still assessing. This is somewhat of a difficult problem to prove. It's essentially proving the negative. But, yes, I mean it needs to be worked out because we often run into this issue.

DR. MAURO: This is John again. Just another sort of observation is Jim Neton put out a superb guideline document on coworker modeling and the criteria. And I see this as a perfect

opportunity to apply that. That is, you know, when you start to sort out the bioassay data and you see its completeness, accuracy, et cetera, the degree to which you could build a coworker model from that is following Jim's procedure.

I don't recall the number. I mean, this is the perfect place to try it out. We have used that procedure in the past and found favorably regarding that protocol for making these kinds of determinations.

MEMBER ROESSLER: This is Gen. Am I off mute?

CHAIR CLAWSON: You are.

MEMBER ROESSLER: Okay. On this issue of whether people were actually monitored or not, and especially in the early years here, what have you found out from worker interviews? Are there people still available who can give us some information on that?

DR. HUGHES: This is Lara. NIOSH has not done any worker interviews in the recent past.

MEMBER BEACH: SC&A did some, what was

it, back in 2009 I think, 2008.

DR. BUCHANAN: Yes. They did 32 workers' interviews. And they're outlined in one of our reports, the 2009 report I think, Attachment 1 or 2. And outlined not by the interviewee but by the subject matter and content.

And so, yes, the last interview we did was we did these 32 in two thousand -- before 2009, obviously, because that's when the report came out. And so at this point we are looking to find out, you know, where SC&A stands, where NIOSH stands and what's coming down the road really before we approach any more interviewees to get any additional information, unless we seek points like this like who was monitored and stuff. Then that might be helpful at that point.

MEMBER ROESSLER: Okay, thank you.

DR. BUCHANAN: Okay. So it looks like Finding 5, again, is one that we're waiting to see if they have -- what information they need and probably that will appear in TBD-5 whether they think we need a coworker model or not or whether

the records support the fact that people needing to be monitored was monitored, and those who weren't monitored did not need to be monitored.

So, again, I would think that we would wait to see what their finding is and decide on that. And we will evaluate that at that time.

If there's no further comments or questions, I'd like to turn it over to Nicole. And she has the medical part. These 13 findings are divided up into internal, which I have covered and medical which is on 6, 7, and 8. And then we'll come back with the external and environmental for the remainder of the findings.

So, Nicole, are you ready for your medical X-ray?

MS. BRIGGS: Yes. Yes.

DR. BUCHANAN: Okay, thank you.

MS. BRIGGS: Before I get into the individual findings I just wanted to give a little background. There was something that emerged since the publication of the findings related to occupational medical. So I'll start with that.

So, there was limited information about the X-ray screening program at ANL-East before 1988. So the TBD recommends that dose reconstructors use guidance in OTIB-6, which is the general site-wide guidance document for assignment of occupational medical dose.

The TBD was published in 2006, so it references the 2005 version of OTIB-6, which I believe was Revision 3. And since that time there has been a complete revision of OTIB-6, which was published in 2011, which is Revision 4.

So, the first thing we did a few months ago when we revisited this Site Profile Review for occupational medical is we looked at this new Revision 4 of OTIB-6 to see if anything was changed or added that would affect the guidance in the TBD. And also to see if any of those changes would have an effect on our findings, which were published in 2009.

So we did note that the conventional X-ray doses have not changed from Revision 3 to Revision 4 of OTIB-6. But there were changes to

the recommended PFG doses and the lumbar spine doses. So in our report, I believe it's pages 9 and 10, we've got Tables 1 and 2 which compare those changes for the occupational medical dose as published in the 2006 TBD, which were -- which is from the older version of OTIB-6, as compared to the new published values in the revision of OTIB-6 from 2011.

The changes are relatively small. But that's something that I guess would be included in a new revision of the TBD, like we had mentioned earlier. So, I think we could probably just leave it there until there is another revision of the TBD.

CHAIR CLAWSON: Yes, that sounds like we're going to do that this draft.

DR. MAURO: Nicole, this is John. One of the matters that I recall was once you move into PFG world, which we all understand the changes were made, is there any -- and this may be another finding coming later -- but is there any issues related to whether or not there was PFG at that time or was that just another issue that you'll be

looking at shortly?

MS. BRIGGS: Yes, yes, that's correct. That's covered in Finding 8. So I'll do that when we're there.

DR. MAURO: Okay. Thank you. Thanks. Sorry about that, okay.

CHAIR CLAWSON: John, just wait your turn now.

DR. MAURO: I know. I can't help it.

MS. BRIGGS: Okay. So, I guess I can move on unless anyone has any questions about the OTIB-6 revision. I can start on SC&A Finding 6.

Okay, so this one was described as a failure to adequately define and assess occupational medical exposures in the pre-1988 years, and potentially missed special employment exams.

We found when we revisited these findings that the findings have some overlap to them. And a particular finding sometimes addresses more than one issue. So I'm going to do the best I can to sort of tease out those issues

and try to address them individually.

For example, for this finding there are essentially two main issues that were included here.

The first one addresses doses that could have been assigned from special screening exams.

And the second issue has to do with, in this particular finding, Number 6, has to do with the frequency of the X-ray exams.

So I'll back up. For the issue of the special screening exams, which would include things like screening for beryllium workers, asbestos workers, exams that were performed at the end of employment for a termination exam, Revision 3, which is an older version of OTIB-6, had recommended that those doses from these types of exams should be included in dose reconstructions.

So we just noted that this is another one of the examples where the TBD would simply need to be updated to include I guess some of the language from the revision from OTIB-6.

And then for the second part of this finding, which relates to the frequency of the X-ray exam, the TBD recommends a finding X-ray exams every four years. Now, in the Attachment 2 of this document which contains the interviews that were performed with the ANL-East workers, some of those workers indicate that annual X-ray exams were in fact performed as part of their annual physicals beginning in about 1950. And they had stated that that extended some time into the 1990s.

And then during the 1990s it seems like the X-rays were done once every, every two years.

So, for this we, SC&A recommends that the finding stay open for discussion. So, I'll pass that over and see what the NIOSH team proposes in the BRS for that.

DR. HUGHES: Okay. So, yeah, the medical TBDs will be updated with the data that's in OTIB-6.

As to the frequency, I'm not sure we considered it that much of an issue because the site typically reports all the X-rays, all the X-ray

dates with each individual claim. I think that's what I've seen in the claim data. So I think that's what's used at least in best estimate cases.

There might be some cases where they do an annual, assume an annual as an overestimate. I would have to refer to the ORAU dose reconstruction team to provide details. But, I mean, in general we will use claimant-favorable assumptions, or in most cases the actual data that is available.

MS. BRIGGS: Okay. I guess for this it was I looked specifically in cases where the dose reconstructor doesn't have data to work from and has to refer to OTIB-6.

DR. HUGHES: Right. I'm not sure how frequent that is at the site.

MS. BRIGGS: Okay. So, Ron, I guess we'll just leave that open.

DR. BUCHANAN: Okay. So we're planning on, Lara, we're planning on revising the TBD-3 to reflect OTIB-6 current recommendations?

DR. HUGHES: That is correct. It needs to be updated with the current

recommendations.

DR. BUCHANAN: Okay.

DR. MAURO: Lara, this is John Mauro. A thought has come to me and I think it might be helpful.

One of the areas that I've encountered more recently is that there is a degree of discretion used. There was a time when it was automatic at a DOE site to assign some type of medical X-ray, usually just a chest X-ray. And it was automatic annually. But I've seen more and more where you go into a particular, on a case-by-case basis and see what the records are for that worker. And at that point decide whether or not you will be assigning medical X-ray doses to that case or not.

And I always felt that that was -- how you go about doing that is that simply you just look at, you know, you presume that if no records are there related to the X-ray to that person that it did not get the exposures? That was always a bit troubling to me because there's a presumption

inherent in that. When previously, if I recall correctly, you usually universally just assigned that.

Maybe I'd like, if you wouldn't mind, just a little bit of how you come about this more refined approach, more, I guess you would call more realistic, but also a little bit more vulnerable in terms of being claimant favorable.

DR. HUGHES: Right. I'm not sure. We either use an assumption or we try to use the claimant favorable, or we use the actual data that's available. Anything else I would have to defer to the ORAU team that actually did the hands-on dose reconstruction because I have not done any of those myself.

DR. MAURO: Yes.

DR. HUGHES: So other than that, I can't really elaborate on that.

MS. BRIGGS: I guess our just concern here was that because it says, because the TBD states that the exams were done every four years that it may be misleading in cases where there is

no data. I guess if there is data for most cases, then that's fine and the dose reconstructors use that information for the particular individual.

But I guess that's why because we were concerned because it said every four years in the TBD.

DR. HUGHES: I believe that statement was put in the TBD based on information that was found in the records. However, it's quite possible if it was more frequent that we have additional data to update this with.

MS. BRIGGS: Okay. I guess any comments about Finding 6?

(No response.)

MS. BRIGGS: All right, I'll keep going on Finding 7.

For this one the description was for the -- described there's a lack of techniques and protocols for medical examinations prior to 1988, increases the uncertainty of dose conversion factors listed in the TBD.

So, so this finding it seems that SC&A

was concerned about a lack of documentation of the type of X-ray equipment that was used before 1988. Along with the, seems like the beam quality, the calibration of the equipment, and the protocols and the techniques that were used for their dose calculations.

I am not going to get into the details of the different types of X-ray equipment used at ANL over the years. I think we can simplify that for the finding. Both Revision 3 and Revision 4 of OTIB-6 were reviewed by SC&A. And all of those issues associated with those reviews have been resolved and closed.

So SC&A found the protocols and the assumption in OTIB-6 to be claimant favorable. And since the TBD relies on the guidance in OTIB-6, I think we might be able to select them in closing this finding, if others agree.

DR. BUCHANAN: Well, do we need to see this in the reference to OTIB-6 though in the revised TBD before we recommend closure? Because it looks like OTIB-6 answered some of our questions

but it has not been incorporated into the revised TBD-3 yet. Is that correct?

MS. BRIGGS: Yes. I guess that's true.

MR. BARTON: Well, I think in this situation we would probably recommend waiting until we can actually see the changes.

DR. BUCHANAN: Right.

MS. BRIGGS: Okay.

CHAIR CLAWSON: I would agree.

MS. BRIGGS: Okay. If there is nothing else, I think I will move on to the last finding related to occupational medical dose, which is Finding 8. And, again, that has to do with the frequency and the types of X-ray exposures and their uncertainties.

So, again, there is a little overlap between some of these findings. So this again includes the issues, the issue of special screening exams and the issue of the frequency of the exams that were raised in Finding 6. But it also raises the issue of PFG exams.

As we mentioned, some of the PFG doses have been changed from Rev 3 to Rev 4 of OTIB-6. And we included them there in our tables. And, like I said, those just needed to be updated to include the new values.

The TBD did state that although it was unlikely that PFGs were performed after 1948, some claimants' files indicated that it was possible for PFGs to be performed through 1956. So the recommendation in the TBD is that PFGs be assigned through 1956.

Now, as part of the Site Profile Review, SC&A referenced a paper from 1961, authors Januska and Smith. And in that paper it suggests that the type of equipment that was used at ANL through 1958 was actually capable of photofluoroscopy. So SC&A as part of its finding brought up the suggestion that the PFG assignment should be extended through 1958 as opposed to stopping in 1956.

I'm not sure how, where to go with this one. I didn't even spend a lot of time analyzing the equipment here. I was going to see if others

on the SC&A team remember the details about when this finding was put in related to PFGs.

Because it seems that there's, you know, with the exception of the paper from '61 to discuss the material, there really doesn't seem to be evidence that -- I'm actually going against the findings -- doesn't really seem to be solid evidence that PFGs were performed as late as 1958. And that their claim is that assigning PFGs through 1956 would be claimant favorable.

I don't know if anyone has any other opinion about that.

MS. THOMAS: Yes, hi. This is Elyse Thomas. And I'm the medical dosimetrist for the ORAU team.

And I think that paper -- I haven't looked at it recently -- but it think it mentioned fluoroscopic, that the equipment at ANL had radiographic and fluoroscopic capability. And that's different from PFG.

MS. BRIGGS: Right.

MS. THOMAS: So, so just because it has

fluoroscopic capability which is, you know, dynamic, realtime viewing moving organs, that is a different technology than photofluorographic. And they're often confused.

So, you know, we looked into that to make sure that that equipment didn't have PFG capability. But if I recall from that article, I don't think that's the case. I think it was fluoroscopic capability, which is different.

MS. BRIGGS: Okay.

MS. THOMAS: So we'll look into it.

MS. BRIGGS: Okay. All right. Yes, we'll keep that open for discussion for the revision of the next TBD.

MS. THOMAS: Yes. Okay.

MS. BRIGGS: Okay. I think that completes the finding for occupational medical dose.

DR. BUCHANAN: Okay, thank you.

MR. KATZ: Ron, before you get started, just to SC&A, just for proper accounting of this, we've talked all along about keeping things open.

Next time when BRS is in progress, once they're engaged, please do that.

MS. BRIGGS: I'm sorry. I think I'm a little unfamiliar with the terminology.

MR. KATZ: Ron did it too. But it's quite okay. It's just that way we know that the Board needs to have a discussion on that issue. That's all.

MS. BRIGGS: Okay.

MR. KATZ: Thanks.

DR. BUCHANAN: Okay, you want to -- so it stays open. Is that your point, Ted?

MR. KATZ: Yeah. Right.

DR. BUCHANAN: Okay.

MS. BRIGGS: Ron, I'll take care of that.

MR. KATZ: Okay.

DR. BUCHANAN: Okay. So that concludes our medical. And generally all of those will be addressed by revision on TBD-3. And so SC&A will review that when it comes out and make a written reply at that time.

So we can move on now to external, which is Finding 9. And so, Bob, do you have Finding 9 up there.

MR. BARTON: Yeah, Ron. It should be good to go.

DR. BUCHANAN: Okay. Well, I guess you got the very top of it cut off. Otherwise that's fine.

MR. BARTON: Okay.

DR. BUCHANAN: Okay. Anyway, that's good. Thank you.

Okay, we've got uncertainty and undocumented aspects of the film dosimetry needs reexamination. And essentially this was, you know, like at most sites back when they used film dosimetry up to about '88 or so, before TLDs took over, and there was a question on the response of film to the beta and gamma radiation.

And this is especially important at a research facility like Argonne where you have accelerators, reactors, solid-state sources, so a number of radiation-condition equipment. And so

dosimeter needs to respond correctly to the radiation field.

And so in our original findings in 2009 we did do a pretty elaborate listing of things that could affect response, and saw that there was more information needed to justify using the thought that the ANL dosimeter was similar to INL. And so we could use their parameters and such. And that might be true, but we needed some documentation and some more investigation of the ANL-East dosimeter, either in itself or how it compared to INL documentation that it was the same.

But then beyond that you need to say, okay, was it made for the fields that were present at ANL? And so that was our main issue there with Finding Number 9.

And so I will turn it over to Lara to have her response.

DR. HUGHES: Okay. Yes, same with the internal issues, this is ongoing because we have to evaluate what additional data that, you know, has been collected or still needs to be collected.

And then we will evaluate and try to refine the approach that's in the current TBD.

The ANL Work Group has been updated since, since the TBD was issued, or at least since the original TBD was issued in 2006 I believe. So but, yeah, any refinement would require us to find additional data.

DR. BUCHANAN: Okay. So, like the internal, we can expect to see that reflected in Rev 2 of the external dosimetry TBD?

DR. HUGHES: Right. Probably Rev 3, but yeah.

DR. BUCHANAN: Okay. Okay, any questions or comments on this?

CHAIR CLAWSON: This is Brad. Not at this time.

DR. BUCHANAN: Okay. Okay, we'll move on to Finding 5 which is similar. It's neutron dosimetry -- Finding 10, excuse me. Finding 10 which is neutron dosimetry. And of course this is the standard questions.

We used NTA film for neutron dosimetry

up until about '87-'88 when TLDs took over. And, of course, I'm sure you're all aware, NTA film had the rapid drop-off and response to about 1 MeV. And if you put shielding around neutron sources then you get lower energy neutrons which some of them fall below 1 MeV.

So our concern is did the NTA film see the dose the workers were receiving? And also if they're worn for a month there can be fading of the tracks, and of the heavy count individual tracks in the neutron interaction. And that even if they did it every month, there's still fading from the first part of the month till they're read. And so fading is an issue, especially for lower energy neutron tracks.

And then we addressed this some at Mound. And resolved some of those issues there.

Now, also the energy response of NTA film was checked to know how it was calibrated and then if there was any compensation for the energy response to see if it's calibrated from a frontal radiation and the worker might receive it from the

sides or the back.

And so this was our issues with, in Finding 10 with the neutron dosimetry, the standard issues that we have. And then at ANL, of course, they had, again, accelerators which produced a lot higher energy neutrons. And the beam ports and such reactors, and then your solid-state sources which can give you a pretty wide spectrum of neutron energy.

And so I'll turn that over to Lara for her response at this time.

DR. HUGHES: Right. NIOSH concurs that the improvement of the guidance is needed. Again, any new information will be incorporated. However, the NTA issue is, you know, well known and somewhat overarching. So, we will look into if we can, you know, develop a neutron-photon ratio model henceforth to address this issue.

DR. BUCHANAN: Okay.

DR. HUGHES: Again, this will require additional data evaluation.

DR. BUCHANAN: Okay, thank you.

Any questions or comments on Finding Number 10 then?

CHAIR CLAWSON: No.

DR. BUCHANAN: Okay.

MR. STIVER: Ron, this is John Stiver. Before you move on, if I could back up to Finding 9.

DR. BUCHANAN: Okay.

MR. STIVER: For our June report we had stated that, you know, because the work book has changed for each one of those calculations and it had not yet been reviewed as we had recommended to, you know, possibly review that work book in a little more detail. Is that something that you feel would be appropriate to do now or to wait until a new revision could come out?

DR. BUCHANAN: Go ahead.

MR. KATZ: This is Ted. If the TBDs get updated that will result in changes to the work book too, right? So that fix this issue?

DR. BUCHANAN: Yes, that's why I want to ask Lara does she anticipate the work book being

updated with the TBD change?

DR. HUGHES: I'm not sure at this point. I would assume so if there's any significant changes or numbers would result. Yeah, absolutely.

DR. BUCHANAN: Okay. So, John, I guess we would probably wait until the TBD is updated and the work book is updated and then review them both at the same time.

MR. STIVER: Okay. Yeah, that sounds good.

DR. BUCHANAN: Okay, thank you.

Okay. So that brings us to the environmental section. So we did the internal X-rays and then the external. Now we have the environmental section which is Finding Number 11.

And this has to do with the environmental data before 1972. And there just does not seem to be much information available at the time of our writing in 2009 of any environmental data to be used for TBD-4. And so I guess my question is have we found any additional

information? And I see briefly in their response they talk about using Procedure 60. Is that going to be incorporated in the new TBD-4?

So, Lara, you want to address those issues?

DR. HUGHES: Yes. As far as I've seen, there have been no additional data found. And I'm not sure if we're anticipating to find anything else.

So, yeah, I mean as you mentioned, any procedure that is used would be incorporated in the revised TBD.

DR. BUCHANAN: Okay. Thank you.

Any issues, comments, or questions on that one?

MEMBER BEACH: None here, Ron.

DR. BUCHANAN: Okay, thank you.

Okay, now we move to the general kind of overarching issues in Question Number 12, Finding Number 12. And this was the outdoor exposure, inhalation exposure associated with waste disposal operations in Area A and near

accidents.

And so in this case Area A workers could have been exposed during waste disposal or if there is accidental one-time or, you know, acute releases. And so we would like to know, you know, if that's been investigated and to what extent that's been addressed.

If you could address that, Lara?

DR. HUGHES: It has not been investigated yet. It's certainly something we can look into.

I would, based on our -- the information in TBDs and review of the claims, I would assume that any worker who's involved in hands-on disposal of waste would have received some kind of monitoring. Other than that, the Site A waste disposal operations starts in the early '40s, '43 to '49, which would be covered under the Met Lab -- well, no, I'm sorry -- up until '46 would be covered under the Met Lab SEC.

So, no, at this point that has not been investigated. Typically with incidents, not

every single incident that is in our Site Research Database would be, you know, addressed in the TBD just because the TBD is meant to be more an overview-type document. Now, if there's any indication that a worker was involved in an incident, it would be something that would be addressed on an individual basis during those reconstructions.

It's not going to be ignored if that information is available.

DR. BUCHANAN: Okay. So, is this a finding we should evaluate then at this time? Or do you see any upcoming changes in TBD-4 that would address this issue?

DR. HUGHES: This is information that would have to go back into the 1940s. I have not a good indication of how much additional data we could possibly find.

DR. BUCHANAN: Okay. So, you will look at that and incorporate it in TBD-4 if you find any?

DR. HUGHES: That's correct.

DR. BUCHANAN: Okay. Okay, so I think that we will wait because we don't have any additional information to evaluate. And so I think we will wait on any changes to TBD-4, and look and see if we find any documentation that would impact this finding, and then evaluate that and reevaluate TBD-4. If that's agreeable with everyone.

CHAIR CLAWSON: That's fine, Ron.

DR. BUCHANAN: Okay, thank you.

A similar finding in Finding 13 is a lack of consideration of occupational radiation exposure in Site A and Site M. This is part of the Met Lab and was indicated that it would be addressed outside ANL-East TBD. And there is currently no, I guess, TBD for the Met Lab but there is instructions for the Met Lab. Dose reconstruction procedures guidance.

We just didn't know what was -- how that was sorted out and what took place during dose reconstructions for the -- we addressed this a little bit earlier -- but perhaps for the

environmental part, translation from the Met Lab to the ANL-East. What is the current status of that?

DR. HUGHES: Yeah, this falls into the covered sites issue that was done by the Department of Labor. But the Met Lab, Metallurgical Laboratory is a covered site under EEOICPA up until June 30th, 1946. And then the ANL site designation starts July 1st, 1946.

There was basically a continuing of operations, however, at the cover sites if one switches to the other, regardless of where the workers actually worked. So, you see that for the Met Lab they initially worked at the campus of the University of Chicago. Then they moved operations to Site A in 1946, I believe to what's called Site B, which is the current ANL-East. Wasn't even fully operational at the time. They were still constructing the facility. I think they didn't really start up at Site B until the 19 -- until around 1948.

So all the operations in the early

what's considered Argonne National Lab was done at Site A. And it would be covered under the current ANL-East site designation. So, when we say, well, we do dose reconstruction for somebody who worked in 1946, that would be somebody who worked at Site A most likely. Even somebody who would have still worked what's commonly referred to as the West Band, that would still be covered under ANL-East site designation if they worked, if they were employed after July 1st, 1946.

Did I confuse everybody? I'm sorry.

DR. BUCHANAN: Okay, I think that SC&A needs to evaluate the response. Actually we just received these about 24 hours ago. So we will evaluate that if you don't plan on doing anything else with the TBDs.

DR. HUGHES: That's right. Just keep in mind that this was not something that NIOSH designates. We cannot, it wasn't covered by versus another covered site.

DR. BUCHANAN: Okay. Well, we'll look further into that. And then provide a written

response on that, if that's agreeable with everyone.

CHAIR CLAWSON: That's fine, Ron.

DR. MAURO: This is John. I've got a question. The Met Lab world was the Chicago pile. And I remember -- now this goes back years -- that then that was terminated and they continued reactor operations but they had a new generation of reactor, a new reactor. And that was the boundary.

And I guess I'm asking the question, is that the boundary, when you leave the Met Lab and you go to ANL-East where the rest of the pile went to this new generation reactor? Or am I misremembering?

DR. HUGHES: That would be considered what's called Site A.

DR. MAURO: Okay.

DR. HUGHES: That was the interim site where they operated at least two reactors and various laboratories. And that was operated from I think 1942 till 1954 when the lease at the site ended. And it all, whatever was at Site A was

transferred, was either shipped out or transferred to what's called Site B, which is the current location of ANL-East.

DR. MAURO: And then there were this waste area that we talked to, talked about earlier. Was that a continuum, that just continued that waste facility area where apparently there was some significant potential for exposure? Was that something that was a continuation of operations going from the Met Lab days to the ANL-East days? Or is there a boundary there also?

DR. HUGHES: That is outside the boundary of Site A, as I understand. However, it is in the vicinity of Site A. And it was associated with the operations at Site A.

From an employment standpoint, it would be workers who were employed either by the Met Lab or ANL-East that would be conducting work there. At least that's my understanding of who would work there and who could potentially get exposed.

DR. MAURO: But there is an SEC for the Met Lab. I guess part and parcel of that was

inability to reconstruct doses associated with that aspect of the Met Lab operations. And I guess I'm just alerting that if the personnel continued working in that mold and the transition, I guess I would be interested in what changed between the Met Lab and ANL-East that put you in a position to feel much more comfortable that we don't have an SEC situation when we move into the ANL-East realm. We'd be glad to discuss management part. Which did -- it did break with the reactor, but I was wondering if there is also a clean break with regard to waste management?

DR. HUGHES: I can't speak specifically to the waste management issue. But, of course, one of the first things we did was look at what changed, as we said, --

DR. MAURO: Right.

DR. HUGHES: -- between Met Lab. Because here we have an SEC based on having actually very, very limited, almost no useable data --

DR. MAURO: Right.

DR. HUGHES: -- to, you know, this site

obviously not being an SEC ANL-East, even though many of the major sites in the early period have an SEC. So we're kind of trying to evaluate.

And but we found is that it seems with the startup of ANL-East they made a conscientious effort, they were aware that they needed to monitor their workers. And they made an effort to do as good a job, I believe, as they were capable of doing at that period of time.

Now, if the data is indeed robust enough, and it remains to be seen, but they did, we have found information they did start up their health and safety program with the health physics program and also a medical program that would do the bioassays and that sort of thing.

So there's not necessarily continuation of those issues, especially with internal infeasibilities. It's not a clear cut, you know, transition from Met Lab to ANL-East. There seems to have indeed -- there was indeed a ramp-up of a program that was in place starting in 1946 sometime.

So it's not clear cut. It's a little more refined. That's why we haven't really arrived at any conclusion yet. Because there's definitely the data there. There's relatively good documentation for this. It's much more tricky to determine, you know, do we have an infeasibility or do we not.

DR. MAURO: Oh no, thank you. And that's the only reason I raised it. Thank you very much.

MEMBER ROESSLER: This is Gen. I have a question, too, on the Met Lab.

As I was reading SC&A's report, and in this particular item they mentioned that this issue should be transferred to the Board Work Group that oversees Met Lab. So I went on the website to look to see if that Work Group had been established. And I don't find anything. And, in fact, I can't find anything on the website about the Met Lab. But am I looking -- not looking in the right area or is it just not on there?

MR. KATZ: Well, Gen, this is Ted.

With respect to Met Lab, there is no Met Lab Work Group.

MEMBER ROESSLER: Okay. I suspected there was.

MR. KATZ: No, no. So, and anything related to Met Lab I imagine will end up using this Work Group to address if there's anything left to address. I don't know if it's -- but as far as whether there's information on Met Lab on this, if you go to the worksite section, that's where it would be. If it's not there, I don't know, but.

MEMBER ROESSLER: Well, I couldn't find it under the M's. I was wondering if -- I looked under University of Chicago. I just couldn't find it anywhere.

MR. KATZ: Yeah. Lara, you should -- Lara should know.

MS. BRIGGS: It's listed under the Metallurgical Laboratory.

MR. KATZ: Ron, have we run the course?

DR. BUCHANAN: Now, that is the 13 primary findings. Not shown on the BRS is seven

secondary issues. And I don't know if NIOSH has prepared any response to our secondary issues or not other than that the 1 and 2 are covered by the OTIB-6, and perhaps 3, 1, 2, and 3, the medical issues.

Where does NIOSH stand on the secondary issues?

DR. HUGHES: I do have brief responses. I did not put it under BRS.

DR. BUCHANAN: Right.

DR. HUGHES: The list of issues. I mean I can, I can at least attempt to respond.

DR. BUCHANAN: Okay. Okay, Brad, do you want to continue on with the secondary? Do you want to take a break? Or what do you want to do at this point?

CHAIR CLAWSON: Well, from everything we've already gone through, the secondary issues on this is there much to say, Lara, or are those still under evaluation with a new TBD?

DR. HUGHES: Yes, I mean pretty much. There is not anything -- I can go through it. Do

you prefer to go through it piece by piece? I can attempt to respond. I have some of the -- there was one issue that was, asked the question whether or not the human radiation experiments would be covered or that they're not addressed in the TBD. They are not addressed in the TBD.

But in the rare case that an actual worker would be one of those individuals that were involved in the human radiation experiments and that they were actually experimented on, that would be an occupational, considered an occupational exposure and that would be addressed in the BRS. I did clarify that with the dose reconstruction team. And --

CHAIR CLAWSON: Lara, I really, I really don't see any use really until we get this information out. And I understand, Lara, that, you know, it was kind of a push to be able to get to this. And you put out an earlier email that, you know, you'd do your best for it, and stuff like that.

But this time I really don't see, Ron,

until we see kind of their finished product even going through it. I think we'd better spend our time figuring out our path forward on this. But that's just my personal opinion.

DR. BUCHANAN: Okay. What about addressing the secondary issues, if we posted on the BRS could Lara put her response so that we could respond to them? Because we don't know their response to the seven secondary issues.

MR. KATZ: Well, that's okay, Ron.

DR. BUCHANAN: Okay. So we will put our, we will add the seven secondary issues on the BRS.

And, Lara, if you could put your written response on that, that way we can evaluate them, you know, on our own and see where we need to go from there.

DR. HUGHES: Absolutely.

DR. BUCHANAN: Okay, thank you.

Okay. So, Brad, that's all I have.

CHAIR CLAWSON: Okay. Is there any questions from any of the other Board Members that

they have?

MEMBER BEACH: This is Josie. I'm just curious. Is there any plans to do an Evaluation Report for this site?

DR. HUGHES: That would depend on identifying an infeasibility. It's definitely not ruled out. But at this point we're still evaluating. I mean, we may -- we haven't identified a clear infeasibility. We now, however, we do have a lot of issues. But, you know, early internal data is often an issue. We have the neutron data.

Although, yeah, that remains to be assessed. So I would not rule it out. But at this point I cannot speak to it.

MEMBER BEACH: Okay. So still looking at it. Thank you.

DR. MAURO: Along those lines -- this is John again -- so I'm presuming that there's no 83.13 in the mill. But you're saying that your research may trigger 83.14?

MR. KATZ: Right. Right, John.

DR. MAURO: Okay, thank you.

CHAIR CLAWSON: So that's, putting it in a nut shell, that's kind of where we're at now, if I'm taking this right, Lara, that you guys are still evaluating the data, you're still collecting it, and you're trying to figure out basically where we're at on it. And with 83.14, we may not. It's just, well, that decision has not been made yet; correct?

DR. HUGHES: That's correct.

CHAIR CLAWSON: Okay. So I guess, Ted, you know, I guess the one question I have, Lara, from the Work Group chair is this: what kind of a time frame do you think that we are looking at on this?

DR. HUGHES: Okay. Well, that's the question.

CHAIR CLAWSON: I know that's the million dollar question and stuff, but I'm just trying to get a basis.

DR. HUGHES: Yes. Maybe I could defer that to Mr. Rutherford because it depends a lot on

our resources.

MR. RUTHERFORD: This is LaVon. I think, you know, we can probably give you a feel for what the project plans are right now. But it, as Lara said, it depends a lot on resources and priorities. So, you know how things go, depending on what the hot item is at the time.

But I think we can give you the estimates based on the project plan now. And I don't have it in front of me or I'd do that.

MR. KATZ: We can get this in the Board coordination report, LaVon.

MR. RUTHERFORD: Yes.

Plans for March ABRWH Meeting Presentation (including issues to solicit from ANL-E workforce)

MR. KATZ: Okay. Right. So, Brad, part of the Board materials for the meeting will be a Board coordination report. And so they can put in there what their current time frame is for the new regs.

CHAIR CLAWSON: I was just kind of,

well, I figured if Bomber was doing it would be, you know, they call him Two-Weeks Bomber for --

(Laughter.)

MR. KATZ: So I think what would be useful now to have on the agenda is opportunity to talk to the folks in the audience there about where this stands now. And, you know, again, issues for which people in the audience might either themselves or know people who could help contribute information on sort of that.

So I think if you both could just speak a little bit about what you think some of that might be. And then we need someone to sign up to -- Lara, you are giving a presentation, I believe?

DR. HUGHES: I can. That's a good question. I would assume so. I mean, I can definitely give an update on, you know, the issues and the path forward if that's, if that's desired.

MR. KATZ: Yeah. But I think, so the punch line of that though ought to be here are some areas where we have a lead and we'd be happy for information from people who worked at the site.

You know, for example, you talked about the issue of whether, you know, everybody indeed was monitored, or whatever. But that's really up to all of you to discuss what might be some sort of key questions to ask of the public.

That's why there's no need to decide at this point for the Board meeting.

MR. RUTHERFORD: Ted, this is LaVon. I think we can come up with some key points or key issues. We can then offer the presentation to kind of prod the audience to offer up some additional information.

MR. KATZ: Thanks, LaVon. And I'll just say to the Work Group Members and to SC&A, if you all would just send some emails. You don't have to do it on the spot but we've had this discussion now, and it may be clear to you something that's been particularly salient or as worthy of input from the public. If you would just send then, Lara, by email some suggestions for questions or issues that we'd like to hear from the public about, that would be great.

DR. MAURO: This is John. One thought I had, since we had this Attachment 2 to our report where we -- the original one, all the way back to 2009, where I think quite a bit of interview work was done and there was answer material. That would serve as a nice platform to say, okay, here's this platform of the original round of interviews. And then build from there given the fact that we're back into this discussion again. So, you know, marrying the two might be helpful.

MR. KATZ: Yeah, John, you guys are familiar with what you covered in the interviews. So, I mean, by all means you can refer to those in considering what might be some key questions to ask.

DR. MAURO: Yes. That's why I bring it up.

MR. KATZ: Yeah, thanks. Yeah.

So, and then schedule-wise, you know, we have Ron on short lease. But I think presentations that could be, those presentations have to be in by close of business Monday. That

means we'll first have questions from Lara to highlight once we get system update here. But need to get them in this afternoon, the end of the day I think, for her to be able to make any use of them.

And, Brad, I don't know whether you want to be part of the talking on the update or do you just want introduce Lara --

CHAIR CLAWSON: No.

MR. KATZ: -- you want to introduce Lara.

CHAIR CLAWSON: Yeah, you know, we can do whatever we need to be able to do. But I just, right now I agree with you, especially where we're in the venue we are, a lot of these questions that we have, and they're also what NIOSH has, there may be people in that venue that might be able to help with this.

MR. KATZ: Sure.

CHAIR CLAWSON: I just want to make sure that we have something to be able to put out to them.

MR. KATZ: Sure. Now, so you'll just

be introducing Lara basically. And then Lara can give a brief presentation. Is that, are we all good with that? Lara, can you?

DR. HUGHES: Yeah, absolutely.

MR. KATZ: Okay.

CHAIR CLAWSON: Sounds good.

MR. KATZ: All right, if there's nothing else, I think we can, I think we can adjourn.

CHAIR CLAWSON: Okay, that sounds good. I was just going to ask if -- I've asked this once before, but if any of the Board Members or any of the SC&A or ORAU if they have any questions, you know, we can help with. Is there any?

DR. BUCHANAN: This is Ron with SC&A. And I just want to summarize.

Our responsibility will be to address Finding 3 and 13 and provide a written response. The remainder of the findings we will wait for changes in TBDs to evaluate them, and perhaps the work books that go with them.

And we will also put the seven secondary

findings on the BRS. And then, so when Lara has time she can go in and address those with their response so that we can move forward on that area.

MR. KATZ: Yes. And as new TBDs get issued, you know, I'll pass those right away. They won't have to wait for a Work Group meeting.

DR. BUCHANAN: Okay, thank you.

MR. KATZ: Yes.

CHAIR CLAWSON: Okay. That being said, we'll see you all in Naperville.

MR. KATZ: Yes. Yes. And thank you, everybody, for the work on this meeting.

Adjourn

DR. BUCHANAN: Thank you.

CHAIR CLAWSON: Have a wonderful day. Thanks. Bye.

(Whereupon, at 11:59 a.m., the meeting concluded.)