Centers for Disease Control
National Institute for Occupational Safety and Health
Advisory Board on Radiation and Worker Health
Subcommittee for Procedures Review
Wednesday, May 25, 2022

The Subcommittee convened via Teleconference at 11:00 a.m. EDT, Josie Beach, Chair, presiding.

Present:

Josie Beach, Member
Loretta Valerio, Member
Paul Ziemer, Member

Also Present:

Rashaun Roberts, Designated Federal Official
Nancy Adams, NIOSH Contractor
Bob Barton, SC&A
Kathy Behling, SC&A
Fin Black, SC&A
Ron Buchanan, SC&A
Grady Calhoun, DCAS
Rose Gogliotti, SC&A
Lori Marion-Mmoss, DCAS
Wade Morris, ORAU
Michael Rafky, HHS
Lavon Rutherford, DCAS
Tim Taulbee, DCAS

Contents

Proceedings

(11:00 a.m.)

Welcome and Roll Call

Dr. Roberts: I think I'm going to go ahead and open it up since it's 11:00 a.m., and we'll go from there. So good morning everybody. Welcome to the Advisory Board on Radiation and Worker Health. This is the meeting on the Subcommittee on Procedures Review. I'm Rashaun Roberts, and I'm the DFO for the Board.

There is an agenda for today, and it's on the NIOSH website under scheduled meetings for May 2022. Since the Subcommittee will be discussing a number of different documents, some of which involve specific Sites, we do need to address conflict of interest in the roll call. If a conflict does happen to come up during the course of the meeting, Subcommittee Members and others need to recuse themselves from the discussion where that conflict might apply.

So as we move through the roll call, Subcommittee Members and others please state where you have a conflict of interest, and let's go ahead and get started with the Subcommittee, Josie Beach.

(Roll call)

Dr. Roberts: Thanks everyone, and welcome again to everyone. I just need to go over a couple of additional items before I give the floor to Josie Beach, who chairs the Committee. So everyone should have called in on the telephone line versus using audio through Skype, so hopefully everyone is on the same page at this point.

In order to keep everything running smoothly and so that everyone speaking can be clearly understood, please mute your phone unless of course you're speaking. If you don't have a mute button press *6 to mute. If you need to take yourself off, press *6

again.

As I stated earlier, the agenda presentations and other documents that are relevant to today's meeting can be found on the NIOSH DCAS website, and all of these materials were sent to Board Members and other staff prior to this meeting.

So with that, I'm going to go ahead and turn the meeting over to you Josie.

Ms. Marion-Ross: Hey Rashaun, this is Lori reporting in.

Dr. Roberts: Okay, thank you Lori.

Carryover Items From Feb 15, 2022 SCPR Meeting

Chair Beach: Good morning, everyone. So we do have an agenda as Rashaun mentioned and posted. Our first item is the carryover items, and Kathy has put out a document that lists all the carryover items, and I guess I'm going to ask Kathy do you think we should go over some of those now? I know some of them are going to be tracked at the end of the meeting also. There might be a couple of things --

Ms. Behling: Okay, yeah. I can at least explain. Are you seeing my screen? I have the agenda up right now?

Chair Beach: No, I'm not. Is anybody?

Dr. Roberts: No.

Chair Beach: No.

Ms. Behling: Okay, okay. So sharing controls are disabled by policy. How do I -- I'm not sure how to take control of this. Does anyone have any suggestions? When I select the button at the bottom for sharing my screen, it's giving me -- it's saying "Sharing controls are disabled by policy." I'm not sure what that is.

Chair Beach: No idea.

Dr. Taulbee: I think it may be because you originally came in as under Guest. Bob, I see you listed as a presenter. Can you present or show a screen?

Mr. Barton: Yeah. Let me see if I can get this to you. I think Tim you're right, that it depends on how you log in, whether you're a guest or a presenter.

Ms. Behling: Yeah I -- okay. I thought I logged in as -- I can try to log in again if you would like. Let me --

Chair Beach: Yeah. Go ahead, Kathy.

Ms. Behling: Yeah, because I really need to --

Chair Beach: Yeah, you do. You have the lion's share.

Ms. Behling: Okay I'm -- yeah. I'm going to cancel out here and try to come back. So sorry about this, but I am going to have to log off.

Chair Beach: Okay.

Ms. Behling: Okay.

(Pause.)

Ms. Behling: Okay. I am entering here as a CDC cardholder.

Chair Beach: Oh, it's loading. That's a good sign. Oh, there you go. Yep, we're viewing your --

Dr. Taulbee: This is Presentation Handout Carryover Items.

Ms. Behling: Okay, and I think I'm going to be able to do this. I'm going to select "don't join audio" I believe.

Chair Beach: Correct.

Ms. Behling: Okay, and now let's see. Okay. So Bob, are you showing -- should I try and share my screen?

Chair Beach: Yes.

Mr. Barton: Yes. I think that would probably be best.

Ms. Behling: Okay. Let's do this. First of all, do you see the agenda?

Chair Beach: Yes.

Ms. Behling: Okay, all right. Let me also --now we're going to go to this carryover. Do you see the Carryover Items from February 2019 and 2021? Are you seeing that on the screen?

Chair Beach: Yes, we do.

Mr. Barton: Yes.

Ms. Behling: Okay. Initially, what I did, I had identified a list of documents that these documents have actually been updated on the BRS. That happened before we lost access, and when we were talking about putting together an agenda for today's meeting, I listed all of these --

I decided to go back and say are there outstanding items for documents that are already on the BRS that we should be still thinking about and addressing until we get access to the BRS, and I came up with this particular list.

Now I listed each one of these documents separately, and in response to that, Tim Taulbee gave NIOSH's progress with regard to these items. So I started out with a summary, so that we would know total number of findings, how many are outstanding, and then the additional pages have details about each of the findings and each of the observations.

If you take note on 3/17/2022, that's when Tim gave us a response to the agenda items, which I ultimately pulled off, Josie referred to, make this a separate document. So not to confuse things, because I made this a separate document as it didn't include it on our temporary BRS because the temporary BRS is going to be used to update all of the data in the BRS when we get access again.

These are findings that are already listed in the BRS, but we still had issues that had to be resolved. All of the documents that are listed on this summary table, the OTIBs and the PER-073, Tim's response back in that March was that NIOSH is working on these things, but they're not in a position to discuss them or give any responses at this point.

However, he did indicate back at that time that the dose reconstruction that's acknowledged for Peek Street Facility, for which SC&A had a number of findings, that he felt that he would have responses. Just scroll down. I think that's the last one here, that they would have responses to those findings for today's meeting.

And that's, I guess, what prompted me to put out an email yesterday and I apologize to everyone, indicating that I thought NIOSH would perhaps be prepared to at least discuss the Peek Street responses. But it's my understanding from Lori that that is probably not going to happen today and perhaps that's somewhat my fault, because they didn't think that it was on the agenda.

And Josie please, step in here. I was just going to say if we list Carryover Items as one of our agenda items, it seems to me that if our agenda is not super-filled, which today I don't think it will be, that when NIOSH has responses we should be able to fit that into that agenda item. I don't know if you would agree with that.

Chair Beach: And I agree with that. However, when I saw the emails flying back and forth yesterday, I decided not to step in because it was such a short turnaround time, and I felt like if SC&A even had a chance to go through them and, as Lori pointed out, they weren't ready to present so I was okay with that.

But in the future moving forward, I think that is probably a good idea, is to be ready if those are ready. Unless it's such a short turnaround time. With us getting it one day before the meeting, I mean

that's not a lot of time, other than maybe just a verbal. I can throw that over to NIOSH and see what they think also.

Ms. Marion-Ross: I agree with you, Josie. This is Lori.

Dr. Taulbee: This is Tim. I'd also agree. I mean yeah, absolutely. I mean we certainly had hoped to give you more time on the Peek Street, but things just didn't spin out that way. And you know, that's -- so we're -- we will be ready to do a presentation if you'd like, or if you want SC&A to do their review and then provide, you know, their responses. However you want to do it is fine with us.

Chair Beach: Yeah. Well, I think SC&A is going to have time to look at it, and maybe we can just do it back to back at the next meeting, just you guys present and SC&A can follow up if that is suitable for everybody.

Ms. Marion-Ross: This is Lori. That sounds like a good plan, Josie.

Chair Beach: Okay, and then in the future -- go ahead?

Ms. Marion-Ross: I'm sorry, Josie. SC&A will be prepared to respond to their replies. So yes, we'll be ready.

Chair Beach: Well and maybe like today's meeting, if NIOSH can let us know what they think they may have ready, like Birdsboro. I knew that, I know that one's coming up. Maybe we can be better prepared, or like Tim said, maybe get it a little earlier if possible.

Ms. Marion-Ross: Right, and if -- we also did receive from NIOSH yesterday some responses to the Battelle TIB-5000, and again I wasn't sure if NIOSH was going to be prepared just to go through their responses, and if so I was going to have the reviewer on the line. But again, it appears that it would be best if we wait til the next meeting for that. So it seems

to me that those will be --

The other thing I'll make mention of, and this is an item again, not to confuse things, but it's an item that is on our temporary BRS matrix, and that has to do with the Grand Junction Facility. We talked last time. One of the Carryover Items was supposed to be that NIOSH send us, we were talking about observation, I think Observation 3 or I'm not exactly sure which one, and NIOSH would send us the information, the Standard Operating Procedure for the radon chamber.

And also there was an interview done, I think, with the health physicist, and we had asked to review that documentation. We did get that documentation I think back around the 7th or so, 7th or 9th of May. We started to -- Don Buchanan started to prepare a response to the documents that we were sent and where we reviewed, and we prepared a memo.

However, we determined that one of the documents that we were asked to look at or that we asked for and that we got to look at was an official use-only document, and for us to be able to cite that in our memo, we have to have DOE clearance. We were not able to get that clearance in time for this particular meeting.

So yeah, I apologize for that. We thought we were going to have, be able to have a discussion on that, but that didn't happen because of that particular document that we were referencing.

Chair Beach: Okay, and then on the TIB-5000, when I reviewed that there was one item, and this is a question for Tim. I wrote it down, but I don't see my notes here, that they were working on a separate memo for that particular item. I think it was 3 or 9. I'm not sure if anybody's familiar with that. I'm just wondering if that will be prepared by the next meeting?

Dr. Taulbee: This is Tim. Most likely not. That one's taking up -- going to take some significant effort in

order to document into a separate report. It's something that we use quite a bit throughout the entire dose reconstruction process. This has to do with the GSD of 3 that we use for internal doses, and we've -- we decided to -- that needs to be pulled out into a separate report in and of itself from that standpoint.

Unfortunately, I don't see that being ready for the next one. However, the one afterwards I do. But I guess then again it does depend upon when you schedule your next meeting. That plays a role in this as well so --

Chair Beach: Okay, all right. Thank you.

Ms. Behling: And Josie, if I can ask a question also of Tim. I also read through other responses, and it looks as if in most cases they were all observations, but NIOSH did concur with most of the concerns or questions that we had. I didn't -- I'm not sure that I know what the follow-up action is going to be or if you know, because there was some discussion that that OTIB or that TIB might be cancelled.

But if you are in agreement with our concerns, how will that be addressed? Do you know at this point? And Tim, that was the only question I had reading through your responses. And that question is for Tim.

Mr. Rutherford: Tim, are you there?

Ms. Behling: Oh boy, I sent Tim away.

Mr. Rutherford: Yeah, yeah. It sounds like we lost Tim. Yeah we -- you know, we'll give Tim a minute here, but we do anticipate actually cancelling that TIB and Tim, we will address that and I believe we've indicated in the responses, I don't have the responses in front of me at this time.

But I believe we indicated where we were going with that, and if the items are being used in dose reconstruction, we will have a new location for each of those items. That would be where they would be

addressed.

Ms. Behling: Okay. That was my question, because when I -- and I just briefly read through them because we received them yesterday or the day before, and in many cases it said yes, we concur and we agree that this should be done.

But there was no indication that I could see as to where that correction would be made, what documents, and especially my concern was the fact that this document may be cancelled. So just wanted to be sure that that was going to be picked up somewhere else.

Mr. Rutherford: Yeah well, and we will make sure that the Subcommittee and you are -- and SC&A are made aware of locations.

Ms. Behling: Okay, all right, and again we can have a further discussion on that during the next meeting. But that may be something that you want to include in that discussion if you don't mind.

Mr. Rutherford: Yes, we will.

Ms. Behling: Okay, thank you.

Dr. Taulbee: This is Tim again. Sorry for that. My entire system just dropped; the network went away. Thanks Bomber for filling in, and I'll catch up with you later on what we have to do there.

Mr. Rutherford: I just hope you don't do that to me on something hard.

(Laughter.)

Dr. Taulbee: Right.

Ms. Behling: I don't know when these systems are down. Okay. So the only other carryover item I think to discuss is the templates. Lori had indicated she would, she did provide a list of the templates, but she was going to provide an updated list I believe, and Lori, how's that coming?

Ms. Marion-Ross: This is Lori. Josie, it's kind of slow but I made progress. So you guys should be receiving that in a few weeks. Kathy had asked for some time lines basically on when they were to be -- when our templates were revised, so I'm pulling all that together to make sure that list is inclusive to her request.

So I would say a couple more, two or three weeks and I'll have it for you. I'll send out an email as well.

Chair Beach: Lori, that's perfect.

Ms. Behling: And Josie, I have also, if you don't mind, I did take a list, three -- at the last meeting, we discussed about the templates, and Lori did send us a list. And what I requested thereafter was can we determine what version are we on and what's the latest date and those types of things, just a little bit more details about the templates.

Now I wrote, at least a note to myself, that under our supplemental topics today, I wrote down that perhaps we can have another discussion on the templates, because I took the list that Lori initially gave us, and I at least went through the list and identified, and I will -- I didn't get a chance to send it out, but I will pull it up for us later in the day, unless you want to discuss is now.

It lists all of these Sites that supposedly have templates, and those for which we have already done a review and those that I could not determine, I don't think that there has been a review done by SC&A. I just thought we might have that discussion at the end of the meeting and perhaps there could be some tasking.

I don't know, that's up to you. But I do, was hoping that we could have more discussion on those templates.

Chair Beach: Okay. No, that's fine. I'm okay with waiting til it's in your -- in the agenda. So anything else on carryover?

Ms. Behling: I have nothing else. I don't know if NIOSH has anything to add.

Ms. Marion-Ross: Correct me if I'm wrong Tim. Again, this is Lori Marion-Moss. We don't have anything to add at this point regarding carryover.

Dr. Taulbee: That is correct. Yes, nothing.

Chair Beach: Okay, and anything that is in our carryover list that you think would be ready for the next meeting, and next meeting being probably in the three to four month timeframe I would say, or mid-summer, that you think would be ready?

Dr. Taulbee: I'm quickly looking at the list. Oh man.

Chair Beach: I know Birdsboro was high on the list.

Dr. Taulbee: Let me get back to you by the end of the meeting on that. I'm sorry.

Chair Beach: Maybe towards the end of the meeting.

Dr. Taulbee: Yeah, thanks.

Chair Beach: Okay, thanks Tim. Loretta, anything? Any questions?

(Simultaneous speaking.)

Member Valerio: No, not right now Josie. Thank you.

Member Ziemer: This is Paul.

Chair Beach: Okay, Paul. I was just going to ask if you had joined us.

Member Ziemer: Well, I joined about 11:15, and so I've been listening. But just wanted to let you know I was aboard. Sorry I was late, but that's -- sometimes things don't work out.

Chair Beach: Yeah, exactly. So we're happy you're on.

Member Ziemer: Thank you.

Chair Beach: So we just got through our Carryover Items. I know you're aware of that. Any comments on the carryovers Paul or --

Member Ziemer: Right, no. No comments. I think obviously we're going to have to meet and tie a lot of things up yet.

Chair Beach: Yeah, and Kathy, I appreciate the carryover document. It's helpful and it's useful. Is there any additions that anyone thinks that needs to be made to it?

(No response.)

Newly-Issued SC&A Reviews

Chair Beach: Okay. Hearing none, I think we can tee up the DCAS-PER-052 subtask 4, the Westinghouse Nuclear Fuels Division case reviews. I know that's you Kathy, so we'll give you a minute.

DCAS-PER-052, Subtask 4 Westinghouse Nuclear Fuels Division Case Reviews

Ms. Behling: Okay, do you see my screen?

Chair Beach: Yes, we sure do.

Member Ziemer: Yes.

Ms. Behling: Okay. I'm ready when you're ready. All right, okay. The first one, first document review we're going to talk about today is PER-052, and that's associated with the Westinghouse Nuclear Fuels Division, and for this facility, there was never a TBD issued, and so this is where the templates come into play.

Under SC&A's Subtask 4, we reviewed three cases associated with the Westinghouse Nuclear Fuels Division. Summary of the facility history. They received enriched uranium from Fernald and some plutonium from West Valley that actually originated at Hanford. Records indicate that the plutonium was also -- also included thorium.

The operational period was 1971 through 1972, and the residual period was 1973 through 1979. PER-052 was issued in March of 2014, and that was to assess changes to the June 2012 DR template. The revisions incorporated updated data from the discovery of about 9,600 air samples, and this new data significantly increased the inhalation intakes.

In addition, the template established three categories of unmonitored workers, namely Operators, laborers, Supervisors and other workers. So SC&A reviewed PER-052, Subtask 1 through 3 in October of 2014, and that review -- yeah. That review did include evaluating the DR methodology for the template. So on the list that Lori gave us, this is one that we have reviewed.

SC&A during that review identified two findings. In Finding 1, the guidance for adjusting intakes for partial, partially monitored versus completely unmonitored cannot be followed with the data provided in the template, and with Finding 2 the designation of plutonium-241 as an alpha emitter is incorrect. We discussed those findings and closed them at the April 28th, 2015 Subcommittee meeting.

With case reviews, let me see if I'm on the right -- oh yeah. For the case reviews, SC&A suggested that cases be selected based on three criteria. We wanted the one case that resulted in a POC between 45 and 50 percent. That particular case represented a worker that was classified as a Supervisor.

Also we wanted one case that had internal dose and was categorized as an Operator, and thirdly a case where there was internal dose assigned and the individual was classified in the Other category. SC&A submitted its review of the reworked cases in December of 2021. Since Case 1 represented the best estimate, we reviewed both the external and internal pathways. However, for Cases 2 and 3, we just assessed the internal doses that were impacted by PER-052, which is really our charter.

When NIOSH reworks their cases, they used the most

current and applicable DR tools. They recalculate all the annual doses and they rerun IREP. In this case, it was not necessary to send the revised DR report back to the DOL because the compensation decision did not change.

So Case 1. This is again the EE represented the reworked case, the reworked DR was between 45 and 50 percent. The EE for this case worked at the facility for multiple employment periods. The EE was monitored periodically for radiation exposure and was diagnosed with a qualifying cancer during his, the employment period.

Okay. This table shows a comparison of the reworked doses and the original doses for Case 1, and as you can see from the table the external doses increased, but the internal doses increased significantly. So we look at both the original and the reworked, and for calculating external doses in the original dose reconstruction, ambient dose was assigned for unmonitored periods, and all recorded doses were zero.

So therefore they were treated as missed dose, and then this dose was calculated assuming 19 zeros times and LOD of 40 divided by 2. We also applied a glovebox correction factor of 2.19, and the DCF values were based on IG-001, the external dose guidelines. Data was entered into IREP as a lognormal distribution, with a geometric standard deviation of 1.34, and that resulted in a total of approximately 800 millirem.

Okay. The ambient dose in the original DR was fine for each year of employment. A DCF-1 was applied and annual doses were entered into IREP as a normal distribution, with a 30 percent uncertainty. Again, this resulted in a total dose of approximately 1 rem.

For occupational medical doses, in the original case or the original DR, doses were calculated for the X-ray exams that were found in the DOE records, and doses were based on guidance in OTB-006, Rev. 3, page change 1. It resulted in doses less than 1

millirem and therefore those doses were not entered into IREP.

Now for the rework case, the external photon dose, ambient dose was assigned during unmonitored periods of employment, and although the PER addresses changes and reduced in the 2012 template, this case was not reworked until March of 2014. By that time, another template, another, yeah, another template for the Site was revised and issued in 2014, which significantly lowered the external dose during the residual period. That was as a result of introducing OTIB-70 guidance.

Again, IG-001 DCFs were applied, and doses were entered into IREP as a normal distribution with a 30 percent uncertainty. This resulted in a dose of approximately 300 millirem. For occupational medical dose, the rework DR calculated doses for each recorded X-ray exam. They based those doses on guidance in OTIB-0006, Rev. 4, and as with the original, the resulting doses were less than 1 millirem and not entered into IREP.

So SC&A's review of the cases and of the reworked case, we reviewed the DOE files and also the 2012 and 2014 templates. As mentioned, the external doses were based on guidance in the 2014 template, which is -- which reduced those doses. The residual period doses decreased in the 2014 template because rather than using residual period dosimetry, the standard derived residual dose from OTIB-70 were incorporated into the template, as I previously mentioned.

The annual doses were correctly entered into IREP as chronic exposure, with a normal distribution and 30 percent uncertainty, and also SC&A could confirm doses were derived as stated, we did have two findings.

Okay, in Finding 1, it has to do with the DCFs that are specified in the template to be applied. The 2014 template states that the exposure to organ DCF to isotropic geometry be used.

However, the guidance doesn't specify if the DCFs are for the exposure or the ambient isotropic geometry, and actually when the rework was done, the rework DR used the DCF that's typically applied, which is the AP geometry and applied that DCF, which is actually more claimant-favorable. That's Finding 1.

Finding 2, for the external dose, NIOSH used ambient dose and SC&A questions why the ambient dose was assigned during the operational period. There were no external monitoring records during the time that the EE was monitored for internal exposure, and some of those results were positive.

Therefore, we questioned if the most claimant-favorable dose, such as maybe in a co-exposure dose would be more appropriate. I'm not even really sure that a co-exposure dose has been calculated or developed for this particular Site. I doubt it, but we just wondered if there would be something that perhaps would be more claimant-favorable than the ambient dose, and so that's our Finding 2.

Okay. Moving on to the internal dose for the original dose reconstruction, there were positive urine bioassay results during the operational period. The highest value was entered into IMBA, which projected nearly 133,000 DPM per day of the uranium-234. NIOSH compared solubility types S, M and F with Type S resulting in the highest dose.

Recycled uranium was also included in the assessment, and that was based on a two percent enriched uranium. Doses were entered into IREP as a chronic exposure with lognormal distribution and a GSD of 3, and this resulted in a total dose of approximately 4.5 rem. For unmonitored internal dose, there was one year with no bioassay monitoring. The internal dose was based on the facility air concentration data, and that was from the 2009 template.

The unmonitored exposure was calculated using a geometric mean intake value and assigned as thorium-228 and thorium-232. NIOSH compared

again solubility types M and S. Type M resulted in the higher dose. The thorium ratio that was assumed was 50 percent thorium-228 and 50 percent thorium-232. The data, the annual doses were entered into IREP as a lognormal distribution with a geometric standard deviation of 4.638.

That was in accordance with the template guidance, and the total dose was insignificant. Okay, and missed dose in the original dose reconstruction was the uranium results during the residual periods were less than the MDA value. So chronic intake based on assuming one-half of the MDA value for plutonium. They also assumed a 12 percent ten year old grade plutonium that was associated with Hanford. Compared Types M, S and Super S and Type Super S was claimant-favorable.

Data was entered into IREP as a triangular distribution and resulted in a total dose of approximately 300 millirem being assigned.

Okay, original unmonitored radionuclides, the template states that if the EE was monitored for uranium and/or plutonium, unmonitored dose should be assigned for any unmonitored uranium, plutonium or thorium, and that should be assessed based on 95th percentile to the co-exposure intake.

So for this case, the unmonitored thorium-228 and 232 was assessed using 95 percent intake, with 95 percent co-exposure intakes for the operational period. NIOSH compared Types M, S and Super S, with Type M resulting in the highest dose, and again the ratios were assumed to be 50 percent thorium-228 and 50 percent thorium-232, and they were entered into IREP as a chronic exposure as a constant. That resulted in dose of approximately 100 millirem.

For the reworked case calculating recorded internal dose, NIOSH identified three positive uranium urine bioassays during the operational period, and the highest value again was entered into IMBA, which projected a U-234 intake of nearly 133,000 DPM per

day, which is the same as the original.

However, the rework adjusted that intake based on the bioassay period, which resulted in an intake of approximately 5,300 DPM per day. A comparison of solubility Types F, M and S was done, with S resulting in the highest dose. Recycled uranium component was considered using two percent of the enriched uranium, and as 12 percent ten-year old plutonium and natural thorium.

The recycled uranium ratios for each of the radionuclides was compared and the largest intake was used, and annual doses were entered into IREP as chronic exposure with a lognormal distribution in GS DF-3. This resulted in finding a dose of over 17 rem. Reworked unmonitored radionuclides, as mentioned the template characterizes the unmonitored workers into either Operators, laborers, which represents at this dose category is based on the 95th percentile of the air sample data.

The Supervisors is Category 2, and that's 50 percent of the Operator dose, and the other work category is ten percent of the Supervisor dose. For this case, the EE was categorized as Supervisor, and so the calculated unmonitored dose using a plutonium mixture and compared solubility Types M and S with M resulting in a higher dose, and it was chronic -- the doses were entered in IREP as chronic exposure and as a constant value, and the total dose that was assigned was approximately 1 rem.

Okay. SC&A's conclusion on the rework for Case 1 for internal dose, again SC&A reviewed the DOE records and the 2012 template. We reviewed the CADW files in IREP and we were able to verify that correct intake values were used to calculate the recorded dose. We agree with the fact that the EE should have been classified as a Supervisor, and for unmonitored radionuclides, Type M was the most claimant-favorable solubility.

Doses were correctly entered into IREP and doses were assessed to the date of the cancer diagnosis.

SC&A notes that there was an extra entry into IREP. The plutonium-239 was entered twice, which resulted in a slight overestimate. But we have no findings with the rework of Case 1.

Okay. If we're ready, we can move on to Case 2, and Case 2 represents the Operator category, and in this particular case we only looked at the internal dose, which was impacted by this PER. The EE for this case worked approximately 20 years at the Westinghouse Nuclear Fuels Division. He was not monitored and was diagnosed with a qualifying cancer approximately ten years after the termination of employment.

This table shows you a comparison again of the reworked and original doses, and external doses decreased but the internal doses significantly increased. Okay, for the original dose reconstruction, the EE was not monitored, and then internal dose was based on gross alpha air sampling data from the operational period. NIOSH used the geometric mean intake rate for inhalation and ingestion, and they used CADW and compared plutonium, uranium and thorium mixture intakes, and plutonium resulted in the highest dose.

They assumed the 12 percent ten year old plutonium mixture and compared solubility Types M and S, with M resulting in the higher dose. The lognormal data was entered into IREP was a lognormal distribution, with a GSD of 4.638. That resulted in a dose of less than 50 millirem.

For the reworked case, again the EE is an Operator and as with the original, they compared the plutonium, uranium and thorium mixtures, with plutonium resulting in the highest dose. They also applied the 12 percent ten year old plutonium ratios. The operational intakes used for both operations and residual period. They used operational intakes for both those periods.

They compared again the solubility Types M and S, with M being the most, more claimant-favorable, and

doses were entered into IREP as constant, resulting in a total dose of 5.5, approximately 5.5 rem. Then SC&A reviewed the template, the CADW files, IREP. We were able to confirm that the data was entered correctly. We agree with the fact that the EE should have been categorized as an Operator, and we agree with all of the assumptions used for calculating the internal doses, and we have no findings associated with doses calculated for the Operator.

On to Case 3. This individual represented the category of Other Worker, and he -- the EE was employed for multiple decades and not monitored, and diagnosed with a qualifying cancer during the employment period. Again, here is our table of comparisons between reworked and original doses. There's a slight decrease in external dose, but a significant increase in internal dose due to the discovery of the additional air sampling data.

The original internal dose calculated for Case 3 was no monitoring, and so they used air sampling data during the operational period. Calculated doses based on the geometric mean intakes for inhalation and ingestion. Again as with Case 2, compared the plutonium, uranium and thorium mixtures, and plutonium resulted in the highest.

Used a 12 percent ten year old plutonium mixture, again compared solubility Types M and S, with M being the higher, resulting in the higher dose. All doses were -- annual dose were entered as a lognormal distribution, with a geometric standard deviation of 4.638. That resulted in a total dose of about 50 millirem being assigned.

Reworked based on the job title. The EE was considered an Other category worker, and again same internal dose assessments and assumptions made. Compared the three mixtures with plutonium being the highest, used the 12 percent ten year old plutonium mixture ratios. Entered the operational intake values for both the operational and residual periods as a claimant-favorable approach.

Compared Types M and S solubilities with M being the higher. Doses were entered as a constant, and that resulted in approximately 200 millirem of total dose, internal dose being assigned. SC&A reviewed all the relevant data and concurs that the EE should have been assigned as an Other worker, and we also agreed with all of NIOSH's internal dose assumptions, so we have no findings.

Okay. In summary, there were three cases. The first case was a Supervisor whose POC was between 45 and 50 percent. The second case, we looked at just the internal dose for an Operator category, and for the third case, internal dose for the Other category. We had two findings on the rework of Case 1.

Finding 1 had to do with the guidance in the template indicating that the DCS should be -- that should be used to calculate the dose. It's not clear which isotropic geometry they are referring to in that guidance, and that's not what was used in the rework. Number two is whether -- SC&A questions whether the ambient external dose should have been used rather than some other more claimant-favorable dose for the operational period.

Internal doses for the two cases, for Cases 2 and 3 were done in accordance with PER-052. So and I did mention this during our last meeting, but I -- we added an observation, because as a result of this review, this is what generated our discussion on the templates at the last meeting. We realized that the Westinghouse Nuclear Fuels Division template was revised in 2012, 2014 and there was also a revision in 2016.

When templates, first of all when they're being used and when they're being changed, we only become aware of them if there was an PER issued, or if it comes up in a case review under the dose reconstruction group. So our observation is and suggestion is that the Board should be given the complete list and be notified of changes.

So I think we've started that process by Lori giving

us the list, and as we'll be discussing later in the day, I'm going to go through that list and let the Subcommittee have an understanding of how many are on the list and how many have been reviewed to date. And that's it for PER-052.

Chair Beach: Thanks Lori. Any questions or comments from NIOSH or Subcommittee Members?

Member Ziemer: Josie, this is Paul. I'm trying to recall whether we actually took any formal action on the template changes, in terms of sort of -- did we take that to the Board, or do we need to take it to the Board to make sure that we have that information in a timely fashion? Or has it already been -- I mean it looks like it's been implemented. Do we need to formalize that, or has it been?

Chair Beach: You know, I don't know if we need to formalize it with the Board. We do have a list, and it will come up for further discussion on adding more information to the updated list. I know we're going to cover that at the last topic today. I guess Rashaun, is there anything we need to do on that? I think NIOSH is in agreement to give that information to the Subcommittee so --

Member Ziemer: It appears that it's been implemented, right, and I don't know why -- Grady, has that been formalized, or do we need to do anything with that?

(Simultaneous speaking.)

Chair Beach: Oh, go ahead.

Mr. Rutherford: Oh no, I was -- I missed what the question was except what had been formalized. I apologize. There are three things going on here and I missed that. What was the question again?

Member Ziemer: So it has to do with letting the Board and SC&A know when the templates have been modified, so that the --

Mr. Rutherford: Yes.

Member Ziemer: I think we're doing that now. I was just trying to determine whether or not --

Mr. Rutherford: Well, I'll answer that. We are going to inform the Board when the templates are updated. We're also doing some additional work with the templates. We're looking back at the process of how the templates are handled. We're also looking at some of the templates that we have done in the past, and for Sites that have larger number of cases that we feel that should be moved into Technical Basis Documents.

So you will see some of the Sites that are currently templates that are actually going to be moved away from a template into a Technical Basis Document.

Member Ziemer: Okay. Oh thanks. Josie, it sounds like they're doing it and plan to, so it probably doesn't need to have any more formality than that. I just wanted to make sure that it was being done.

Chair Beach: Okay, yeah. It sounds like we're in process and we're working out that system now. So once Lori gets that list to us and Kathy goes through her review today, I think we'll be in -- better placed to discuss it if there's more need. So all right, and so -- okay. I thought you were going to say something, Paul. So the two findings for Case 1, is there any comments on that?

Mr. Rutherford: I will say that we have been working on the responses for those two findings. I think ORAU may be able to discuss them generally, but the official responses, I don't -- have not been completed yet. So Scott Siebert or Wade Morris, do you have any comment?

Mr. Morris: This is Wade Morris. Sorry, for the delay, but no responses at this time.

Mr. Rutherford: Okay. Yeah, we are working on those responses though, and we will have them prepared

and sent to the Subcommittee in the near future, and definitely be prepared to discuss them at the next meeting.

Chair Beach: Okay, and the next meeting, I misspoke when I said mid-summer. We're looking more at the fall, if we're going to be three to four months out. So sorry for that. It's not going to be mid-summer, so any other comments, questions for 052?

Member Valerio: Josie, this is Loretta. If I could have Kathy go to I believe it was Slide 33 that I might have had a question on. I was trying to get back to that. So on Slide 33, this was Case 3, the second bullet. Was that the Operator or was that Other?

(Pause.)

Member Valerio: I thought that category was Other.

Chair Beach: So you're talking about the second bullet, correct Loretta?

Member Valerio: Yes, yes.

Chair Beach: And they selected Operator for that dose. I think there was three, Supervisor, Operator, and you think that should say "Other"? Is that what you're asking?

Member Valerio: Yeah. I thought that Case 3 was a classification of Other. I may be wrong. I'll go back and I'll look that up.

Chair Beach: Did we lose Kathy?

Ms. Behling: No, I'm talking on mute. I'm sorry. You are correct, Loretta. That was an error on my part. I should have made mention of it when I was going through the slide. I had it written down, but I just passed right over that. But no. Case 1 was the Supervisor; Case 2 was the Operator; and Case 3 is Other, and so that was just an error on my part and I should have corrected that or made mention of it. So Loretta is correct.

Member Valerio: Okay. I just wanted to clarify for my notes.

(Simultaneous speaking.)

Member Ziemer: Slide 32. Slide 32 indicated it was Other, and then as Loretta pointed out, 33 showed it as Operator.

Chair Beach: All right, good catch. I passed right over that also. Any, anything else for 52? I believe this will stay in progress; correct?

Member Ziemer: That sounds correct to me.

Ms. Marion-Ross: Josie, this is Lori. I have a question about Finding No. 1. Kathy, you stated that -- I mean the issue here is that, and I went through this real quick so correct me if I'm wrong, but you state that we used the AP DCF instead of the lower isotropic DCF; correct?

Ms. Behling: Yeah. The rework used the AP and that's really not the -- well, the guidance, first of all the guidance states to use the exposure to organ DCF for isotropic exposure, but it doesn't specify whether you use the exposure or ambient isotropic geometry. So it's not clear in the guidance, and then thirdly the rework used the AP, which I really don't have -- it didn't follow the guidance. She didn't follow the guidance, but it was a claimant-favorable decision to use the AP DCF values, and that's typically what we see in dose reconstruction.

So I would just -- it was a little confusing to me as to why the guidance in the template states to use the isotropic. I don't know.

Ms. Marion-Ross: Well that is what you're really wanting a response --

Ms. Behling: Yes, yes.

Ms. Marion-Ross: Because this particular claim, and correct me if I'm wrong, using the more claimant-favorable geometry, still resulted in a POC on the

rework of less than 50; correct?

Ms. Behling: Yes. Correct, yes. So there was no change, and it was claimant-favorable to do that. It's just that the guidance is incomplete and somewhat inconsistent with what is typically done. So we're questioning the guidance. I'm sorry. I should have stated that more clearly.

Chair Beach: All right. Anything else for this subtask?

(No response.)

Chair Beach: All right. So we're in progress. We'll await for NIOSH's answer on those two findings, and are we ready to move on? Looks like Kathy's got it up. Kathy, you're presenting all three of these day aren't you?

Ms. Behling: Yes, uh-huh.

Chair Beach: Okay. If you need a break sometime, let us know. Otherwise --

DCAS-PER-059, Subtask 4 Norton Company Case Review

Ms. Behling: Okay. Well, if you need a break from me, let me know. I hope you'll follow this, so all right. All right. We're going to move on to PER-059, and again this is Subtask 4, it's the case review.

For PER-059, this has to do with Norton, which is also has no Site Profile and it's a template, a DR Methods template, and for this particular PER, we reviewed one case. A little summary of the Norton facility. They worked with thorium and uranium, and their operational period was 1945 through 1957. The residual period started in '58 through October of 2009. As I mentioned, there's no Technical Basis Document for this facility, but there is a template.

We reviewed PER-059. PER-059 actually was issued in -- I should start there -- in April of 2015, and the revisions included adding a second SEC Class to the residual period, and incorporating the OTIB-70

Revision 1 into the guidance, which lowered the depletion rate during the residual period.

SC&A issued its review of PER-059 in May of 2017, and since the Norton template had not been previously reviewed, an evaluation of the dose reconstruction methodology was included in our review of PER-059. That's under our Subtask 2. SC&A identified three findings during that review.

Finding 1, there was a lack of available data to duplicate external deep and shallow doses in the residual period. Finding 2, the air survey data includes five of nine references identified as operational data, but they actually had a data that coincided with the residual period. Number three, SC&A calculated air concentration and intake values for uranium that were a factor of two lower than those listed in the template. The Subcommittee did discuss all these findings and closed them at the October 31st, 2018 meeting.

So for a case review, one case was selected that had external and internal dose assigned during the residual period, and SC&A submitted its review of the reworked case in December of 2021. And again, NIOSH's rework looked at applicable DR tools, recalculates all annual doses and reruns IREP.

This case after the rework, it was not sent to the Department of Labor because the compensation decision did not change.

A little bit about the case itself, the background. The EE worked at the Norton Company for multiple brief time periods during the residual period. There was no monitoring provided and the EE was diagnosed with a qualifying cancer approximately 25 years after the termination of employment.

We did a comparison of the original and reworked doses, and interestingly enough, the total internal and external dose for the original case was less than 1 millirem, and for the reworked case it was a total of -- it was a modest dose assigned to both internal

and external.

Okay. So for more details, the original external dose calculations used guidance in 2010 template, and as a claimant-favorable approach no prorating was supplied for the partial years of employment. A DCF of 1 was used, and the external dose resulted in less than 1 millirem.

For the reworked, the template that was used was 2011 template. That was the reason for the PER, and again there was no prorating done for partial years of employment. The DCF value of 1.44 from IG-001 was used, and that's associated with the thyroid as a surrogate organ, and this resulted in a total external dose of approximately 30 millirem.

SC&A concluded that the appropriate doses were based on the 2011 template, and the selection of the surrogate organ was in accordance with OTIB-0005, Revision 5. Appropriate DCF values were used. We agree that the no prorating was appropriate, was an efficiency measure and also claimant-favorable, and that doses were accurately entered into IREP.

The rework doses increased as expected, and SC&A had no findings with the calculation of external dose.

For the internal dose, in the original DR inhalation and ingestion intakes were taken from the 2011 template. They compared uranium-234, solubility Types M and S with thorium-232 absorption Types M and S, and thorium-232 Type M resulted in the highest dose. They calculated a total dose again of less than 1 millirem.

For the reworked internal, inhalation and ingestion intakes were taken from the 2011 template. They assumed a mixture of uranium-234, thorium-232, thorium-228, actinium-228, radium-228, radium-224 and thoron. They compared, compared M and S type solubility with M being the more claimant-favorable, and resulted in a total dose of less than 20 millirem.

Finally, SC&A's conclusion on internal dose, we reviewed the CADW files and confirmed that intakes that were used were based on data in the updated template, and we also agreed with all of NIOSH's assumptions regarding entering the data into IMBA and IREP, and we had no findings associated with the internal doses in the reworked case. That was a pretty simple one so --

Chair Beach: Yeah, and you mentioned the updated template. Is that the 2011 or I might have missed that?

Ms. Behling: Yes, yes.

Chair Beach: Okay.

Ms. Behling: 2011 was the updated template, uh-huh.

Chair Beach: Okay, thank you. Paul, Loretta, questions, comments?

Member Ziemer: Yeah, this is Paul. I have no comments. I'm good on this one.

Chair Beach: Okay.

Member Valerio: I have no comments or question, Josie.

Chair Beach: Okay, great. Yeah, that was relatively easy and I think we can go ahead and vote to close. All in agreement?

Member Ziemer: I agree.

Member Valerio: I agree.

Chair Beach: Okay, thank you. Kathy, that was easy and it looks like you're already set for the next one.

DCAS-PER-062, Subtask 4 ORAUT-OTIB-0052
Parameters to Consider When Processing Claims for Construction Trade Workers Case Review

Ms. Behling: Yes, okay. This is our case review of

PER-062. We reviewed one case and this PER was prompted due to revisions in OTIB-0052. Now OTIB-0052 is parameters to consider when processing claims for construction trade workers. There is a long history associated with this OTIB, and I will make mention.

This is one of the OTIBs that has so many PER -- has several PERs and was one of the OTIBs that I was hoping that we could discuss with the full Board. When I started going through the transcripts and putting together all of the data, I realized and we'll get to that as I go through here, but there were some unanswered questions that I should walk through this.

But OTIB-0052 was issued in August of 2006, and SC&A reviewed Rev 0 in July of 2007 and we identified 16 findings as a result of that review. Rev 0, PC 1 was issued in January of 2007, and then PER-014 was issued in November of 2007 to evaluate cases adjudicated prior to the issuance of OTIB-0052. Rev. 1 of OTIB-0052 was issued in February of 2011, and SC&A reviewed Rev. 1 to determine how many of the original 16 findings were resolved with the issuance of Rev. 1.

SC&A also reviewed PER-014 in March of 2012, and then NIOSH issued Rev. 2 of OTIB-0052 in July of 2014. We'll all note that the 16 findings were ultimately closed by the Subcommittee at meetings in 2008 and 2012, and the OTIB-0052 review was presented to the full Board in March, it was a March 12th, 2013 meeting.

But as a result of that presentation, the Board had numerous questions and to the best of my knowledge those questions haven't been answered yet. And so this is one of the things that somehow, a little bit gets -- it goes through the cracks, and it will be something that I'm going to bring to the Board maybe -- I don't know if I should commit to the next meeting or not, but to the Subcommittee, to your Subcommittee, to try to go through the history of all of this and to pull

out where the Board had questions and what hasn't been answered yet.

Lori and I have both been working on this sort of together, trying to make some sense out of it. But that's going to have to be a separate presentation with OTIB-0052, with some of these PERs, the PER-014, and there's an OTIB, OTIB-0014 or one of the others; I'm not remembering the number right now, that also intertwines in all of this.

So we will have to schedule that for one of the Subcommittee meetings to try to work through all of this history of OTIB-0052 and where we stand to date. Okay. So finally PER --

Chair Beach: Let me ask you just for my notes. So OTIB-0014, PER-014, was there other ones that needed to be looked at, the PC-1?

Ms. Behling: Yeah. I can put that together for you. I have it somewhere in this mass of documents on my desk to go back to. I've been trying to present things to the Subcommittee that are recent and relevant and like I said, when we started to decide that we were going to use this matrix approach to discuss these with the full Board and I started going through transcripts, I realized that this OTIB-0052 is just very complex and convoluted.

But I can put together for you all of the documents that would be associated with that, and then perhaps I can make one presentation to the Subcommittee that discusses how all of those documents are intertwined. I don't have all the documents with me.

Chair Beach: That would be fine.

Ms. Behling: But I'll give that to you after the meeting, if that's okay.

Chair Beach: Okay, great. Thank you.

Ms. Behling: Okay, yeah. I don't mean, didn't mean to do an aside there, but I think that's something that

I've been thinking about and wanting to talk to the Subcommittee about for a long time, and so I'm using this as that opportunity.

Okay, so finally PER-062 was issued in November of 2017, and it assessed changes introduced into both Revision 1 and Revision 2 of OTIB-0052. OTIB-0052, as you know, developed a correction factor that increases external dose to unmonitored construction trade workers when co-exposure data is used to assign dose.

To determine the population of cases impacted by PER-062, NIOSH evaluated 20 different Sites were there were -- there was already a co-exposure model developed, and from that list of 20 Sites there were only eight Sites that didn't, didn't already have a PER in progress or forthcoming, and therefore only the eight Sites were included in this PER.

For PER-062, there were a total of 1,006 cases that were identified initially for reevaluation. One of the cases resulted in a POC of greater than 52 percent, one case, I think the POC was between 45 and 50 percent, 992 cases were less than 45 percent POC, and 12 cases had been returned to DOL prior to the issuance of PER-062.

So SC&A issued its review of PER-062 in May of 2008, and we identified two observations. Observation 1, for the list of 20 Sites, one of the Sites that was listed was Albany Research Center, which we could not -- it didn't look to us that there was a PER forthcoming or a coworker, a co-exposure model developed for that Site. So that's why we identified that as an observation. We couldn't confirm that.

Observation 2, to ensure that OTIB-0052 is applied to all cases at the 20 Sites, SC&A's suggestion is that we should maintain a list of these Sites. We should be informed when the PER is issued, and we should review that PER to ensure that all the reworked cases are adequately captured, or captures all potential construction trade workers. These observations were discussed and closed at the February 13th, 2019

Subcommittee meeting.

So for SC&A's review of an impacted case, the Board selected the one reworked case with a POC between 45 and 50 percent, and SC&A submitted its review in December 2021. We assessed the times at 10,000 iterations because it was a best estimate case that was between 45 and 50 percent.

The combined POC did increase 19 percent; however, the revised DR was not sent to the DOL because the compensation decision did not change. Okay. In a brief background for this case, the EE worked at Nevada Test Site for 20 years and also worked at one additional location or site. The EE's job title was classified in the EE as a construction trade worker. The EE was periodically monitored and diagnosed with two qualifying cancers approximately 30 years after termination of employment.

Again, as our table of the two -- of the comparison of the reworked and the original doses for the two diagnosed cancers, only external dose changed. It increased for Case 1 and decreased for -- for Cancer 1 and decreased for the second diagnosed cancer.

Okay. The external dose components for this case include recorded photon, missed photon, unmonitored photon and unmonitored electron dose. So for the original recorded photon dose calculations, they were based on guidance in Nevada Test Site Technical Basis Document. A film badge correction factor of 1.25 was applied, and an uncertainty factor of 1.3 was applied for -- to the second cancer site.

Photon energies were distributed as 25 percent 30 to 250 keV, and 75 percent greater than 250 keV. The liver was selected as the surrogate organ and the applicable IG-001 DCFs for the 30 to 250 keV photons for Cancer 2. But for the original, they used a claimant-favorable DCF of 1 for greater than 250 keV. So it's no real explanation for that, and this resulted in a total recorded dose to both cancer sites of approximately 6 rem.

For the reworked recorded photon dose, the assigned external dose used Rev. 3 of the NTS TBD. They also applied the film badge correction factor of 1.25, and the uncertainty factor of 1.3 to Cancer 2, and used the same energy distribution. Also used the same surrogate organ for this Cancer No. 2, and applied the DCFs using guidance in OTIB-0017 for Cancer 1 and the IG-001 DCFs for Cancer 2.

For Cancer 2, they applied the range of the DCF values using Monte Carlo methods that are cited in the IG-001, and the total Cancer 1 dose was approximately 5 rem and total Cancer 2 dose approximately 4 rem. And SC&A confirmed that there were three years of positive recorded doses, and we verified that the reworked used the appropriate energy fractions cited in the TBD, and applied the TBD-specified biases in the uncertainty.

Correct DCF values were used. Doses were entered appropriately into IREP, and just noted or made note that the reworked Cancer 2 doses decreased because the original applied a DCF for the greater than 250 keV photon component of 1, as opposed to the value that was cited in IG-001. So we have no findings with the reported, the assignment of the recorded photon dose.

Okay, missed photon dose. For the original, they calculated missed dose for two years with zero badge readings. They also calculated missed dose for partial years of employment when the EE was not monitored. They assumed, they counted 13 zero badge exchanges, and using one-half of an LOD of 40 they calculated their dose.

A film badge correction factor of 1.25 was applied, and again the energy fractions of 25-75 for the two photon energy ranges, and they applied the same DCF as the recorded dose, which again they used the DCFs from IG-001 for the 30 to 250, but they used 1 for greater than 250 keV photons. This resulted in a total missed dose of approximately 300 millirem.

For the reworked missed photon dose, here NIOSH

counted 16 zero readings for years of employment, and they also counted and based on the NTS TBD, they counted an additional 15 missed doses monthly exchanges during years when the unmonitored dose was assigned. Doses were calculated again using one-half the LOD value of 40 millirem. Again, they applied all the correction factors, and also used 100 percent 30 to 25 keVs for Cancer 1, and they did the 25-75 percent split for Cancer 2 and DCF values for OTIB-17 and IG-001 were applied.

And this resulted in a dose for Cancer 1 of approximately 700 millirems, and for Cancer 2 500 millirems. SC&A did confirm that the 16 badge exchanges were recorded as zeros, and based on the TBD prior to 1957, a monthly missed dose should be assigned for years when unmonitored dose is assessed. So they were correct in having those additional 15 zeros.

The rework applied all the appropriate TBDs, specified dosimeter biases, and we verified that the correct AP exposure to organ DCFs were used, and the doses were accurately entered into IREP. As I made mention, the reworked doses increased because they counted 31 zeros rather than 13 in the original, original dose reconstruction. So SC&A has no findings with the recalculation of the missed external dose.

Okay. On to unmonitored photon dose. For the original, they assigned unmonitored photon dose for one year of employment, and that was based on a 50th percentile co-exposure dose. Again, applied the film badge correction factor of 1.25 and the uncertainty for Cancer No. 2. Split the photon energies 25 and 75 percent, as specified in the TBD, and applied the same DCF values as with the previous doses where they used the 1, the DCF of 1 for the greater than 250 as opposed to the IG-001 value. This resulted in a modest dose assignment.

For the rework, since the EE was not monitored before universal badging was implemented,

unmonitored dose was assigned during prior years of employment. Doses were based on 50 percent, percentile of the co-exposure values. All of the NTS correction factors and uncertainty were appropriately applied, and there was also a -- obviously this is a construction trade worker, so in accordance with OTIB-0052, a correction factor of 1.4 was applied.

Photon energy fractions, again 25-75 percent, and DCF values were based on IG-001. This resulted in a total unmonitored photon dose of approximately 100 millirem. Okay. SC&A verified that all the TBD guidance was followed appropriately. All of the TBD specified bias and uncertainty values were applied, and they selected the -- they used the appropriate correction factor from OTIB-0052 to calculate the unmonitored photon dose.

Appropriate DCFs were used and annual doses were correctly entered into IREP. The reworked doses increased due to the number of years of unmonitored dose that was assigned, and SC&A had no findings with the assignment of unmonitored photon dose.

Okay. Now unmonitored electron dose. The original DR electron dose was not recorded at NTS prior to 1966. Therefore, unmonitored electron dose was assigned prior to '66 when photon dose was assigned.

Electron dose was calculated based on a photon to electron ratio of 1. Due to the cancer location, they also applied a closing attenuation factor of .0855 in accordance with OTIB-17, and the total dose resulted in about approximately 4 rem. These doses were entered into IREP as greater 15 keV electrons as a constant.

The reworked unmonitored electron dose was calculated for prior to 1966, when the EE was monitored for photon dose, and when photon co-exposure dose was assigned. So doses were based on a photon to electron ratio of 1.04 to 1. They also applied a closing attenuation factor of 0.855, and the total dose resulted in approximately 4.5 rem.

Again, as with the original, this was entered as a greater than 15 keV electrons, but the difference here is they entered that as a lognormal distribution with a GSD of 2.14. SC&A evaluated the unmonitored electron doses and the rework followed the TBD guidance, and they applied the appropriate photon to electron ratios.

We agree with the application of the attenuation factor, and doses were correctly entered into IREP, and the reworked electron doses increased due to the number of years of unmonitored dose assigned, and we have no findings with the assignment of electron dose.

Okay, and just in summary, here are the four dose categories and the result of the reworked cases, a comparison of the original and the reworked, doses decreased due to the DCF issues used between the original and the reworked for the recorded dose. For the missed dose, the doses increased because of the number of zeros assumed. For the unmonitored dose, the doses increased because of assigning dose for the years for -- prior to universal badging.

The electron dose increased because of the assigning of prior to 1966 plus co-exposure doses were assigned during years when there was co-exposure monitoring, or co-exposure assignment of dose. It was also assigned for electrons. Okay. That is the review of PER-062, Subtask 4. You have any questions?

Chair Beach: Okay. Questions anyone, comments? Paul, Loretta?

Member Valerio: None here Josie.

Member Ziemer: Well, yeah. As far as the rework's concerned, and that looks fine. I don't think that will be affected by the other issues that you have on the documents, right?

Chair Beach: Yeah. That was --

(Simultaneous speaking.)

Member Ziemer: That's separate from the rework in a way.

Chair Beach: Yeah.

Member Ziemer: But do you anticipate that that, there would be any impact on the reworked doses here?

Ms. Behling: No, I don't.

Member Ziemer: Yeah, I was just a matter of (audio interference) I get some of that stuff, yeah.

Ms. Behling: Right. The only thing that I'm concerned about is that that -- years ago, Wanda presented our review of OTIB-0052 to the full Board, and during that presentation there were numerous questions, and questions that I believe they were asking NIOSH to give answers to. I'm not sure we ever went back to revisit those questions and bring, you know, have NIOSH perhaps answer those.

So it's been so many years ago, and I think it's between -- we're going to have to do a refresher for all of us, SC&A, NIOSH and the Subcommittee, and see if we can perhaps get answers to some of those questions, and then take the entire package back to the full Board. That would be my suggestion.

Member Ziemer: Yeah, I'm in agreement with that. I'm just thinking in the back of my mind when we do that, let's keep sort of in the back of our minds will any of this impact on the reworks that have been done.

Ms. Behling: It depends on the questions that were asked by the Board.

Member Ziemer: No, right, exactly.

Ms. Behling: And NIOSH, yeah, is going to have to make any changes or feels that they will have to make any changes to OTIB-0052. If that's the case -

-

Member Ziemer: Yeah, and I guess -- and that will drive the final action, yeah exactly.

Ms. Behling: That will prompt another PER, but this PER satisfies, and our review of this PER satisfies the Revision 1 and 2 of OTIB-0052. So I think we're good. If there is changes that increase the dose, NIOSH will issue a PER.

Member Ziemer: Right, good. Thank you.

Chair Beach: Okay. So for Subtask 4 for PER-062, that is complete. There's no findings, and we can close that; correct?

Ms. Behling: Correct.

Chair Beach: Okay. So let's do that. Is everybody in agreement with closing PER-062, Subtask 4?

Member Ziemer: Yeah, I agree to close.

Chair Beach: Okay, and Loretta?

(Pause.)

Member Ziemer: She may be on mute.

(Pause.)

Chair Beach: Loretta, are you on mute or maybe stepped away for the moment?

Member Valerio: No, the call dropped and I had to call right back in.

Chair Beach: Oh darn it. Okay. So you're agree to close?

Member Valerio: Yes.

Chair Beach: Okay. So let's go back to the discussion on 052 on how to track that. I went back and looked through the documents to present to the Board, and I don't see that listed at all Kathy. There may be a

tasking, because I know you and Lori have talked about it and it would be a tasking to SC&A to go back and review the transcript from 2013, and to flush out all the questions.

Ms. Behling: Yes, and I've already started to do that.

Chair Beach: Okay.

Ms. Behling: Let me see here. I'm trying to look down my list of completed reviews, and see if -- why that is not -- that should have been online.

Chair Beach: Yeah. I briefly looked through and I didn't see it though, while you were presenting.

Ms. Behling: Oh yes, and I think the reason it didn't get on that list, and in fact when we go into this, let's see. OTIB-0014 is the very first one on our approved list, and that's the one that should be discussed also as part, under OTIB-0052. When --

Chair Beach: Yeah. I do see that in my notes now, yep.

Ms. Behling: Yeah, and the reason OTIB-0052 didn't make it onto this list is because initially I had a separate list of those documents that were already presented to the Board, and OTIB-0052 was on that list. But it wasn't until I started looking through the transcripts that I realize that's got to be put back onto the approved documents, but we're not there yet.

And so that's why it doesn't, it's not listed under the approved documents, because --

Chair Beach: Yeah. Under my February, I have three of them. But under February, I do have that in on the notes.

Ms. Behling: Yeah.

Chair Beach: So it everybody on the Subcommittee in agreement with going back through, with that tasking? It sounds like you've already started, but

with the tasking to continue looking at the transcript and fleshing out those questions for 052?

Member Ziemer: (Audio interference).

Chair Beach: Okay.

Dr. Taulbee: This is Tim. Can I ask a question here?

Chair Beach: Of course. Go ahead, Tim.

Dr. Taulbee: Okay. Kathy, when you indicated that this was reviewed by the Board, did you say that it was a March 12th, 2013 meeting? Is that correct?

Ms. Behling: Let me see. I believe so.

Dr. Taulbee: Okay.

Ms. Behling: Yes.

Dr. Taulbee: I'm just asking, because I think we have a -- have a revision out after that of OTIB-0052, after that presentation.

Ms. Behling: Okay, okay.

Chair Beach: When did that come out Tim? Do you have a date?

Dr. Taulbee: I am looking that up as we are speaking here. I want to say it's 2014.

Ms. Behling: It is July. It's July 2014. That was Revision 2.

Dr. Taulbee: Okay. So what I'm getting at, some of Revision 2 might have incorporated those comments and questions from the Board.

Ms. Behling: You're correct. I don't know the answer to that, and I'm glad you pointed that out because yes. Wanda presented to the full Board March 12th, 2013, and then you had Revision 2 in July 2014. So I am going to have to -- I've already started putting all of this together. But I will go in and see if Rev. 2 answered some of those questions. So thank you for

pointing that out.

Dr. Taulbee: Okay. All right, thank you.

Chair Beach: And in closing, we need to address those anyway, and then if some of them aren't answered, we need to point those out as well. So I think it's a good, it's good to go ahead and continue on with that Kathy, and verified. We do --

Ms. Behling: Okay.

Chair Beach: Have we been, have you been tasked to review Rev. 2 of 052?

Ms. Behling: I believe we did, but I -- we reviewed PER-062, which was the result of Rev. 1 and Rev. 2, and in our Subtask 2 of that, we should have looked at Rev. 2. So I believe we have reviewed Rev. 2. I will verify that again, but that should be done as part of our PER review.

If we haven't reviewed all of the most current documents or if there's a White Paper or something else out there that hasn't been reviewed, we do that as part of the PER.

Chair Beach: Okay. I just want to make sure you're tasked and there's no issues there. So for this, you will send out a list of other documents that are in addition to this 052 that need to be verified that we're current on?

Ms. Behling: Yes. Perhaps at the next meeting I can pull together all of these documents, and we can have a discussion on them. Because OTIB-0052 is just something in the back of my mind all the time, but I know we're going to have to discuss. So perhaps I can get that together for the next meeting.

Chair Beach: Okay, that would be great, and then you'll continue reviewing the questions and what was answered or not answered, and have a better idea by the next meeting?

Ms. Behling: Correct.

Chair Beach: Okay, that sounds good. Any problems with that Rashaun?

Dr. Roberts: No, I don't see any.

Chair Beach: Okay, thank you. How about a comfort break, unless people don't need one and want to just carry forward?

Member Ziemer: How much more time do you think we'll need here?

Chair Beach: Let's see. Kathy, what do you look -- what do you think, another 30 minutes or so?

Ms. Behling: Yeah. Maybe that, yes. Not very much more to discuss.

Chair Beach: Okay. If everybody's good with just moving forward, I'm okay with that. But I want to, you know, if people need a comfort break, give you that option.

Member Ziemer: I'm thinking of maybe 15 minutes, 10 or 15 minutes would be good.

Chair Beach: Okay. That's what I was thinking also. So let's go ahead and stay connected, but come back at one o'clock. That's ten minutes. Is that enough?

Member Ziemer: Yes.

Member Valerio: Yeah.

Chair Beach: Okay, thank you. Let's do that.

(Whereupon, the above-entitled matter went off the record at 12:50 p.m. and resumed at 1:01 p.m.)

Chair Beach: All right. So we are on to Document Tracking, and Kathy I see you have that posted.

Ms. Behling: Yes. If you would like me to discuss this briefly, I'm ready.

Chair Beach: Yes, please do. Go for it.

Ms. Behling: Okay, all right. Typically at the end of every meeting, I have been, as you see here, updating, putting in details that we will -- from the previous meeting, and keeping this as a live document so that ultimately when we get the BRS back or something equivalent, we'll be able to import this information and not lose anything.

The only thing that I have added to this one, last time at the last meeting, Paul mentioned that it would be nice to see total number of findings, and it wasn't -- I didn't find a convenient way of putting it into the detailed matrix. So I did something which is akin to what they -- what we already do in the BRS when we generate a report.

I created this matrix summary on this table up front that lists all of the documents that we've been tracking since we lost the BRS. It provides total number of findings, total number of observations, and what the status of those findings are.

Then if there's things that are still in progress they -- everything is listed in the detailed section. So I just wanted to make mention of that new addition to the BRS tracking matrix.

Chair Beach: Yeah. I thought that looked good, and I appreciated the way you did the summary, so I think it's great myself.

Ms. Behling: Does anyone feel we need to add anything or make any corrections to this?

Member Ziemer: It's very helpful, very helpful. Thank you.

Ms. Behling: Okay, great. So I don't know that that we need to go through all of this, but as I said, anything that was discussed during the previous February meeting did get added into the detail section, Table 2 of this temporary BRS tracking matrix.

Chair Beach: Yeah, and I think that's just an addition that we need to make to each Subcommittee meeting where -- and we can, I mean I went through it, right. I didn't see anything that I had questions on, and it's a -- it's a very useful tool to keep us on track, or at least remember where we're at and what we've done. Loretta, anything --

(Simultaneous speaking.)

Chair Beach: Oh, go ahead.

Ms. Behling: No, I'm sorry. The other thing that I know maybe years ago, you had made mention of that sometimes when you go back into the BRS, there's not sufficient details, and sometimes we have some questions as to what really happened or how things got closed out.

So I'm trying to be a little bit more detail oriented here and provide a fair amount of information, and also attach documents, relevant documents to this matrix so that we have a clear understanding of what happened when we go back into the BRS to update it.

Chair Beach: Yeah, and I appreciate that. I know we'll want to go through the BRS or what form we get back possibly in the future, but for now this is -- this is perfect.

Member Ziemer: Right, right.

Chair Beach: And helpful. All right. With nothing, if you just keep tracking, that would be great Kathy.

Ms. Behling: Okay, will do.

Preparation for August 2022 Full ABRWH Meeting

Chair Beach: And then the next one would be preparations for the next Board meeting. I guess while you're getting that document up, Rashaun do you know what kind of timeframe we're going to have? I don't -- I'm not sure. You probably haven't even started working on the agenda for the next

meeting. But can we still have what's an hour, hour and a half?

Dr. Roberts: Sure. I mean it's really whatever the committee thinks is appropriate, and I can carve out the time you need.

Chair Beach: Okay. Okay, great. I don't know how the other Subcommittee Members feel. I know the last meeting was -- it was a long, a lot of documents. I think what did we do, seven Kathy and --

Ms. Behling: Yes.

Chair Beach: There was some talk that you thought that might have been too long. What do other Subcommittee Members feel?

Dr. Roberts: Well, I just want to make -- it didn't matter to me. I know that Dr. Kotelchuck said that he thought it was a little bit like --. But I'll do whatever the Subcommittee requests.

Member Ziemer: Well you know for -- this is Paul. I think for us it's easier, because we've been through it all and we knew, we knew the issues before we got there. But for the Board Member, when it hits them cold like that, even though they have the -- may have had the documents in advance, it's a lot of information to absorb.

So you know, I don't know if we need to abbreviate it a little more or what. Maybe there's too much detail for them, I don't know.

Chair Beach: It's definitely a fine balance with trying to work through some of our documents and not over-presenting. So I think we need to --

(Simultaneous speaking.)

Chair Beach: Go ahead.

Ms. Behling: In fact, I believe that I did, I believe I did ask that question during the full Board meeting, and at least Dr. Kotelchuck indicated that no, he

appreciated the level of detail. It's just that the number of documents were a little bit much.

Member Ziemer: Yeah. Maybe we could maybe hold it to an hour instead of an hour and half or something like that. I don't know. You gauge it as you go.

Chair Beach: Yeah, yeah. Okay.

Member Ziemer: And maybe after you get there, you can see what you have and see what the timing will require.

Chair Beach: Correct.

Member Ziemer: As you prepare it I mean, Kathy. I don't know.

Chair Beach: Right.

Member Ziemer: Maybe between you and Josie, you can kind of figure what are you going to need to sort of limit it maybe.

Chair Beach: Yeah. I always push for a little more, so you'll have to hold me back, Kathy. I think Kathy is recommending --

Member Ziemer: No, no, I understand that. I think we do want to have enough detail so the Board understands the issues. But we don't want to lose them along the way because there's too much.

Chair Beach: Right, agreed.

Ms. Behling: Then I guess what I have up on the screen right now, the last four digits, the four documents that are listed there on page two of our approved document list, starting with PER-049, OTIB-0006, PER-008 and PER or OTIB-0023. Those are the four that I was going to suggest that we may want to present to the next full Board meeting.

What I'll tell you, what I'm finding is PERs take a little bit more effort, just because there's a two-step process typically. In some cases, we just have a

Subtask 4, but it still requires an explanation of the PER and why we only did the Subtask 4, and because we had previously looked at that specific document.

I also seem to spend a little bit more time with documents that we had no findings, because I wanted the full Board to have a better understanding of this is the process that NIOSH uses and go through all of that, and say we didn't find any problem with their approach or their assumptions and that type of thing.

So in these four documents, there's two PERs. The first one has no findings, and like I said the PERs do take a little bit more time, and the other two OTIBs have some significant findings, seven and eight findings. So it seems to me that perhaps those four would be adequate, but if you'd like, I see the next one on the list has one finding. That would be rather simple to go through.

As I start to prepare for these, if I'm understanding the Subcommittee correctly, if I feel that I can fit all of those like five in in an hour, that that would be adequate. So is that how you want me to approach this?

Chair Beach: Yeah. An hour to an hour and 15 minutes maybe for questions. But yeah, I would prefer to try to add an additional one Kathy, if you --

Ms. Behling: Okay.

Chair Beach: I guess as you're presenting 87 slides, I mean is there a maximum we should try to go for? I think you did seven last time, so if we hit, try to go for five and see where we're at --

Ms. Behling: Okay.

Chair Beach: And we can again find out the comfort level of the Board.

Ms. Behling: Yes, I think that's a good approach.

Okay, all right. So we are -- you're suggesting that we do PER-049, OTIB-0006, PER-008, OTIB-0023 and PER-006 if we have the time?

Chair Beach: Yes. Yeah, I think we should go with those five, and then as you're developing your slides and it gets closer to the agenda, I think you can work with or let Rashaun know what kind of timing we're going to need, the hour or the hour-30.

Ms. Behling: Okay, okay. Very good. Chair Beach: Okay and any other comments on that item? Okay. So the next one is the Newly-Issued Documents and Supplemental Topics. Kathy.

Newly-Issued Guidance Documents and Supplemental Topics

Ms. Behling: Yeah. To the best of my knowledge, I don't think there's been any new guidance documents listed or published, that we haven't been tasked to do. We are working on some other OTIBs yet, but what I did want to share with you, and as I discussed before, this what I have on the screen right now is the list of facilities that have DR methodologies embedded in dose reconstruction reports or what we call templates.

I did agree, I went down through this list, and any of them that you see with an asterisk behind them like Carborundum. Let's see what else we have here. Metals and Controls, Peek Street, Norton, those are all that we just discussed today. Those are all templates that we have already discussed.

Chair Beach: Kathy, this is Josie. You've got an echo going on, and I don't know if that's going to be bad. I don't know. If people aren't muted, because you didn't have that before. So I don't know what's changed.

Ms. Behling: Okay.

Chair Beach: Okay. Very good.

Ms. Behling: Okay, all right great. All right. If you'd like me to start over, I'm just showing you the list of facilities, Sites that have templates. I've gone through this list, and what I've asked Lori for is we, we need to know -- I don't know that, I haven't really seen that you put a version number on these that you know 2016 is Version 5 or something like that.

But what I'd like to know is what the current version is and if she can tell me, at least what the date is of the current version, because in some of these, in some instances we have looked at these templates, but we want to be sure that it's the most current version also. So I did indicate that at the bottom here, that anything with an asterisk we have previously reviewed.

Typically, they've been reviewed as part of the PER. Now I also, I didn't mark this on here, but I have to assume that this Westinghouse New Jersey, SC&A reviewed the ER for that SEC. So I have to assume that we could probably mark this off of our list, that we've already looked at this DR methodology too.

But and as I went through this, I realized there was a lot, a lot of these facilities that sounded familiar to me. I know that with the BWXT, there was a PER-056 that was issued, and associated with that Site. I guess for some reason, the Subcommittee had asked us to do a focused review and say does this need to be looked at. At the time, we based that decision probably on number of cases that were looked at.

I'm not sure why some of these were not because -- because we didn't review PER-056, we didn't look at the DR methodology for that particular Site. So I'm suggesting that we do. We don't necessarily have to go back and do PER-056, but I think we need to look at the DR methodology, or I would think that the Subcommittee would want us to look at the DR methodology for all of these.

There are some cases, there's some facilities where we have been assigned a case review for that facility. Now that case review is just looking to see did NIOSH

follow what that review, what that guidance told them to do. So it wouldn't necessarily be something that we would have analyzed the dose reconstruction methodology. We would just say did NIOSH appropriately follow that methodology.

So even though we may have done a case review, I'm not sure that qualifies as -- to say that we've looked at the DR methodology, because that wasn't part of the tasking. So I just wanted to give you this list. I don't know if it's appropriate at this time to -- because we don't necessarily have to know what the most recent version is.

If we were tasked to look at some of these, some of this methodology, NIOSH could just provide us with the most recent template.

Chair Beach: Okay. Subcommittee Members, Loretta, Paul, what are your thoughts?

Member Ziemer: Well, this is Ziemer. I for one would like to have it spelled out what, what has been reviewed and what hasn't. Could we get a copy of this list as well from you?

Ms. Behling: Yes, I --

Member Ziemer: Distribute it to the committee here.

Ms. Behling: I apologize. I did put it in the materials. I put it yesterday, I believe, and I didn't --

Member Ziemer: Oh, I guess I --

Ms. Behling: So it's in, on the virtual volume I put a copy of this, and this is just a very informal list --

Member Ziemer: Okay.

Ms. Behling: --that I put together.

Member Ziemer: Okay.

Chair Beach: So this is the list that we had before?

Ms. Behling: This is the list that Lori provided me of

the facilities that have templates, and I still don't know what the most current version is and what the dates of those are, but that doesn't preclude us from reviewing some that haven't been looked at yet.

I know, as I said, for sure we have not looked at -- or we have looked at Carborundum, Metals and Controls, Norton, Peek Street, Westinghouse Nuclear Fuels. That was one of ours that we talked about today, and W.R. Grace. We've looked at those facilities.

Chair Beach: Kathy, can you send us a list of the ones that you have not looked at that you feel that you should look at the PR methodology, and that way we have an idea of what you have moving forward. I know you mentioned BWXT, but and then --

Ms. Behling: That clearly. Yes, and okay. I can do that.

Mr. Rutherford: Kathy, Josie, could I offer something up real quick? This is LaVon.

Chair Beach: Yes. Go ahead, LaVon.

Mr. Rutherford: BWXT is going under a major revision at this time. I think it would be a good idea for you guys to look at that after we get done with that one. I mean it's changing.

Chair Beach: Okay. That's good to know. In fact, if NIOSH can provide me with -- can you tell me if any of these on the list are undergoing changes, that's something that the Subcommittee should know, and I can put that on my list so we don't look at that prematurely.

Mr. Rutherford: I think we can do that.

(Simultaneous speaking.)

Member Ziemer: This is Paul again.

Chair Beach: Go ahead.

Member Ziemer: Go ahead, go ahead.

(Simultaneous speaking.)

Chair Beach: Lori said that she would have that list out within the next, what did you say two to three weeks Lori?

Ms. Marion-Ross: Correct.

Chair Beach: And if you could add to it the last comment about what's going under major revision or what's going to be revised. If you could add that, and then possibly once SC&A has that list, then the Subcommittee -- and there's some you feel you could start on, Kathy, we could do a tasking via email I believe; is that correct Rashaun?

Dr. Roberts: Yeah. That should be fine.

Chair Beach: It feel like we should have more information before we start. Paul, what were you saying?

Member Ziemer: Well, yeah. My question was or sort of comment, I want to make sure that these don't supersede some other priority tasking that's underway on that regular review thing. So I guess we need to take a look first at what's there and what needs to be done. Is there anything on these that is high priority right now? That's --

(Simultaneous speaking.)

Ms. Behling: This is Kathy. The reason that I decided to discuss this under the Newly-Issued Guidance Documents and Supplemental Topics is because we -- there right now, NIOSH has not, that I'm aware of anyway, has not issued any new documents that I would suggest to the Subcommittee that we may want to look at. So this list, these are -- this is DR methodologies that is like a small, it's like a TBD, that they haven't been looked at yet.

So it's not that there's any pressing issue, but they've been --

Member Ziemer: Oh okay.

Ms. Behling: And there's nothing else in the back -- waiting in the background. So we can start working on these as far as, you know, I'm concerned because there's nothing else.

Member Ziemer: Okay. Yeah, okay. I just wanted to make sure, because I wasn't -- I wasn't aware of what all the other Work Groups might be having you work on, so thank you.

Ms. Behling: Right.

Dr. Taulbee: If I could just -- this is Tim. If I could interject.

Chair Beach: Okay.

Dr. Taulbee: There is a document out there that I'm not sure that SC&A has reviewed, that I believe would fall best under the Subcommittee, and that's Report 87. This is Applications for Regression of External Dose Reconstruction, and most importantly what this covered is the quantile regression methodology, which is actually impacting a couple of Sites. That would be the Nevada Test Site in the gaseous diffusion plants.

I've used this approach, and it appears that this is kind of -- it's a global document that we use. It's a report, it's not a guidance document. But it is something that other Sites have been using that has been causing questions, and I think may be appropriate for this Subcommittee to review. I'm not sure that this committee has ever reviewed Report 87. Have they?

Chair Beach: I don't think so. Kathy?

Mr. Barton: Tim, this is Bob Barton. Hopefully everybody can hear me. On the quantile regression analysis, we are looking at that actually. That is in our shop. I think it came up mostly related to Portsmouth, where it was used for photon-neutron

ratios and that sort of analysis.

So that is in our shop, and we are taking a look at that, and hopefully we'll have a report out to you fairly shortly, within the next month or two.

(Simultaneous speaking.)

Ms. Behling: Yeah, that's a task. I think that was a task.

Chair Beach: Oh go ahead, sorry.

Ms. Behling: Oh no, I'm sorry. I think that was tasked in February, at the February meeting. Yes, I've listed that, uh-huh. So yeah, we are working on that.

Chair Beach: Okay.

Dr. Taulbee: Good, all right. Thank you very much.

Ms. Behling: Thank you for pointing that out.

Chair Beach: Yeah. So I was going to ask Kathy, is there something you do in conjunction with waiting for Lori's list, so that you -- on this template? Okay.

Ms. Behling: Yes, that's a task. Yes.

Chair Beach: Okay. Can you get that out for me?

Ms. Behling: Okay, I will, because some of these Sites like Albuquerque Operations Office, they just sound so familiar, and I want to dig in and make sure, you know, that we're not repeating something we've already done. But and like Metallurgical Lab, PER-044 addressed changes to that template, but we didn't -- we weren't tasked to review that. And so but that Site sounds so familiar to me, but I think it has to do with -- I'll have to work with Rose to look at the dose reconstructions that we may have done early on.

If we found something, I think back when Mark Griffon was still on the Board, he would ask us to do like a mini-Site Profile review of something that we hadn't already looked at. So I just want to convince

myself. But that would have been years ago, and so these templates may have changed, so it -- and that's why I'm sort of waiting on Lori to give me just some dates associated with the most current template.

Chair Beach: Okay.

Ms. Behling: I can, I can focus a little bit more deeper because I have some questions in my mind also as to whether we have looked at all at the methodology. Even if we would have under a dose reconstruction review, we probably wouldn't have looked at the totality of the dose reconstruction methodology. We would have only looked at those components that were used in that dose reconstruction, and that may not be the entire DR methodology.

Chair Beach: Okay. So that makes sense, to perhaps look at that and send out a list to the Subcommittee, for if we need to do some further tasking. I think we can do that via email.

Ms. Behling: Okay.

Ms. Gogliotti: Kathy, this is Rose. I have DR statistics on basically all the Sites that I could send you, that might help you prioritize which ones or which templates might be the best to review first.

Ms. Behling: Okay, right. Thank you. Perfect.

Chair Beach: Okay, that sounds good. Anything else on that?

Ms. Marion-Ross: So this is Lori. For clarification, Kathy you're waiting on the list that will include the versions and the dates that that DR methodology had been revised, along with information as to which Site, which Sites may be underway in terms of being converted to a Site Profile or a TBD?

Ms. Behling: Correct.

Ms. Marion-Ross: That's what you're waiting on me for?

Ms. Behling: That's correct, yeah, if there's any major changes. Even if this BWXT is going to remain as a template, but you know that you're making changes to it, we should know that so that doesn't, that gets -- doesn't get prioritized as something we want to review. We want to wait until the revision comes out.

Ms. Marion-Ross: Sounds good. Thank you for that.

Ms. Behling: Okay.

Chair Beach: Thanks for asking for that clarification. It's good to know what we're all doing. Anything else on the templates or newly-issued guidance documents?

(No response.)

Next Subcommittee Meeting/Plans

Chair Beach: I want to circle back to Tim. We had talked earlier about things that may be coming up that are ready for the next meeting. Dr. Taulbee: Yes, and the -- well obviously Peek Street and TIB-5000. We can be ready for the next meeting to present those for sure. You've already got the draft out there, so we will have some presentations ready for that. Bomber, had mentioned Westinghouse Nuclear Fuels Division. He committed by the next meeting that that one is one that we will be ready to talk about as well.

And the other one that I'm going to add here is Birdsboro, because we are close on that one and I do feel that within the next month, next month or six weeks or so, we should be able to put out a memo to the Work Group from that standpoint. Of course, it might take us two months, but somewhere around there. That one is pretty close as well.

So those are the four that I've got on my list of things that I think we can be ready for the next meeting.

Chair Beach: Okay, and then -- oh, go ahead.

Ms. Behling: This is Kathy. Yeah. I was just going to say from the SC&A side, we should definitely have

the Grand Junction facility, the radon chamber discussion. We should have that memo prepared for the next meeting, plus we also have finished 2 PERs, PER-092 and 093, and we're ready to discuss those.

Chair Beach: Okay, and then you'll have a report for us on OTIB-0052?

Ms. Behling: Yes.

Chair Beach: And the templates possibly. The list will be out for that and we can task soon on those?

Ms. Behling: Yes.

Chair Beach: Okay. Anything else for the good of the Subcommittee?

Member Valerio: So Josie, just to clarify. All of these items that were just discussed are for the next Subcommittee meeting, not full Board meeting; correct?

Chair Beach: Correct. The only thing for the next meeting are the five, five that we discussed, 049, 006, 008, 023 and 006. So yeah, those are the only ones that will present to the full Board meeting. Everything else is Subcommittee.

Member Valerio: Right.

Chair Beach: Okay. Can we -- what do you think? Should we go ahead and schedule Rashaun?

Dr. Roberts: Yeah. We can tentatively identify something. Based on the rough agenda, I guess, that was just described, should we maybe zero in on September some time?

Chair Beach: That's what I was thinking, and because I am -- the first and second week, I'm unavailable. So anything from the 12th on.

Dr. Roberts: Okay, the 12th on? Let's see. How would September 14th?

Chair Beach: I asked --

Dr. Roberts: Would that work or the 15th?

Chair Beach: Yeah. The 15th would be better for me personally. I have an appointment on the 14th. Other, other Members?

Member Ziemer: I'm okay on the 15th. I'm okay on the 15th, Josie.

Chair Beach: Can we push that back just to the next week? I'm sorry, because I'm going to be out of town and I don't have time to prep. Maybe the week of the 19th. Any of those days work for me. Others?

Dr. Roberts: Okay.

Dr. Taulbee: This is Tim. I will out that week.

Chair Beach: Oh you will? Okay.

Dr. Taulbee: Not that I'm critical. Others can fill in for me.

Chair Beach: Okay. So then just, let's just go back to the 15th, if everybody's okay with that? I can be ready.

Dr. Roberts: And that works tentatively?

Chair Beach: Yes.

Member Ziemer: That's Thursday the 15th, right?

Chair Beach: Correct, yes.

Member Ziemer: Okay. That's good for me.

Member Valerio: That's good for me.

Chair Beach: Do we want to choose an alternate, or are we okay with that?

Member Ziemer: Well you know, we have enough time. If something came up, we could do something else.

Chair Beach: Okay. That sounds good. If everybody's okay subcommittee-wise. SC&A, no conflicts?

Ms. Behling: Fine with me. This is Kathy.

Member Ziemer: I mean I'm okay going another week beyond that if necessary, but is later in the month better for you Josie?

Chair Beach: Yeah. I'm okay with going, moving to the 29th and that gives us a little bit more time. But I can also do the 15th so --

Dr. Roberts: Would you like to go for the 29th, if that works for others?

Member Ziemer: I'm fine with that.

Member Valerio: Either date works for me.

Chair Beach: All right. I'm good with going a little bit later, so that would be okay. Thank you for all for mentioning that.

Dr. Roberts: Okay, and is the 28th or the 29th preferred? 29th?

Chair Beach: Either/or.

Member Ziemer: Either one is fine for me.

Dr. Roberts: Okay, either/or? Let's go with -- let's do the 29th.

Chair Beach: Okay, okay. All right. I think we are ready to adjourn, unless there's any other comments, questions?

Ms. Marion-Ross: This is Lori. I just want to add one thing. We may have some documents that will be published soon, so just look ahead Kathy, Rashaun. We'll be seeing all the emails letting you know where I've posted those documents in the virtual volume, as well you will know that they've been posted to the web.

Ms. Behling: Okay, very good.

Chair Beach: Okay, and that's great to know. Thank you, and then Rashaun, would you let the -- I'll know you'll let SC&A know, but the rest of the Subcommittee also that we can look at those?

Dr. Roberts: Sure, uh-huh.

Chair Beach: Thank you. Anything else? All right. Well thank you for all the hard work and the presentations. Kathy, I know a lot of that fell on your shoulders. Good work.

Ms. Behling: Thank you, not a problem.

Adjourn

Chair Beach: I would say we adjourn. Any seconds?

Member Valerio: I second.

Member Ziemer: Second, in favor.

Chair Beach: All right. Take care everyone. We'll talk soon.

(Whereupon, the above-entitled matter went off the record at 1:37 p.m.)