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ADVISORY BOARD ON RADIATION AND WORKER HEALTH

SUBCOMMITTEE FOR PROCEDURE REVIEWS (SCPR)

THURSDAY, SEPTEMBER 29, 2022

The meeting convened at 11:06 a.m., EDT via video teleconference, Melsa "Josie" Beach, Chair, presiding.

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Melsa "Josie" Beach, Chair

Loretta R. Valerio, Member

Paul L. Ziemer, Member

Registered and/or Public Comment Participants:

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Adams, Nancy, NIOSH contractor

Barton, Bob, SC&A

Behling, Kathy, SC&A

Buchanan, Ron, SC&A

Calhoun, Grady, DCAS

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Harrison, David, ORAUT-OTIB

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Marion-Moss, Lori, DCAS

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PROCEEDINGS

(11:06 A.M.)

Welcome and Roll Call

DR. ROBERTS: Good morning and welcome, everyone. This is the Advisory Board on Radiation and Worker Health teleconference of the Subcommittee for Procedure Review. I'm Rashaun Roberts, and I'm the DFO, for the Board. The agenda for today is on the NIOSH website for this program under scheduled meetings for September 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. If a conflict does happen to come up during the course of the meeting -- and I'm hearing some background, so everyone would, please, go on mute, that would be good. 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 their conflicts of interest apply.

So as we move through the roll call, Subcommittee Members and other, please state what -- where you have a conflict.

(Roll call.)

DR. ROBERTS: All right. Well, thank you so much and, again, apologies for the delay in the start of the meeting. Again, I'd like to welcome you. I just need to go over a couple of additional items before I give the floor to Josie Beach who chairs this Subcommittee. In order to keep everything running smoothly and so that everyone speaking can be

clearly understood, please make sure that your phone is on mute, unless you need to speak. If you don't have a mute button, press star six to mute.

If you need to take yourself off you can press star six again. Again, the agenda, the presentations, background documents, etc., that are relevant to today's meeting can be found on the NIOSH-DCAS website, and the materials were sent to Board Members and to staff prior to this meeting.

So with that, I will now turn the meeting over to Josie.

CHAIR BEACH: Thanks, and good morning. We do have a very full agenda. I won't take too much time to start with. Are there any changes, or do we need to switch the order at all today?

MS. BEHLING: I don't believe so, Josie. This is Kathy.

CHAIR BEACH: Okay. So, we'll keep things as they go. We will plan a comfort break somewhere at the halfway point. Probably just a 10- or 15-minute break. Hopefully, that'll be okay with everybody, and we can hopefully get through our agenda by 3:30.

And Kathy, I'll go ahead and start with you, Texas City Chemicals. You've got the floor.

MS. BEHLING: Okay. And actually, Rose is going to be presenting this. She did the review. My name is only on here because I finalized this presentation while Rose was on maternity leave, and she is back now on a part-time basis, and so she will make this presentation.

MS. GOGLIOTTI: Thank you, --

CHAIR BEACH: Okay, great.

MS. GOGLIOTTI: -- Kathy. Can everyone see my screen? CHAIR BEACH: Yes.

MS. GOGLIOTTI: Fantastic. Let me know if something changes.

CHAIR BEACH: (Indiscernible.)

Review of NIOSH's Report DCAS-PER-093, Texas City Chemicals, TBD Rev. 01

MS. GOGLIOTTI: Okay, so thank you. It's good to be back. All right. So this is our review of PER-93, which was issued because Texas City Chemicals TBD was revised, so Revision 01 was issued, and this specifically addresses any cases that may have been impacted by that change. I'm going to jump forward a little bit more here. Just some site background on Texas City Chemicals. The site was designed to produce animal feeds and fertilizers from phosphate rock. They had an AEC contract to construct a uranium recovery plant and extract uranium as a byproduct of the phosphates. They also had a development contract to evaluate leach-zone materials. The site initially sorry, I've got some background feedback here. Okay. Construction on the site began --

(Whereupon, there was an interruption in Ms. Gogliotti's audio feed.)

MS. GOGLIOTTI: (Indiscernible.)

CHAIR BEACH: Yeah, we sure are.

MS. GOGLIOTTI: Okay.

MEMBER ZIEMER: (Indiscernible) we're clear it sounds like.

MS. GOGLIOTTI: That's a little better, yeah.

MEMBER ZIEMER: That was -- this is Ziemer. Yeah.

MS. GOGLIOTTI: Great. Okay.

(Whereupon, there was an interruption in Ms. Gogliotti's audio feed.)

MS. GOGLIOTTI: Okay, great. That sounds much better, thank you.

CHAIR BEACH: Way better.

MS. GOGLIOTTI: All right. So construction on the site began in '52 and operations began in '53. However, the unit rate -- the uranium recovery plant had a number of problems with startups, and the plant never actually reached full-scale production. They ended up only producing a very limited amount of uranium, roughly 400 pounds. And then in 1956, they filed for bankruptcy, and the company that acquired Texas City Chemicals did not end up pursuing any additional uranium work, and the plant ultimately closed in 1977. So you'll see here --

(Whereupon, there was an interruption in Ms. Gogliotti's audio feed.)

MS. GOGLIOTTI: -- the covered period -- the EEOICPA covered period is from '53 to '77, with operations being from '53 to '55. That's also the FCC-covered period. And then after those dates is the residual period, which lasts until 1977.

Now, there are a number of documents that went into or that led up to this PER being issued, so I'll just briefly cover these so you have some background on what happened. SEC Petition 88 qualified for evaluation in August of 2007. And NIOSH issued their petition evaluation report in January of 2008. SC&A was tasked to review that in April of 2008, and we issued that review in July of 2008. And in that review, we identified nine findings.

Now before the Board had a chance to discuss any of those findings or our review, in May of 2009, NIOSH presented to the surrogate data workgroup that there was a series of new developments including the

discovery of some additional information that led them to want to revise their initial ER. So NIOSH amended their ER in October of 2010, and that amended ER covered -- modified the dates of the initial SEC petition slightly. And ultimately, they recommended granting the SEC based on the inability to bound radon dose with sufficient accuracy.

And in November of 2010, the Board voted to accept the NIOSH SEC class recommendation. Then several years passed and NIOSH issued a site profile for Texas City Chemicals in 2017. And that was specifically to give guidance to those reconstructors for workers that were not covered by the SEC as well as the residual period. SC&A was tasked to review that document. And in our review, which we issued in 2018, we identified two additional observations.

Before that was discussed again, NIOSH issued revision one of the TBD in 2020, and they did that for three reasons. The first was to address comments from SC&A's previous review, as well as revise ingestion intakes during the residual period, and they implemented some text changes and changed some formatting within the document. Whoops, sorry.

They also issued a memorandum at the same time, and that memorandum addressed SC&A's two observations from the previous PR review, as well as the nine findings from our review of the ER. And SC&A was asked to review that -- both of those documents. And at that time, we felt that all of the SEC findings and TBD observations were either fully resolved by the document or were no longer relevant based on the changes that were made, and those were all subsequently closed.

So specifically, the changes that NIOSH found that necessitated the PR

was in revision 01, they updated the residual ingestion intake rates to assume that the initial residual ingestion intake was equal to the ingestion intake rate during the uranium recovery operations. So essentially, during the entire residual period, ingestion intakes increased. So from 1955 through 1977, that was the only dose change that was caused by the revision. So that was the only thing that NIOSH looked at, and SC&A evaluated that and agreed.

Now, in order to capture all of the cases that were potentially impacted, NIOSH always use a selection criteria that essentially captions that -- to capture any case that could be potentially impacted by the PER. And with this particular PER, they only had two and they're fairly broad. The EE has to be employed during the residual period, because only the changes to ingestion intake impacted the residual period, and the case could not have already been compensated, so a POC of below 50 percent.

So, cases that had both of those in common is what they were targeting. And for people that were employed during the residual period, NIOSH identified 18 claims. And for cases that were below 50 percent, NIOSH identified 15 claims. The claims that had both in common were 14 claims. And so, NIOSH evaluated those 14 claims for the impacts of the PER, and we evaluated these selection criteria and we completely agree with them. They're very broad, but they absolutely captured anything that possibly could have been impacted that wasn't already compensated.

Okay. So NIOSH re-evaluated all 14 of those claims because (indiscernible) they didn't have to filter anything down anymore. 13 of the 14 claims had a new POC of less than 45 percent and one had a POC

between 45 to 50 percent. So that one was in the best estimate territory and even. And because none of them increased above 50 percent, no claims were requested back ultimately from the Department of Labor.

Okay. As for our subtask 4 recommendations, since no cases were ultimately returned to DOL SC&A recommends that we look at a single case from the 14 impacted cases just to confirm that the changes were made as we were expecting, and specifically, since one case was called out as having a higher POC than the others we think that would probably be the best choice for the evaluation. So ultimately, that is our recommendation. Are there any questions?

CHAIR BEACH: None here. I thought you're -- you covered it well.

MS. GOGLIOTTI: Thank you.

CHAIR BEACH: Paul or Loretta?

MEMBER ZIEMER: This is Paul. I don't have any questions. Well, it's kind of a question. So, this is a recommendation to the work group to evaluate that particular one or are you are already tasked to do that?

MS. GOGLIOTTI: It's a recommendation to evaluate that. We have not been tasked to do that. But as part of our Subtask 4, we always make a recommendation on the number of cases that be selected, any criteria that might apply.

CHAIR BEACH: And (indiscernible) select that one case will cover what we need for subtask 4?

MS. GOGLIOTTI: Yes, it's a fairly basic change. They're just bringing it up to compliance with OTIB-70, and we've reviewed OTIB-70 pretty extensively as a Board, so I think one is sufficient in this case.

CHAIR BEACH: Okay. And Paul, did I interrupt you did you have something else?

MEMBER ZIEMER: Josie, did you --

CHAIR BEACH: Yeah.

MEMBER ZIEMER: -- ask a question? I'm not --

CHAIR BEACH: Yeah, I thought I --

MEMBER ZIEMER: -- hear your answer.

CHAIR BEACH: Yeah. I thought I interrupted you, and I was wondering if you had anything else, Paul.

MEMBER ZIEMER: Oh, no, I don't.

CHAIR BEACH: Okay, Loretta, are you in agreement?

MEMBER VAERIO: I do have a -- well, I have a quick question for Rose. Can you hear me okay?

MS. GOGLIOTTI: I can.

MEMBER VAERIO: Okay. So, on the coverage of the site, the presentation says that it was operational between October 5, 1953 and September of 1955, but the white paper said that the operation ceased in 1956. So my question is, were any of those claims filed for employees who work during 1956 and will they be -- how will they be impacted by this PER, I guess?

MS. GOGLIOTTI: It's a really short window of time. It's actually the very end of '55 I believe it's only two months. And during that time, I believe the operation period was modified. And so at one point in time, the operations periods extended all the way through '56, And it was changed to that '55 date based on the new information that NIOSH found. But I don't

believe that there would be any cases that could potentially fall in that window just because it is such a short timeframe with the SEC going through September 30th of 1955. And even still, the amount of dose that would come from an ingestion intake of those a couple of months would be negligible.

MEMBER VAERIO: Thank you.

CHAIR BEACH: Loretta? Okay.

MEMBER ZIEMER: Josie, can you hear me okay? This is --

CHAIR BEACH: Yeah.

MEMBER ZIEMER: -- Paul.

CHAIR BEACH: Yeah.

MEMBER ZIEMER: Yeah, I --

CHAIR BEACH: Hi, Paul, (indiscernible).

MEMBER ZIEMER: -- from my end, that conversation with Loretta was breaking up a lot, and I noticed the court reporter was struggling. It looked like she was struggling as well. But and -- and so I didn't completely hear that. But I do have one more question for Rose.

Rose, do you know if there were any cases during the active period where there were cancers that were nonqualified cancers or anyone less than 250 days that would have qualified (indiscernible) or were all of the individuals who were in the -- in the class covered completely? Well, I --

MS. GOGLIOTTI: Because they're a little bit --

MEMBER ZIEMER: Like were -- were there any persons that worked in the class from -- in the active period?

MS. GOGLIOTTI: It's certainly a possibility. However, with this

particular SEC, the changes only impacted the residual period ingestion doses. So in order to be impacted by this change, you had to be employed during the residual period anyway. So you would be caught by the net, if you will, for the SEC selection criteria. So your employment didn't need to start --

MEMBER ZIEMER: Yeah.

MS. GOGLIOTTI: -- in the residual period. It could be any date --

MEMBER ZIEMER: Yeah. Well, I'm saying --

MS. GOGLIOTTI: -- '55.

MEMBER ZIEMER: Both of those categories could have been -- overlapped both the active and residual period, but would not be caught by the SEC part. That's why I was wondering if the net would catch anyone that -- that didn't have the specified cancers for the SEC and who didn't have 250 days but could have overlapped. It -- it's probably --

MS. GOGLIOTTI: Yeah. It would catch --

MEMBER ZIEMER: -- highly unlikely. It just occurred to me whether the net would catch those people.

MS. GOGLIOTTI: Yes, it would.

MEMBER ZIEMER: Okay.

MS. GOGLIOTTI: If you have one day of employment in the residual period, then the net would have caught you.

MEMBER ZIEMER: Regardless?

MS. GOGLIOTTI: Uh-huh.

MEMBER ZIEMER: Okay, got -- thanks. That -- that's --¬that clears it up. Thank you.

CHAIR BEACH: Okay, that makes sense. Do we need to take a vote on tasking subtask 4 and the case selection, as reviewed by Rose? Can we just passed that, Rashaun?

DR. ROBERTS: Yes, yeah, that can just be passed. Yes.

CHAIR BEACH: Okay. So --

MEMBER ZIEMER: Yeah. I support tasking that.

CHAIR BEACH: (Indiscernible), Paul. Loretta? Is there someone that --

MEMBER VAERIO: -- support it as well, Josie.

CHAIR BEACH: -- is unmuted? Okay, thanks, Loretta.

DR. ROBERTS: Someone's phone is unmuted that has a lot of background noise, so if you're not speaking, please mute and then unmute when you speak. That will help.

Okay, so we will move on. SC&A will report on PER (indiscernible) unless (indiscernible) comments.

MS. GOGLIOTTI: If NIOSH could just load that particular case into the portal and let us know where to find it, that would be helpful.

DR. ROBERTS: The -- which one? The Weldon Springs (sic)?

MS. GOGLIOTTI: No. The -- the case that (indiscernible) review.

CHAIR BEACH: Understand. And, I think, Lori, do you take that on?

MS. MARION-MOSS: This is Lori. Yes, I do.

CHAIR BEACH: Okay. If you'll load that and let SC&A know where to find it. Great. Thank you.

DR. ROBERTS: There is considerable background noise. I -- I'm not sure what the problem is, but the we need to make sure the telephone line

is on mute if you're not speaking.

MR. BUCHANAN: Okay. Are we ready for Weldon Springs (sic)?

CHAIR BEACH: Yes, Ron, we -- we are ready. You can go ahead and start. Thanks.

MR. BUCHANAN: Okay, thank you. This is Ron Buchanan with SC&A, and today I'll be reviewing PER092 for Weldon Springs (sic) Plant in Weldon Springs (sic), Missouri. Weldon Springs Plant was located just west of St. Louis, Missouri, and the facilities at Weldon Springs consisted of three major areas, which was the Weldon Spring Plant, the quarry, and the raffinate pits. And sometimes this is referred to in --- as the Weldon Springs Plant in general. It was operated by the AEC as a feed materials planT to process uranium and thorium ore by the Uranium Division of the Mallinckrodt Chemical Works.

Now, there was four major periods of operation that we'll consider, and that is the site acquisition that took place there in 1954 to 1957, then the actual operational period from '57 to '66. And after the plant shut down, there was a post-operational period from '67 to '85; however, this wasn't controlled by the DOE, this was controlled by DoD, and it controlled the plant during the post-operational period '67 to '85, the pits and the quarry from '67 to '74. And remediation began in 1985 and took place through 2002.

Okay. The Act covers the plant during the operational periods from '57 to '66 and the remediation period from '85 to '02, it can -- covers the quarry and pits from the operational period in '57 to '66 and also the post-operational period '75 to '85, and the remediation period from '85 to '02. Next slide.

Okay. Now, the radionuclides of dose significance was, of course, the natural uranium process in '57 to '62. And after '62, all the uranium assumed to be enriched to 1 percent, and then there was also natural thorium present, and recycled uranium processing began in 1961. Now, radon 222 and radium 228 was considered to be potentially significant for dose reconstruction purposes.

Now, the internal monitor that took place during operational periods for '57 to '66 consisted of uranium urine bioassays, and there was no records of thorium monitoring. And during the DoD period from '67 to '85, there was no DOE contract personnel bioassay monitoring conducted during this period that we could find. And then in the remediation period from '85 to '02, there was bioassay monitoring program extensively during the main part of the remediation between '91 and 2001.

External monitoring had similar operational period, '57 to '66. All employees in radiological areas was monitored. However, there was no ambient exposure rates recorded during this operational period. And during the DoD period from '67 to '85, there was no external monitoring because no DOE personnel were there. And there was no site surveys until '82 except for a single 1975 aerial radiological survey. Now during their remediation period from '85 to '02, personnel -- external monitoring was provided and site external ambient exposure monitoring began in '82.

Now, the Weldon Springs environmental dose site profile, which is the subject of PER092 was initially issued in 2005. It was revised several times through 2017 to revision 03, and then PER083 was issued in 2019 that address changes that took place in TBD 4, revision 03. And then revision 04

was issued in March of 2020, and we'll refer to that as a TBD in the rest of the slides -- TBD-4.

Now, the PER092 for Weldon Springs TBD-4 was issued in March of '21 and it addressed changes in the DR procedures for Weldon Springs facilities as a result of issuing of this revision.

Now TBD-4, revision 4, changes that would increase assigned dose consisted of environmental intakes of radon 222 and radium 228 was added for 1963 through 1966. Uranium 234 was -- intakes was added for the Weldon Spring quarry for the 1990 years as listed there and up through 2001. An onsite ambient dose for '57 to '66 was applied as a constant value previously, but in revision 4, it included geometric standard deviation values that could be applied through the lognormal distribution for any ambient external gamma doses assigned.

So, SC&A reviewed PER92, the board in February 15, of '22, task SC&A with that review. And in June 9th of '22 issued a review of PER92 for Weldon Springs. Now, when we have these PERs, when we're tasked with them, we have the four subtasks that Rose went through last time in the previous presentation, and I'll go through those in a little detail now.

Subtask 1 is to -- identifying circumstances that made PER092 necessary. And so the PER addressed the changes in revision 4 of the site profile for environmental does that could possibly increase internal and external dose assignments. And that's included, as we said before, radio -- radon, radium for '63 to '66 U-234 intakes for the quarry for the 1990s and use a lognormal distribution for external radiation dose '57 to '66.

Okay. So, we evaluated these changes and we reviewed TBD-4,

revision four, and PER92. We found that PER 92 indeed did address the changes in revision 4 that could potentially result in increases internal and external dose assignments and the additional changes in revision 4 were all -- for other purposes did not potentially impact the assigned dose. And we had no findings or observations pertaining to task 1.

So subtask 2, we were to assess NIOSH's revision of the site profile and they revised it from 03 to 04 to modify the ER methods to reflect best estimate DR methodology and to increase the radionuclide values and years. So, we reviewed TBD-4, revision 04, and found that the radionuclide intake values were correctly listed in the tables. We found that the external onsite ambient doses recommended in the tables were correctly converted from the continuous exposure in revision 3 to 2500 hours per year exposure in revision 4, so we had no findings concerning revision 4 of TBD-4.

Now, we did have one observation as far as documentation and the site profile. Now, we hadn't presented this to the workgroup or NIOSH, so therefore this observation remains open at this time. We just identified two minor documentation in that figure 4-2 is referred to on page 14 but couldn't find it in the revision 4, TBD-4 so it got omitted, and at table 4-7 footnote "a" to that table should read Table 4-5 -- reads 4-5 when it should read 4-6. A couple editorial issues to be addressed.

Okay. Next slide. Okay, and then, SC&A's to assess NIOSH's specific methods for correcting the actions in PER92. We find that the PER did address the changes in rev. 4 that could result in increased dose, and we had no findings or observations concerning PER92.

So subtask 3 now we was to evaluate the PER's approach for

identifying the number of PRs requiring reevaluation of dose. NIOSH looked through the various databases using the key words for Weldon Springs (sic) and came out with a total of 338 cases. And of course, not all of them require reevaluation, so they removed 284 cases for the following reasons: 51 cases were pulled because they fell under the SEC; 135 cases was pulled because the POC was greater than 50 percent; one case was -- was returned for other reasons and would be processed under the revised revision 4, TBD-4, and seven cases because there was no Weldon Spings (sic) employment visit during that covered period, and 90 cases because they were not affected by the changes in the environmental TBD.

In other words, they'd had individual monitoring and didn't need environmental doses or change assigned. And so to rewrite -¬evaluation of the remaining cases, there was 54 remaining cases that needed revaluations using the revised TBD-4 and other updated application procedures and the resulting POC for all 54 claims is less than 45 percent.

And now, so we evaluate selection process, and we found the selection criteria used by NIOSH for identifying these DRs that needed revaluations to be appropriate, and we had no findings or observations associated with subtask 3.

Okay. Subtask 4. Is to conduct an audit of a set -- sample set of the reevaluated cases mandated by this PER and consider or not what we just discussed. We discussed that the PER cases be selected for review from the Weldon Springs sites covering -- during the covered period. The combination of selected DRs needing to include the requirement of assigning environmental intake of radon 222 and radium 226 during all or part of the

1963 to 1966, who would require environmental intake of U-234 at the quarry during all are part of the '90s or in early 2000s, and that the onsite external ambient dose be assigned during all or part of '57 to '66. Now, one, two, or three cases can be selected depending on how many are needed to address the required three-dose assignments.

So in summary, evaluation as a site profile were reviewed -- re -- revision 04 and identified no findings. We did have a few minor observations concerning documentation and figure 4-2 and table 4-7. In summary of PER92 we reviewed it and had no findings or observations. We do request that NIOSH select the appropriate cases for review under subtask 4 and that the -- this subcommittee task SC&A with the evaluation of the selected cases.

Okay, that concludes my presentation.

CHAIR BEACH: Hi, Ron, this is Josie. Thank you. Good -- good review. Excellent.

Paul, Loretta, comments or questions about the first subtask 1, 2, 3?

MEMBER ZIEMER: This is Paul. I don't have any questions. I agree it's a very good presentation, Ron.. Appreciate that. Do we actually take action on the findings in doing the -- doing the tasking of the subtask 4? I can't remember if we actually act on subtasks 1, 2, and 3 in other cases. Have we done that or do we have --

CHAIR BEACH: I believe we have or did we -- we didn't on the Texas City Chemicals previously. And I'm --

(Whereupon, a cell phone sounds.)

CHAIR BEACH: -- not sure if we wait until the very end after our

subtask 4 and then the reporting.

MS. BEHLING: Josie, this is Kathy. Typically, if we have a significant findings or findings that need to be resolved from the PER before -- because of dose reconstruction methodology or such, we do not task subtask 4 until those issues are resolved, but in this particular case, these observations are just editorial or -- or, you know, corrections that have to be --minor corrections that have to be made, so I would suggest that we could move forward to task subtask 4 in this case.

CHAIR BEACH: Okay. So -- so it --

MEMBER ZIEMER: Which implies -- yeah, I'm sorry. Which implies that we do accept the -- or accept subtask 1, 2, and 3, correct?

MS. BEHLING: Well, I would still say that we need to identify -- I was planning on putting this observation into the BRS, and that should be actually marked as in abeyance until NIOSH has made those changes so that we don't lose --

MEMBER ZIEMER: Right. But that does not re -- that does not keep us from assigning the --

MS. BEHLING: Correct.

MEMBER ZIEMER: -- one, two, or three cases for review.

MS. BEHLING: Correct. That's what we've done in the past, yes.

CHAIR BEACH: Yeah. And -- and that was --

MEMBER ZIEMER: Thank you.

CHAIR BEACH: -- going to be my suggestion, that it goes on the BRS matrix in abeyance, and then we move forward with tasking. Loretta, any comments or questions?

MEMBER VAERIO: Yes, I do have a question. If Ron would, go back, and I think it was slide 7. Okay. So my question is, and my understanding is, that there were no DOE employees on-site between 1967 and 1985, but if -- hold on, I'm looking at my notes. So on the third bullet, it says site external ambient exposure monitoring began in 1982. So if there were no DOE employees there in 1982, if NIOSH is performing a dose reconstruction for employees who worked during the residual period, is that ambient exposure from 1982, and I'm assuming through '85, factored into those reconstructions?

MR. BUCHANAN: No. The -- as far as -- the way I understand it, there was no DOE personnel there, and that the '82 and '85 survey was not done by DOE personnel.

MEMBER VAERIO: Thank you, Ron.

MR. BUCHANAN: Uh-huh.

MEMBER ZIEMER: Well, this is Ziemer again. Because the other question on the DOD period, does that --does that take it -- automatically take it out of being a covered site during that period because it's --

MR. BUCHANAN: It would for the D --

MEMBER ZIEMER: The -- the -- they're still doing --well, I think they're still -- the material is still there, regardless of -- the DoD period just means they have a different contractor, doesn't it?

DoD's the contractor. Do we know there's --

MR. BUCHANAN: Yes.

MEMBER ZIEMER: -- there's the covered period? It's still the covered period, right?

MR. BUCHANAN: No. If you go back to the slide that had covered periods on it, it shows the periods that deal -- that the Act would actually -- yeah, right there. Okay. So it -- it's the remediation -- it's the operation and remediation period, and then the quarry and the pits are covered from '75 to '84. So if the worker worked at the quarries and the pits, they would be covered from '75 to '84, but they would -- if they worked at the plant -- be -- anywhere -- to do with the plant, they would not be because that was controlled by the DoD.

CHAIR BEACH: That's kind of interesting, isn't it, because it --

MR. BUCHANAN: Yeah. It's kind of a mixed --

CHAIR BEACH: -- still there.

MEMBER ZIEMER: So is the DoD using some DOE people partially during that period then, it looks like or how does that work?

MR. BUCHANAN: I don't --

MEMBER ZIEMER: Because --

MR. BUCHANAN: -- know the politics of it, but the way I understand it is when the DOE has a facility and they transfer that (indiscernible) the DoD, then the DoD is responsible for their personnel and anybody there, and that's not covered by this particular Act. Now, they might have an Act of their own or coverage, but it doesn't fall under this when that radioactive material or land or what facility's controlled by DoD. Now, that's my understanding. I'm not an expert on what the contracts say.

MEMBER ZIEMER: Yeah, I've noticed from (indiscernible) '84, which is within that DoD period, there's coverage.

MR. BUCHANAN: For the quarry and the pits.

MEMBER ZIEMER: Right. And the DoD didn't -¬ didn't -- wasn't responsible for those areas, or are they -- just the fact that there were DoD contract personnel there? Well, I guess -- I guess that's a technicality. That's -- that's what's covered then, yeah. But (indiscernible) doesn't include that for the WSP. WSP is (indiscernible) DoD, it looks like.

CHAIR BEACH: Correct.

MEMBER ZIEMER: The other two facilities, the gap is different.

MR. BUCHANAN: Correct.

CHAIR BEACH: A little bit, yes.

MEMBER ZIEMER: But as long as -- as long as those are the defined periods, that's what we're working with?

MR. BUCHANAN: Yes.

CHAIR BEACH: Correct.

MEMBER ZIEMER: Thank you. And thank you, Loretta. That was a good observation on your part.

CHAIR BEACH: Yes, it was.

Okay, so we're on to the case reviews. And so we are talking about one, two, or three to meet all the criteria listed. And then placing the observations in abeyance. And I'm assuming, Lori, you will do the same, look -¬place those in the virtual volumes and let SC&A know where they're listed?

MS. MARION-MOSS: That's correct.

CHAIR BEACH: Anything on well else from Weldon Springs?

MEMBER ZIEMER: Do we have to decide on the number one, two, or three today or --

CHAIR BEACH: No, I think --

MEMBER ZIEMER: -- who can make that --

CHAIR BEACH: -- have that -- yeah. NIOSH will have to do that based on what the -- the listed criteria in the slide, slide 21, and then they'll determine if it's -- if one meets all those criterias (sic) or two or three.

MEMBER ZIEMER: Gotcha.

CHAIR BEACH: So they'll have to determine --

MEMBER ZIEMER: Thank you.

CHAIR BEACH: -- that, correct? Correct, Lori?

MS. MARION-MOSS: Yes, that is correct.

Review of NIOSH's Report DCAS-PER-092, Weldon Spring Plant

CHAIR BEACH: Okay. Any other action needed on this? Okay. I believe we can move on to Battelle-TBD-5000, and NIOSH, you'll start that presentation, is that correct, or do you -- we want a --

MR. CARDARELLI: Yeah.

CHAIR BEACH: -- background on it first?

MR. CARDARELLI: Oh, no. I -- this is John, John Cardarelli. I can go ahead and share my screen.

CHAIR BEACH: Okay, we'll move on to that then. Thank you.

NIOSH's Response to SC&A Review Comments of Battelle-TBD-5000

MR. CARDARELLI: All right. This is basically a summary of our response to SCA's comments on the Battelle Technical Information Bulletin. 5,000. The first thing I'd like to do is acknowledge my Oak Ridge colleagues

who helped prepare this particular presentation, and that's Mutty Sharfi.

Quick overview, I'll talk about the brief history of the B TIB-5000, we'll talk about the comments which we received in 2022, and we our responses in July of '22. We do have some follow-up steps that I'll summarize, and I also provided a list of references with hyperlinks to some of the key documents that we will discuss in this presentation.

First, a brief history. This is a pretty old document. Back in March of 2007, this document was drafted. It's basically the default assumptions and methods used for Atomic Weapons Employer dose reconstruction, simply a guidance on how we would go about preparing dose reconstructions. About 15 years later, the Subcommittee on Procedure Reviews tasked at SC&A to review this document, and shortly after that, in January 2022, SC&A sent those comments on to NIOSH. They had 13 observations and zero findings. By August 2022, we provided responses to the -- to the SP -- SCPR, and that's the purpose for this presentation here.

So, the 13 observations, the first one was that the B-TIB-5000 makes extensive use of computer programs which no longer are publicly available. Response is that we concur, and that we currently employ a variety of freeware statistical programs like R-code, commercial Excel add-ins, like Vose or @Risk for dose reconstruction tools, and to perform various statistical analysis of datasets. That's the evolution from the past 14 years.

For observation number two, there are more modern methods for treating censored data. We certainly concur that there are more modern methods, and we've incorporated those modern methods in the various reports you see in the sub bullets. One is the regression on order statistics

as in ORAUT report 53. Multiple imputation is discussed in ORAUT report 0071 and ORAUT report 0096 discusses multiple imputation applied to bioassay co-exposure models. So these methods as described and B-TIB-5000 section 2.1.3, they are not being used today.

Observation 3: the number of observations in the highest airborne uranium concentration group in 1949 is stated to be 64. The value was inconsistent with the value of 61 shown in table 2.1 -- 2.4 and with the 119 total observations in 1949. We agree that it should have been 61. It's -- it's most likely the correct number for the fourth data point, as noted in the SC&A review. This observations did not alter any conclusions in the Technical Information Bulletin.

Observation four. The mirror image and preserved mean and variance methods are not supported by any technical background and statistical theory of which we are aware. Our response concurs that there are more modern methods for assessing data. More modern method to handle the sum of the normal, normal noise and lognormal signal is a normal-lognormal mixture distribution. It is described in report 96, The Multiple Imputation Applied to Bioassay Co-Exposure Models. The methods as described in the B-TIB-5000 are not currently being used today.

Observation five: B-TIB lacks a sound basis for asserting that the NCRP assessment of the reliability of the ICRP publication 30 model can be applied to the currently used ICRP 66 respiratory track and biokinetic models. Our response is we are currently addressing this observation, and we will include it in a separate report in the near future. This is the topic that I will discuss a little bit more detail once I get through the 13

observations.

Observations six: Geometric standard deviation of 10 derived from redundant -- redundant data across seven uranium refining plants is accepted for a site wide assessment of an individual worker. NIOSH concurs that the use of this GSD of 10 for an entire site, plant, or factory might be excessive. So GSD of 10, as described in the B-TIB-5000 section 3.6 is no longer currently being used. As noted in the SC&A comments, NIOSH is using a GSD of 5 as the default value in DRs dose reconstructions when no other uncertainty data are available. A minimum geometric standard deviation of 3 is often used for biokinetic modeling.

Observation seven: Dividing the operation, quote, removing covers from drums, that was -- unquote, that was observed to take 24 minutes per shift in two 12-minute periods characterized by low and high radon concentration respectively, is arbitrary and not claimant favorable. NIOSH response: Are -- we do concur that there are better statistical methods for consolidating data into a statistic to be used for dose reconstruction. We do not employ the results of the time weighted average example in the B-TIB-5000 section 3.8 for dose reconstructions at the Lake Ontario Ordinance Works. That information that was provided there was simply to demonstrate how time-weighted average calculations could be performed.

Observation eight: The procedure for assessing inadvertent ingestion for the residual period at the AWE site has been updated since the initial issuance of TIB-5000. Our response is that we concur that the use of OCAS-TIB-009, which is called the estimation of intent -- ingestion intakes to assess inadvertent ingestion during an AWE site's residual period is not

appropriate. During an AWE site's residual period, NIOSH is currently standardizing our approach to be consistent with a NUREG guidance which is based upon NUREG/CR 5512 dated in 1992, Volume 1, specifically, we use section 6.3.2 for guidance on inadvertent ingestion.

Observation nine: revised guidance on dose reconstruction from occupational medical X-ray procedures, which was ORAUT-OTIB version 6, revision five should be used for the assessment of external doses for such procedures. NIOSH concurs and is currently using the version of ORAUT-OTIB-006 when performing the current dose reconstruction. I think this was just a continuation of a 15-year lag between when we started and then when we -- where we are today.

Observation 10: Missed doses should be assigned according to the current procedures. OCAS-IG-001, revision 3 OTIB-0020, revision 3. Assigning a triangular distribution with minimum equals zero, mode equals point 0.5 x the limit of detection and the maximum equals the limit of detection not consistent with current guidance. We certainly agree that external missed dose should not be assigned using the triangular distribution today. Guidance is associated with an assignment of external missed dose as covered in OCAS-IG-001, which is the External Dose Reconstruction Implementation Guide, and ORAUT-OTIB-0020, which is use of coworker dosimetry data for external dose assignments. The method described in B-TIB-5000, Section 3.1 is therefore not currently being used in any dose reconstructions today.

Observation 11: Ingestion should be added to the pathways of environmental doses. NIOSH agrees that this ingestion is a possible

pathway of environmental intakes and should be considered when developing an environmental exposure approach. ORAUT-PROC, P.R.O.C., -0031, the site profile and technical basis document development Section 6.7.3 calls for the ingestion pathway to be evaluated if it is applicable to the site. And the references are provided near the end.

Observation 12: Using a lognormal distribution with the mean value of .02 to represent an equilibrium factor for thoron is questionable. A bounding site-specific equilibrium factors should be derived as needed based on available data. Our response is that the equilibrium factor as described in B-TIB-5000, Section 3.17.3 is not currently being used today. Guidance associated with the thoron equilibrium factor is provided in DCAS-TIB-011, dose conversion factors for radon working-level measurements.

Observation 13: Even if the true underlying distribution of concentrations were lognormal, there's no reason to assume that the distribution of the uncertainty of the representativeness parameter is also lognormal. Our response: We certainly concur that there are more modern methods for dealing with uncertainty such as distribution. This method as described in B-TIB-5000, Section 3.20 is not currently being used today.

So our next steps, we are developing a separate report to address the use of a geometric standard deviation of 3.0 for uncertainty in the biokinetic model. It will be the response to observation number 5, and the use of this GSD of 3 may be the only part of B-TIB-5000 that is currently being used in dose reconstructions today. NIOSH is currently assessing the role Batelle-OTIB-5000 may have on other programmatic documents that provide guidance on dose reconstruction. Once we complete that review, we will be

considering canceling this document.

And then the next several slides, which I -- I will just leave the presentation. I -- I won't go over each one of these presentations, but I have four slides of references that reference -- with hyperlinks that should make it a little bit easier to review the details associated with the documents referenced in this presentation.

So with that, I will entertain any questions.

CHAIR BEACH: Thanks, John. Good review. This is Josie. Does that say -- well, first of all ask the Board. Any questions, Paul or Loretta, with John's presentation? I thought it was very thorough, John. Thank you for that.

MR. CARDARELLI: Thank you.

CHAIR BEACH: (Indiscernible) and otherwise --

MEMBER ZIEMER: Yeah, I think --

CHAIR BEACH: Oh. Go ahead, Paul.

MEMBER ZIEMER: Yeah, this is Paul. Very good job, John. The -- the surprise to me is that -- is that TBD-5000 wasn't actually formally recon -- revised somewhere over that long period of time between when it was first developed and when we had it actually reviewed, because for practical purposes, it really hasn't been used as it's written for, I suppose, it's been gradually all of these other methods or revisions that are actually used have come into play, but they haven't been formalized in the document itself, so but -- but they're formalized elsewhere is what -- what has -- that appears; is that correct?

MR. CARDARELLI: That is correct. It's been, you know, 14 years

since we first drafted it to the point of review. There has been significant improvements of applying new statistical methods and information. So, yes, your observations are correct, and we -- we continuously incorporate new information in our approaches as they become available and are scientifically robust.

MEMBER ZIEMER: But it -- but it sounds like rather than incorporate all these changes that you described, you will -- since they're covered elsewhere, you won't really need the document, per se. Is that what you're saying?

MR. CARDARELLI: Yes, sir. We are hoping that once we formally document how we apply that geometric standard deviation of 3.0 in our biokinetic modeling and have that as a separate report where we can reference, there will no longer be a need for B-TIB-5000 and we would be asking to have this cancelled.

CHAIR BEACH: Yeah, John, your next steps is very helpful. Can you give us an idea of how long that report's going to take for observation 5, the...?

MR. CARDARELLI: That's a good question. I will say if priorities get -- can get figured around, several months, probably early part of 2023.

CHAIR BEACH: Okay. And do you think you'll have the other part of this by then concluded, the last bullet on

MR. CARDARELLI: (Indiscernible) -- yes. The second bullet, which is where we're currently assessing if there are any other documents that rely on B-TIB-5000 that could impact DRs. That's -- we will -¬we should have that completed around the same time.

CHAIR BEACH: Okay, thank you. SC&A -- I don't know if Bob -- I know Bob reviewed this. I don't know if he's on the line.

MS. BEHLING: This is Kathy. And yes, Bob was planning on being on the line, and he does have responses to these -- to NIOSH's response. Are you there, Bob? I did email him, and I haven't heard a response. He was supposed to be joining us. Let me --

MEMBER ZIEMER: Bob is listed on the -- present on the --

MS. BEHLING: Okay.

MEMBER ZIEMER: -- on the Teams site.

Member Behling: He is listed, okay. He probably is not aware that he needs to dial in. Can I quickly send him an email and see if I can get him to -- to call -- to dial in?

CHAIR BEACH: Sure. His -- it actually says no response under him. Okay, yeah, go ahead, Kathy.

MS. BEHLING: Okay. Just one second. I apologize.

MR. ANIGSTEIN: Hello, this is Bob Anigstein. Am I audible now?

CHAIR BEACH: Yeah, you sure are, Bob.

MEMBER ZIEMER: Yeah.

CHAIR BEACH: Thank you.

MR. ANIGSTEIN: Am -- am -- am I good to go?

CHAIR BEACH: Yes, --

MEMBER ZIEMER: Yes.

CHAIR BEACH: -- you're good to go.

MR. ANIGSTEIN: Okay. I've asked Kathy to --Kathy Behling to show Dr. Cardarelli's slides again, so I don't have to read them out loud and then I

just make the comments on them. So that should be SC&A observation 1 should be on the screen. And our -- our reply is that we're satisfied with NIOSH's response, and we recommend observation 1 be closed.

MS. BEHLING: Excuse me just one second. Can everyone see my screen?

MR. ANIGSTEIN (PH): Hello?

CHAIR BEACH: Yes, we can see your screen, Kathy.

MS. BEHLING: Okay. Thank you.

MR. ANIGSTEIN: Observation 2: We note NIOSH's response, however, the reports that are quoted have never been reviewed by SC&A. We've reviewed ORAUT report 0053, rev. 2, and we have findings which are still in progress. And we have not had the opportunity to review ORAUT report 0071 or report 0096. So until those reviews have taken place, we recommend that observation 2 remain open.

Observation 3: --

MR. CARDARELLI: Hold on. I believe that report 96 has been reviewed. Am I mistaken on that, Bob Barton?

CHAIR BEACH: No, I was thinking the same thing.

Mr. Barton: Yeah, this is Bob. Yeah, the multiple imputation, we didn't look at that, and we presented to the joint SRS and SEC's workgroup (indiscernible) findings.

MS. BEHLING: Okay, that was --

MR. BARTON: I'm not sure about report 71, however.

MS. BEHLING: Report -- this is Kathy. Report 71 has not been. We have that on our list at today's meeting to request that we -- that we review

that, but we have not reviewed 71. And that is my mistake. I gave Bob that information about 96, so I apologize.

CHAIR BEACH: That's okay -- we can -- we can leave that one open. And we'll get to opening and closing formally when we get to the end of Bob's report, but I think we'll be okay to leave that one open for him to look at those. So I think we can go ahead and move on if that's okay with everybody.

MR. ANIGSTEIN: Okay. Observation 3: That's a -- that was basically a clerical error in TIB-5000 and that -- observation 3 can be closed. That was it was settled.

Observation 4: The mirror image and preserve mean in various methods. Again, we go back to the observation 2. The ORAUT report 0096 has been cited as the more modern method for assessing data. We have not had the opportunity to review this report and therefore, we recommend observation 2 -- 4 remain open.

Observation 5: Where, obviously, it remains open. It has not been addressed yet.

Now, observation six: We concur with NIOSH's use of GSD of 5 as the default value in DRs when no other uncertainty data are available. However, NIOSH needs to provide a basis for the assertion that a minimum GSD of 3 is often used for biokinetic modeling. As stated in our review of Battelle-TIB-5000, and I quote, Battelle cites an email correspondence from Bihl, et al., B.I.H.L., 2006 with the title "Bases for GSD equals 3 for internal dose used by NIOSH. However that email according to, Tim Taulbee, is not is not retrievable from 2006. So therefore, we note that, as Cardarelli stated, that

NIOSH is developing a separate report to address the use of GSDF 3 for biokinetic modeling, but pending review of that resolution, we recommend that observation 5 remain -- observation 6 remain open, as well as observation 5, of course,

DR. TAULBEE: This is Tim. This really kind of subsumed into observation 5, because it's the same that --

MR. ANIGSTEIN: The two --

DR. TAULBEE: -- (indiscernible).

MR. ANIGSTEIN: The two -- the two turn out to be related. Okay. Observation 7: This refers to the DR methodology for the Lake Ontario Ordinance Works, and we have not had the opportunity to review NIOSH's current DR template for LOOW. So until we do that, we recommend observation 7 remain open.

Observation 8: This is a technical issue that we're raising with the procedure for inadvertent ingestion no longer uses OCAS-009, it relies on a set of NUREG reports, which is NUREG CR 6755, which is based on in principle, NUREG CR 5512, Volume 1. However, we noticed that if you take together the CR -- NUREG CR 6755, NUREG 5512, Volume 3, which is a later revision of Volume 1, it came 8 year 9 -- 7 years later. And there are three different values for the ingestion rate. They're not very different, but the 6755 recommended the mean in the rate ingestion rate from contaminated surface of 1.12 10 to the minus 4 meters per hour -- meters squared per hour. And 5512, Volume 3 has a value of 1.1 times 10 to the minus 4, so it's about 2 percent less, but it's still more favorable than the rate of simply 1 times 10 to the minus 4. This is in NUREG 64 5512 Volume

1.

And I could just add parenthetically that Volume 3 is an update of Volume 1. It was -- it's a different set of authors, came seven years later. So we would recommend that NIOSH first of all, specifies which of these three, because a dose reconstructor could have, based on what we've seen -- not have guidance as to which of these three values to use, and 1.1 8 times to minus 4 seems to be the more robust value because it's a mean of uncertainty distribution, whereas the Volume 1, it's just a qualitative assertion. So anyway, until this has been a resolved, recommend observation 8 remain open.

Okay, observation 9: It's just a question of using the updated guidance for medical X-ray procedures, which NIOSH is now using, so we recommend that be closed.

Observation 10: Missed doses are now being used -- a newer -- being used -- are now based on OCAS-IG-001 and ORAUT-OTIB-20. We've reviewed both. SC&A has at various times reviewed these documents. We found them to be acceptable, and therefore the observation 10 should be closed.

Observation 11 by ingestion, pathways of environmental doses. We confirmed that soil and water ingestion are cited as environmental pathways in -- in ORAUT-PROC0031. We recommend that observation be closed.

Observation 12: Using a lognormal distribution with mean value of 10 to -- mean value of point -- 0.02 representing -- of thoron is questionable. NIOSH's responds using equilibrium factor and it said aren't using DCAS-TIB-0011. We have not reviewed TIB-0011, therefore we remain -- we

recommend that observation 12 should remain open.

And finally observation 13: About the -- the mixture, the mixing the -- the distribution of concentrations with a distribution of the uncertainty of the representative for matters, and NIOSH said there are more modern methods of dealing with the uncertain distribution. However, they don't specify what are these more modern methods so we can add evaluate NIOSH's solution to observation 13, and we recommend that pending -- pending this clarification, we recommend observation 13 remain open. I'm open to questions.

CHAIR BEACH: Thanks Bob. I have a quick question on 12. Is DCAS-TIB-011 on our review list, Kathy? Do you know?

MS. BEHLING: That -- this has come to my attention when Bob was doing this review, so I have it written down, but I didn't formally include it in the documents to be tasked but I was going to mention it when we get to that point.

CHAIR BEACH: Okay. So for --

DR. TAULBEE: This is Tim. Can I ask a question here?

CHAIR BEACH: Sure, Tim. Go ahead.

DR. TAULBEE: Okay, you know, I mean, as Bob was going through and saying -- recommending things stay open here in TIB-5000 until other documents are reviewed, you know, I got no problems or, you know, SC&A or Subcommittee wants to review other --¬other documents, that's fine, but I -- I'm questioning as to why you would keep it open OTIB-5000 when we're not using it.

We've -- we've indicated what it is we are using and, you know, if the

Subcommittee wants to review those documents, fine. And if you have findings against them, we'll be happy to work with that and resolve those, but why would we keep them open in OTIB-5000?

CHAIR BEACH: You know, Time, I was just --

DR. TAULBEE: (Indiscernible) --

CHAIR BEACH: Yeah, I was just gonna go through that with the Subcommittee and ask that exact question on how we wanted to tackle this, so --

UNIDENTIFIED SPEAKER: (Indiscernible.)

CHAIR BEACH: -- hold that thought and -- and let me ask the Subcommittee, Paul and Loretta. So there are several recommended for closure. We know that the OTIB is going to be closed, however, there are a couple recommend to remain open for review. Do -¬are you satisfied with just the comments or do you want something written up from Bob before we take action on any of these? What are -- what are you guys thinking?

MR. ANNECKSTEIN (PH): Is that a question for me?

CHAIR BEACH: No. That's a question for Paul and Loretta.

MR. ANNECKSTEIN (PH): Oh, okay, sorry.

CHAIR BEACH: That's okay, Bob.

MEMBER ZIEMER: Well, I think at the moment I wouldn't want to spend time on these from the point of view of revising TBD or -- yeah, 5000, because it's going to be obsolete and --

CHAIR BEACH: Correct.

MEMBER ZIEMER: -- but we may want to carry these forward so that they are taken care of when -- when we reach the point where 5000 is gone

and the other -- the other documents -- because actually, I think, Bob, you are referring to a number of other documents that you hadn't reviewed. And so in --

CHAIR BEACH: I think --

MEMBER ZIEMER: -- a review of those, many of these observations, I think, will -- will be handled. I mean, that's --

CHAIR BEACH: Yeah, I --

MEMBER ZIEMER: -- what they amount to, that in a in absence of (indiscernible) agreeing, the observations and the only issue I think most of these, I think I followed as Bob was reviewing was there are some that they haven't looked at that are part of the response. So --

CHAIR BEACH: Correct.

MEMBER ZIEMER: -- but --

CHAIR BEACH: So how --

MEMBER ZIEMER: -- don't want to officially closed them, but those are going to be reviewed anyway if they haven't already. And, you know, at that point, maybe we handle the observations as that's done, but I wouldn't do it specifically for the benefit of 5000, which is just gonna -- in the process of being deleted.

CHAIR BEACH: Correct. Okay. So, what I'm thinking is if we could formally closed 1, 3, let's see, 10 --

MEMBER ZIEMER: 7.

CHAIR BEACH: -- or 9, 10, and 11.

MEMBER ZIEMER: 7 is -- yeah, --

CHAIR BEACH: I think that's --

MEMBER ZIEMER: -- 9, 10, and 11, right.

CHAIR BEACH: Yeah. And then the others, if Bob, you would go ahead and write up your -- I know you verbally gave us a -- something, but if you would write up recommendations for the others, 2, 4, 5. We already know 5, but 6 is added to 5, so we'd have 7, 8. And then I think NIOSH needs to answer that question on 13, what methods are being used. And does that sound agreeable to the Subcommittee?

MS. BEHLING: Josie, this is Kathy. Can I make a comment?

CHAIR BEACH: Of course.

MS. BEHLING: Okay. One of the things that just occurred to me as we were talking about this, perhaps for those observations where we indicated that we really need to look at some other documents that maybe have not been tasked yet, perhaps all -- I can put all of this information into our temporary BRS, and those particular observations could be transferred to the review of other documents that Bob mentioned. Is that something that you would consider or would you --

CHAIR BEACH: Yeah, I don't -- I don't have any problem with that at all. We're not going to close out until it's canceled anyway. So you -- I think you need to track it and maybe hold a spot.

MS. BEHLING: Okay. Do you --

MEMBER ZIEMER: Well, I think that's --

CHAIR BEACH: But we don't want to --

MEMBER ZIEMER: I think that's --

CHAIR BEACH: What's that, Paul?

MEMBER ZIEMER: This is Paul again. I think that's exactly right,

because we do want to track these but handle them as -- as the other documents are reviewed.

CHAIR BEACH: Correct. That seems reasonable, but --but the tracking is going doubled up, Kathy. We can't really not track OTIB-5000 until it is either closed or that separate document is -- is created to cover 5. So are we in agreement with that?

MEMBER ZIEMER: Yeah. And I think Kathy's suggesting that for now we track it through the 5000 document and at appropriate times, some of those can be transferred to reviewed when we're given the other documents. Is that --

MS. BEHLING: Correct.

MEMBER ZIEMER: -- right, Kathy, what you --

CHAIR BEACH: And I just --

MS. BEHLING: I'm sorry, yeah. This is Kathy. I was just suggesting that as an option for us to ultimately maybe be able to close TIB-5000 but still track these observations through a transfer process.

CHAIR BEACH: Right. I -- I agree with that. It's just going to be a little double -- doubling up on it until --¬ but like, for instance, the 96 report. It has been reviewed. I think Bob just need to review that. So that's one that's been reviewed. And I think we should ask Bob to write up his observations. And we can report back -- he can report back on -- at the next meeting on some of these, and then NIOSH needs to come back with observation 8, which volume they're using, clarifying that after Bob writes his -- his --

MS. BEHLING: Agreed.

CHAIR BEACH: -- notes on that. And then --

MS. BEHLING: Yeah, thank you.

CHAIR BEACH: -- observation 13.

MS. BEHLING: And I agree, Josie, that keeps it clean. I just thought about this transfer thing as he was talking, so yes.

CHAIR BEACH: Okay. And then let's go ahead and take a vote if you're prepared to vote, Loretta and Paul, on closing the items that SC&A recommended closing.

And I believe -- was 1 included in that Bob?

MS. BEHLING: Yes, observation 1 can be closed.

CHAIR BEACH: Okay, so close --

MS. BEHLING: Yes.

CHAIR BEACH: Closing observation --

MR. CARDARELLI: Josie, this is --

CHAIR BEACH: -- 1. Yep, go ahead.

MR. CARDARELLI: This is John Cardarelli. As we go through this, I'm going to suggest adding observations 4 to the close list because the only document there that we mentioned is report 96, which we know from observation 2 that it has already been reviewed by SC&A, so that's just something to consider for observation 4.

CHAIR BEACH: Yeah, I wanted to have Bob get a chance to look at that before we just closed it. I think it's a formality, but since he hasn't had the time to look at that unless somebody else -- SC&A if you have another thought on that.

MS. BEHLING: I think it's --

MEMBER ZIEMER: I think Bob Barton or somebody indicated that it already had been reviewed, which I think -- or were there still open items on it?

CHAIR BEACH: I just wanted to make sure it covers -- I guess, I mean --

DR. TAULBEE: I mean -- sorry, this is Tim. I mean, I guess I don't mind, you know, Bob looking at it as well, but if it has been looked at by the SEC Issues Workgroup and the SRS Workgroup during their review of -- of the SRS co-exposure model -- so, it has been looked at by at least two other work groups and this one wants to pick it up, too, I guess -- I mean I guess that's okay.

CHAIR BEACH: Bob, I guess I'll ask you? Anything? Are you okay with closing that knowing that it's been reviewed, or would you like to look at it?

MR. ANIGSTEIN: If I'm being asked, I would like to read the review to see whether -- how it fits into this. It's -- I'm not familiar with that report at all.

CHAIR BEACH: Okay. That was my thought, too. I and I -- I think it's a minor -- it -- it can be discussed at the next meeting as well as the other.

So formally, we are recommending following SC&A's recommendation to close 1, 3, 9, 10, and 11. All in agreement?

MEMBER ZIEMER: I agree. This is Paul. I agree.

CHAIR BEACH: Thank you, Paul. Loretta?

MEMBER VAERIO: This is Loretta. Josie, I agree with that.

CHAIR BEACH: Okay, so we -- those are closed. And then if NIOSH could get back to us on observation 8 and 13, and then Bob, if you would, write up a short summary of what we discussed today on the others that are open, then we can move this to our next meeting if that seems okay with everybody.

DR. TAULBEE: This is Tim. I do have one comment for, I guess, for Bob and for Kathy. On observation 12 where you said you had not reviewed TIB-11. We believe that you have, this Subcommittee back in 2006, but we're not sure. We're trying to check on that right now, and as we get more clarification of that, we'll send you that information.

CHAIR BEACH: Oh, that's great. Thanks, Tim.

Okay, anything else for the Battelle-5000? Rashaun, I think this might be a good stopping point for our comfort break.

DR. ROBERTS: Okay, how long would you all like?

CHAIR BEACH: I would say 10 or 15 minutes if that is agreeable to the rest of the people online. Subcommittee, Paul and Loretta, is that enough time for you?

UNIDENTIFIED SPEAKER: I'm good.

MEMBER ZIEMER: Out here it's one o'clock, and we need to grab some food.

CHAIR BEACH: Okay, so do you need more time than 15 minutes then? Would you like 30 minutes?

MEMBER ZIEMER: Well, I don't need 30. I just need to get to the refrigerator and grab some things. I can eat while we're talking.

CHAIR BEACH: Okay. So it's 12:47. Rashaun, how about if we go

until 1:10.

MEMBER VAERIO: Yeah.

CHAIR BEACH: Does that work for everybody?

MEMBER VAERIO: Yeah.

MEMBER ZIEMER: Yeah, that's good.

CHAIR BEACH: All right.

UNIDENTIFIED SPEAKER: Are we --

CHAIR BEACH: So who's gonna start with the Birdsboro? Is that SC&A or NIOSH? I wasn't sure.

UNIDENTIFIED SPEAKER: That's NIOSH.

CHAIR BEACH: NIOSH, okay, I thought so, but I didn't see any -- okay, thank you. We are on break.

(Whereupon, a break was taken from 12:48 p.m. until 1:10 p.m.)

CHAIR BEACH: So we're on Birdsboro Steel Foundry and Machine Company and NIOSH will be presenting. I don't believe there's any slides, is that correct, just your memorandum?

Review of NIOSH's Report DCAS-PER-073, Birdsboro Steel and Foundry Company

MR. ROLFES: Josie, this is Mark Rolfes, and yes, you are correct. I have just the memorandum that I had prepared and had Lori send out earlier this September. I'd be happy to take you through that in a quick summary and then answer any questions that everyone might have.

CHAIR BEACH: Okay, that sounds good. Thank you.

MR. ROLFES: Okay. So, the information that we know about

Birdsboro Steel is that it was an AEC-covered facility in 1951 and 1952, and it was contracted by the Atomic Energy Commission to develop a rolling mill for the new feed materials production center at (indiscernible).

Birdsboro did received during this contract time small amounts of uranium, which were several small wafers of uranium and (indiscernible) uranium (indiscernible).

I'll wait for the feedback to end. Okay. So if you don't know the --

CHAIR BEACH: Mark, this is Josie. Let me cut in for just a sec. Loretta's dialing back in. Thanks. Sorry about that.

MR. ROLFES: No problem.

MEMBER ZIEMER: Mark, this is Paul. Mark was breaking up. I didn't know -- I think the court reporter was having trouble hearing him as well. I only heard about half of that. And then also I want to ask, were you going to project your document onto the screen, Mark? And I have it, I just didn't --

MR. ROLFES: I didn't --

MEMBER ZIEMER: I didn't know.

MR. ROLFES: I hadn't planned doing that, but I think if someone needs --

DR. ROBERTS: Okay, there's also an echo. If everyone can make sure they're on mute, that'd be great.

CHAIR BEACH: Mark, do you want to go ahead and try again?

MR. ROLFES: Sure.

CHAIR BEACH: There's still an echo, so if you're not muted, please mute.

MR. ROLFES: (Indiscernible) --

DR. ROBERTS: And just --

MR. ROLFES: (Indiscernible) --

DR. ROBERTS: Again, I'm hearing some interference, so if you can --

MEMBER VAERIO: Am I on mute (indiscernible)?

DR. ROBERTS: Loretta, is that you?

MEMBER VAERIO: This is Loretta. I'm back here.

DR. ROBERTS: Okay, The echo still there. I don't know if it's your phone or whether it's someone else's, but everyone should go on mute.

MR. ROLFES: Okay. This is Mark. Is everybody able to hear me okay, or is there still an echo?

CHAIR BEACH: There is still an echo, but I can hear you and I see you put your slide or presentation up, so thank you for that.

MS. BEHLING: I -- I'm running the presentation for or the memo for him. This is Kathy, sorry. I hope that's helpful.

MR. ROLFES: Thank you, Kathy. Okay. So, once again (indiscernible) -- I'm still getting feedback here again.

DR. ROBERTS: Is anyone connected to audio on Teams, because if you are, you're going to need to disconnect from audio on Teams and call into the bridge line.

MR. ROLFES: All right, I can give it another try. I think that sounds a little bit better this time.

Okay, so Birdsboro is an Atomic Energy -- I'm still getting a delay.

CHAIR BEACH: I don't think it's the computer because I checked everybody's muted. I think somebody on the phone is unmuted.

Do you hear an echo when I talk, Rashaun, or just when Mark does?

DR. ROBERTS: No, just when Mark is talking.

CHAIR BEACH: Mark, it might be your phone.

MR. ROLFES: Apparently so. Let's see here. I don't know if I have a home phone that I can call in from. If you could give me two minutes, I will attempt to call into the meeting from my home phone number.

MEMBER VAERIO: Josie?

CHAIR BEACH: Yes.

MEMBER VAERIO: Can you hear me okay?

CHAIR BEACH: Yes, you're echoing, but I can hear

MEMBER VAERIO: My computer's saying the same thing, that it needs to restart so I'm going to take a couple of minutes. I'm going to shut down and get back in get back in.

CHAIR BEACH: Okay, thank you. You'll still leave your phone on though, right?

MS. BEHLING: Josie? This is Kathy Behling.

CHAIR BEACH: Yes. Hi, Kathy.

MS. BEHLING: Oh, hi. I just wondered if I could make a comment about something that Tim mentioned with regard to TIB-5000. He was looking into whether SC&A had reviewed TIB-11. And I did go --

CHAIR BEACH: Correct.

MS. BEHLING: Yeah. I did go back into the records, and we reviewed rev. 0 back in 2005 of TIB-11. It's currently -- the last revision was in June of 2018. And that's revision 5, and there have been various correction factors that have been added to the TIB. As a minimum, I think that -- I am

-- I'm -- I'm just suggesting that I think Bob should still have an opportunity, maybe, to look at that TIB-11 even if you don't think that we need to re-review it. I do think it would be prudent for Bob to go back and -- and look at that to be sure it satisfies that one observation.

CHAIR BEACH: Okay. And I -- we did recommend that. So -- so thanks for --

MS. BEHLING: Okay.

CHAIR BEACH: -- checking on that. And then when we get to documents, we can discuss whether we need a review of that --

MS. BEHLING: Okay.

CHAIR BEACH: -- moving forward. I think that's one of our topics. The other question I have because of our agenda and our scheduling today, are we going to get through and if not, which ones can we hold off on?

MS. BEHLING: Well, my --

CHAIR BEACH: Do you have any ideas?

MS. BEHLING: My suggestion would be that we could hold off on PER 49, that's subtask 4. That was just tasked by the full Board at the August meeting. And I -- I am under the impression that NIOSH is not in a position to respond to that PER. So that's one thing that we could carry over. And I'm not sure what else here --

CHAIR BEACH: I'm wondering if -- the prep for the December meeting, if we have to, can we do that by email or is it --

MS. BEHLING: I --

CHAIR BEACH: -- something we need to do.

MS. BEHLING: Yeah, that's something I think we should try to take a

little bit of time. It doesn't usually take us too long. But just to go through the approved documents, and I have some suggestions as to ones we may want to consider. And I just want to give you an understanding of what we can do brief -- very briefly and what may take a little bit longer. So if we start to run out of time, let's move to that. Is that okay with --

CHAIR BEACH: Okay, sounds great.

MS. BEHLING: Thank you.

CHAIR BEACH: Yes, thanks.

MR. ROLFES: Okay, this is Mark Rolfes. I am back. I don't hear an echo this time, so hopefully I'll be able to go ahead and proceed.

CHAIR BEACH: Much better. Thanks for doing that, Mark.

MR. ROLFES: No problem. I'm in a little bit of a precarious setup here. I don't really have good access to my computer anymore because I'm on a phone that's on the other side of the room, so.

So anyway, Birdsboro Steel and Foundry is an Atomic Energy Commission covered facility in the 1951 and 1952 time period. And they were contracted by the Atomic Energy Commission to develop a rolling mill for the new feed materials production center at Fernald. Birdsboro did receive some small amounts of uranium, pieces of billet, and some wafers during this time period, likely to inspect the uranium metal grain-sized structure in phase because these considerations are very important when you put that uranium into a nuclear reactor.

So separate from the Atomic Energy Commission contract in 1952, Birdsboro obtained the defense subcontract and created a subsidiary called Armorcast. This subcontract building began being built in 1952, and it was

located 500 yards away from the main Birdsboro plant. This contract was for the production of Army tank hulls, turrets, and armor. The new building that was being built for this contract was a huge building. I think it was almost 500 feet in length and 400 feet wide.

This new building was built for this contract specifically to produce tanks and tank components. Because the metal that was going to go into the tanks had a unique -- a unique chemical content and they needed a different heat-treat process for the tank parts. So Armorcast needed to conduct extensive quality assurance inspections for these tanks and parts and to do that they required heat-treat furnace operators, and Betatron operators. So the evidence that we have available to us for Birdsboro is that the Betatron operations were unrelated to the uranium operations covered in the 1951 and 1952 time period.

There were also some other statements about other smaller radiography sources from a claimant's file. I think there were some radium and cobalt sources that had been mentioned. We went back to that interview that was conducted with that individual and it appears that they worked in the middle -- metallurgy department which began using those sources for radiography in 1956, which was also well after the AC uranium mill design contract.

So in summary, we believe that the Betatron operations were conducted in a separate facility 500 feet away from the main Birdsboro facility, and it was operated by Armorcast employees, and it was mostly after the time period of the AC uranium work in 1951 and '52. As a matter of fact, the Armorcast building was only nearing completion. I think it said it

was two-thirds complete in early 1954. So that's -- we believe that the Betatron exposures that were potentially received by people technically are not covered as part of the AC work because they were likely conducted for military-contracted work to develop tanks for the United States Army.

If there's any questions, I'd be happy to address any questions on the matter.

CHAIR BEACH: So remind me. This goes back to the finding that was presented back in 2019, correct?

MR. ROLFES: Yes, I believe at the time. It's been several years, I believe, so.

CHAIR BEACH: Does anybody remember, did we take care of the observations on this or -- and we just had the finding left, or? Okay, hearing none --

UNIDENTIFIED SPEAKER: This is --

MEMBER ZIEMER: I was wondering --

(Whereupon, a computer sounded multiple times.)

MEMBER ZIEMER: -- was able to access that -- that information on the Birdsboro. Kat, do you have access to that?

MS. BEHLING: I was -- I was hoping that Bob Anneckstein (ph) was going to respond to this. I know that he did not have an opportunity to --

MR. ANIGSTEIN: I -- I -- I'm -- this is Bob. I'm here.

MS. BEHLING: I'm sorry. Go ahead, Bob.

MR. ANIGSTEIN: I'm on the line. Kathy? Hear me?

MS. BEHLING: Yeah, we can hear you.

CHAIR BEACH: We hear you. Go ahead. I -- and unfortunately, that

echo is still there, so all that effort you went to, Mark, was for naught. Sorry about that. Go ahead, Bob.

MR. ANIGSTEIN: Am I -- am I audible?

CHAIR BEACH: Yes, you are.

MR. ANIGSTEIN: Now, we have not -- we didn't get -- we -- we did not get to the NIOSH response until September. We were busy with preparing for the (indiscernible), so I do not have a response. I -- I do not -- I'm not prepared to make a response. We would like to have a chance to respond to it, but not today.

CHAIR BEACH: Sure, Bob. This is Josie. Do you recall, did we -- I was trying to look back, and I found your slide presentation, but did we take care of the observations, and we only have the finding left or do you recall?

MR. ANIGSTEIN: I believe there were findings and I -- I -- I really have not reviewed it, so I hate to trust my memory from several years ago. I believe there were findings. I -- I -- I believe. I'm just speaking off the top of my head. I believe we did look over -- I was aware that there was an armor -- Armorcast facility. I spoke to one of the former workers who tried to clarify who worked there slightly later, and I believe the Betatron was in place because we have records of all Betatrons from Allis-Chalmers who is the manufacturer of the Betatron -- of all the Betatrons in operation, and I believe that it was in the '51-'52 time period when it was built, --

CHAIR BEACH: Okay.

MR. ANIGSTEIN: -- which would make sense. And then the only question is a technical issue of whether the radiographers were Armorcast employees or a Birdsboro employees, and I'd have to look -- I would have to

check all the doc -- I do not have all the documents. We did not retrieve all the documents that were cited by NIOSH now. So it's an open question. I -- I'm -- I'm not prepared to make it -- to -- to state an opinion on it.

CHAIR BEACH: Understand. So I believe there was one finding and six observations, but none of us have the background material. And, I guess, if -- if there's questions, we can ask questions, but I believe we need to give Bob the time to go through this. We also need to have the background documents loaded into the virtue vault -- virtual volume so we can review this appropriately.

Lori, is that something you can do for us?

MS. MARION-MOSS: This is Lori, yes. We will get those documents over into your folders.

CHAIR BEACH: Okay, and so the references on this latest document that Mark did, can you make sure those references are also available for reviewing this? I think that's the biggest holdup we have is the references are here, but SC&A can't review them and there's quite a few.

MS. MARION-MOSS: Yes, I'll get those as well.

CHAIR BEACH: Oh, thank you so much. Hopefully, we'll have some access soon. We'll hear about that. Any other --

(Whereupon, a cell phone sounds.)

CHAIR BEACH: -- comments or questions on Birdsboro or are the Subcommittee members okay with moving this forward?

MEMBER ZIEMER: This is Paul. I'm okay with that. I think -- my -- my recollection is that this was the principal -- maybe the only finding, the rest were observations, but --

UNIDENTIFIED SPEAKER: Yeah, that's correct.

MEMBER ZIEMER: -- but like you, I don't -- I don't have immediate access to it. But there's --

CHAIR BEACH: Yeah, I have the documents. There's one finding and six observations, but I -- EMBER ZIEMER: Right.

CHAIR BEACH: -- don't know if we handled any of the observations or not. So I --

MEMBER ZIEMER: Right. But this is --

CHAIR BEACH: -- no recollection --

MEMBER ZIEMER: -- finding of the -- the material from NIOSH is very useful and so SC&A can review that and then we can take it from there, but so we need to keep it open but appreciate the information. That's very good.

CHAIR BEACH: Okay. So we'll carry this over to the next meeting as long as you have an opportunity to review everything ahead of time, Bob.

MR. ANNECKSTEIN (PH): Yes, I certainly will.

CHAIR BEACH: Okay, so any other comments on Birdsboro before we move on? Okay, so our next topic is Peek Street and there's a slide presentation by NIOSH and then -- so NIOSH will start. I am conflicted on parts of it, because of Peek Street references Hanford, so the first part of the discussion, I'm okay with, but Paul, will you lead us through the Peek Street portion of the talk? I don't -- and if everybody reviewed Paul's -- I mean, I'm sorry, Tim's slide presentation. You'll know there's several sections to it. So the first section I can -- I'm okay.

MEMBER ZIEMER: Okay.

CHAIR BEACH: But when we get into the Peek Street template, then I'll have to ask you to take over.

MEMBER ZIEMER: Okay, we'll do.

CHAIR BEACH: Okay, great. And, Tim, are you going to present?

DR. TAULBEE: Yes. Can you all see my slides?

CHAIR BEACH: Yes.

Review of Dose Reconstruction Methodology for the Peek Street Facility

DR. TAULBEE: Okay. All right. Then I'll go ahead. And Josie, thanks for this opportunity. And you are absolutely correct, there are two components to this presentation. And the first one, I really wanted to give kind of an overview of the DR templates and -- and kind of go through a little bit of the history of them to kind of set the stage because some of our responses then will make more sense. And -- and this is kind of why we're doing this. And I know later on in the agenda today, you're going to be talking about the other DR templates that we're currently using. So I think this -- these first two bullets here that I'm going to go through I think are very timely, and then we will go through the Peek Street part, but then I do want to wrap up with a summary and -- and kind of re-emphasize some things, so I'm hoping, Josie, you'll you participate in that final phase as well.

So okay, well, getting going. The purpose of the DR methodology template is really -- the goal of these is to summarize the information to assist the processing of individual dose reconstructions, okay. The templates themselves have actually limited scope of applicability, and how they apply to the site, it really varies by site, and I'll describe that more here

in a minute.

The use of the templates usually requires professional judgment. And, you know, the Subcommittee on dose reconstruction reviews individual cases, but they discuss professional judgment a lot. So, you know, we're really feeling that this --

(Whereupon, a computer sounds.)

DR. TAULBEE: -- some collaboration with that subcommittee and this one, if you're going to be going down the path of reviewing more templates, is really needed from that standpoint. I want to emphasize to the Subcommittee, to SC&A, and to everybody that's listening, that the DR templates are not technical-basis documents.

Okay. These are not documents that have been, you know, reviewed for everything that's going through, and they're unlikely to fit the needs for all the potential claims at a specific site. So you can't think of these as mini TBDs. They are not. Okay, They are not mini TBDs. The DR templates may only apply to one claim or a small group of claims at a specific site and may not apply to all potential claims at the site.

And let me give you a couple examples here to try and illustrate what I'm talking about. When the DR template was first developed, it may have been just for admin workers, and so it may not apply to operations workers at the site at all. A DR template might have been developed for a small group of claims that were working during a short time period, and the template may not address the full operational period for -- you know, there may be other claims over that time period, or potential claims, I should say.

So the purpose and use. These were informational documents to help

process certain dose reconstructions. The general guidance to dose constructors is to use the DR templates or caution, and if a claim doesn't fit what that template is talking about, an individualized dose reconstruction is needed and will be completed. The DR template language is commonly edited and customized for a particular claim. So, again, the DR templates are routinely updated and revised as new technical information bulletins are developed, as they're revised, and -- and this is a big important part -- as the dose reconstruction is needed.

And a DR template may not be revised until it is used again, and it may just be updated on a case by case basis. You know, if they've got one claim, they may go through and manually for the dose reconstruction update the information and not update the template. It's not, you know, a one for one. The final review and evaluation or determination of whether a template is applicable and used correctly really resides with the individual dose constructionists, okay, not the template itself. Again, these are not TBDs.

So let me go through a little bit of the history of these templates and -- and how we got to where we're at. So you know, cause and origin story. In the beginning of, you know, doing dose reconstructions, there were no technical basis documents at the time to assist in dose construction. The DR report was generated specifically for the claim being evaluated. We used as much site-specific information as we could compile and include to explain how we reconstructed the Energy employee's radiation dose, okay.

Okay, at this time, DCAS Health Physicists were the ones doing these first dose reconstructions. We had a general format to write a DR report, and the goal of the report was to include enough information so that another

Health Physicist could review the report and understand how we reconstructed the dose and why we made certain decisions. So this really kind of set the outline of what these templates do. But trying to -- so you can think of these early DR reports as doing just that.

In 2002, ORAUT came onto the -- we hired ORAUT as our contractor, and we began to do it -- they began to develop technical basis documents or site profiles for the large sites, Hanford, Savannah River, Oak Ridge, Idaho, etc. And so the -- the language in the DR reports kind of shifted. There's more reliance on the individual TBDs for in -- insight, the language of the DRs, we can cite the TBDs instead of going through all of these details, and like I said, the TBDs could be referenced. And ORAUT began to process large numbers of claims, and ORAUT prioritize the sites with large numbers of claims due to the backlog that we had at the time. As TBDs were completed, more claims processed and transpired, and we were able to get more DRs out the door.

The initial focus was on large sites, and this became clear in 2005-2006 time frame. And to mitigate or to try and balance the claims processing, we hired another contractor, and this is Patel to focus specifically on smaller atomic weapons' employer sites, and this is what resulted in the development of TBD-5000 that we just talked about earlier, which was kind of the methods and tools.

And Patel also developed TBD-6000 which is primarily for uranium metal facilities. And this increased the production of smaller sites but still left the vacancies for sites that didn't just do uranium metal work, that did other things, and that we didn't have TBDs for and we didn't have TBD-6000

to cover them.

So in 2007-2009-type time frame, there was pressure to finish the first 1000 claims that had ever been submitted. And so we kind of returned to the original practice of one-off dose reconstructions to complete these early claims. So similar cases could be processed and kind of redeveloped with the help of ORAUT.

Actually, ORAUT did the bulk of this work here. I probably should have started the presentation with thanking both Mutty Sharfi and Scott Siebert for their help here. They helped redevelop the written methodology templates is what I'm calling them here. Some of these templates were written specifically to process the claims in-house at the time, okay. They were not to be broad to cover all claims at the site or anything like that. It was we've got these claims in, the first 1000, we want to try and get this claim done, what can we do. Like I said, the DR methodology could have been written as an overestimate for administrative workers, who are likely noncompensable and offered no guidance or information on operations workers or best case cases.

Initially the templates were to process small numbers of claims, but given the dose reconstruction and SEC workload at the time, it wasn't an efficient goal to try and develop technical basis documents for sites that only had a few claims. Since the 2005-2009 time frame, the number of claims has grown significantly, and in some -- at times in surprising and unusual ways due to various external influences. For example, when a special exposure cohort is designated, as SECs are evaluated, the number of claims at a particular site generally increases. The Department of Labor,

Department of Energy, and DHHS, we hold worker outreach meetings.

As the outreach meetings are held in specific areas, claims at outreach sites also increased. That's the goal of the outreach function, and it works. You know, they go to an unusual area and hold a meeting, and we get more claims there. There's also media influences. And if a member of Congress begins to inquire about a particular site and it ends up in the local media, there's increases that way. So all of these different things have influenced the number of claims that we get from particular sites, and especially for the small site, it seems to be more impactful.

Here's the number of claims using DR methodology templates by site. This is a bit dated, because, as you know, we don't really have Noctus anymore, so querying this type of information is -- is rather difficult for us. And -- and so these are -- these numbers are as of December of 2019, but I don't expect them to really have changed a great deal, at least from a proportional standpoint.

And if you look at the top four sites there, Metals and Controls, 476 claims, BWXT, General Electric, and Wah Chang, and then you can go on down the list and you see other sites. Well, Peek Street is on the next page here at 30 claims, and again, this is as of December of 2019 that I had this information available. So this is where we're at with the templates here. What we're doing moving forward is we're developing TBD is for those top four sites based upon the number of claims that I just showed you. And so that is Metals and Controls. BWXT, GE Evendale, and Wah Chang. Those four sites comprise over 50 percent of all of the DRs conducted using DR templates right now. So, you know, those four sites are the bulk of this, and

we are turning those into TBDs. We've instructed our contractor ORAUT to start that development, and they have done so.

After we complete these top four site, we're going to move to the next site on the list until we have site profiles for all sites with more than 100 claims, or .2 percent of all the claims if you want to use the percentages. I would make a note here that, you know, Metals and Controls is the top one here that we have on the list, and even that though comprises less for -- less than 1 percent of all the claims that we process in dose reconstruction.

Once we get done with all of those sites that have more than 100 claims, we're going to reevaluate whether we're going to develop additional site profiles for the site with less than 100 claims. You know, if you think of 100 claims at this time, over 20 years of this program, that comes out to about five claims per year. So these are really pretty small numbers from that standpoint, with developing TBDs. So it takes us a while to develop these TBDs, but we're going to, like I said, we're committed to do that, especially for those top four, and that -- that work is currently underway.

So before I go on to Peek Street, are there any questions?

CHAIR BEACH: Yeah. I was gonna say, Tim, Lori put out a list that had 33 templates on it with addition -- additional information on it. So you might check with her on -- I mean, your slides are great, but there's quite a few. How -- what -- what's your time line, do you think, on those top four? I know this is a loaded question, but for developing the TBDs.

DR. TAULBEEGiven our past experience, I would definitely say probably more than a year.

CHAIR BEACH: Yeah, okay.

DR. TAULBEE: -- developing TBDs. I mean, it just generally takes about a year to do the research, to develop them, and -- and get them out, get them reviewed and out the door.

CHAIR BEACH: Okay, any other questions? I don't believe we've reviewed any of the top four except for Metals and Controls with the workgroup.

DR. TAULBEE: I -- I would -- I would doubt that you have.

CHAIR BEACH: Yeah. Paul, Loretta, any comments on this?

MEMBER ZIEMER: No. The only comment and sort of a question, I think SC&A from time to time in working through their regular reviews of cases and so on, have the opportunity to use some of these templates; isn't that correct?

DR. TAULBEE: Yeah.

MEMBER ZIEMER: I mean, the templates are changing all the time, and I don't see them as being in the line of reviewing like we do a TBD. But don't they, in fact, have opportunity to look at some of these? I don't know if some of the SC&A people might add to that as well, but.

MS. BEHLING: I -- yes, this is Kathy Behling. Paul, we do have -- in fact, there's quite a few of the sites where SC&A has looked at a dose reconstruction or done dose reconstruction review. However, our tasking on the dose reconstruction reviews is to use the methodology that exists and ensure that the dose reconstructor followed that methodology. We are not tasked -- although in the past we used to get a few cases like Huntington and Bird -- I think -- I forget Birdsboro, one of the others Bridgeport Brass - ¬Bridgeport Brass, we were asked to do an advanced review.

And what that meant is that we reviewed the dose reconstruction methodology, and we included an attachment to our dose reconstruction report. And I'm just going to make a suggestion here that if the subcommittee determines that we will still go ahead and look at maybe some of these smaller sites and when you look at the number of smaller sites that exist that have less than 100 claims and you tally all those claims up, we have -- you know, I don't know how many cases -- how many cases are out there and we don't have an understanding yet because of the status is still 2019 -- but what I'm -- what I would suggest is that if the subcommittee feels that we're going to look at some of these smaller sites and look at the dose reconstruction methodology for those sites, that could stay within this subcommittee where I think it belongs from my personal opinion, and it can be done just like we when we started doing PERs.

Where the PER involved a template, I would call David Allen, he would give me -- in fact, we would sometimes -- we would have to compare an old template to a new template. And David Allen would give me two case numbers and say here's where we used the old template, here's where we used the new template, and that methodology is incorporated into the dose reconstruction report.

So using that method, you could get dose reconstructions that you're not going to be doing a dose reconstruction review; however, you're just going to look at the methodology that is embedded in that re -- that review, and you can review that methodology based on a case that was done for that particular site. Just something to think about.

MR. ZIEMER: Yeah, thank you.

DR. TAULBEE: This -- this is Tim. And that's kind of following along -- well, at least one of my thoughts here is that really looking at the individual dose reconstructions is, to me, more important than reviewing the details of the template. And that should become more clear whenever I go through the Peek Street. But, you know, what Kathy's suggesting there, you know, sounds very good to me from that standpoint, and we actually look at how that template's been implemented in the dose reconstruction and make your evaluations that way and not on the actual template itself. Putting -- if I can use those words that way.

CHAIR BEACH: Yeah, that --

MEMBER ZIEMER: Tim, that -- Tim, this is Paul again, and that's precisely what I meant when I was saying the template, if there is any kind of review, it gets reviewed implicitly when you do what was just described. So these shouldn't be, I don't think, reviewed like we would do a TBD.

CHAIR BEACH: Okay. That -- oh, go ahead, Kathy.

MS. BEHLING: No, I was just going to elaborate a little bit. But we could go into and if you wanted to specifically say at Westinghouse Electric there are 44 case claims, and let's try to select a claim that is an operator or whatever, you know, someone who potentially has a higher exposure potential and select that particular -- have NIOSH pick out one of those cases.

And then what we would do is look at --because what happens is in these dose reconstruction reports, they talk about this is the data that was used, and they give you a piece of -- it may not be the entire dose reconstruct -- or the entire template, but it gives you a piece of the template

that was used for that particular dose reconstruction. Now, if -- and I would also recommend that if we're going to do this, we select cases that have both internal and external dose associated with them. They're not just underestimates or partial dose reconstructions. But that would give the subcommittee an opportunity to see the underlying dose reconstruction methodology that is used for these various sites for that particular case.

CHAIR BEACH: Thank you, Kathy. That sounds reasonable, and I know we have a discussion -- discussion scheduled for that topic. Is that something we want discussed when we get to the template methodology?

MS. BEHLING: We -- yes, we can --

CHAIR BEACH: (Indiscernible) --

MS. BEHLING: -- try that.

CHAIR BEACH: -- decide if we're gonna do that.

MS. BEHLING: Yes, I don't want to hold up Tim's presentation here. It's just --

CHAIR BEACH: Yeah.

MS. BEHLING: -- it's something I was thinking of, and I didn't know if we were going to have an opportunity to get to these templates based on our schedule here. But I just wanted to make that comment while I had the opportunity.

CHAIR BEACH: Yeah, and that's a good comment and it gives us something to think about for sure. And definitely, I'm sure you've probably picked out a couple already. But let's go ahead and get through Peek Street and see if we can get to that to the discussion.

And Paul, this is where I'm going to ask you to take over for me, this -

-

MEMBER ZIEMER: Right. And --

CHAIR BEACH: -- portion. I'm gonna stay on but --

MEMBER ZIEMER: Good. Okay, go ahead.

DR. TAULBEE: Okay.

MEMBER ZIEMER: So, Tim, I think you (indiscernible).

DR. TAULBEE: Yes. Can you hear me?

MEMBER ZIEMER: Yes, go ahead.

DR. TAULBEE: All right. So, again, I'd like to emphasize the DR templates are not TBD. And we just had that discussion, so I won't belabor it there. And I -- I -- I like Kathy's proposal there. I had suggested to work with the DR Sub -- the Subcommittee on DR Reviews, but I like Kathy's suggestion there of evaluating these in the context of the individual DRs, and it achieves the same goal, so I won't belabor that particular point there.

I'll go right into finding 1. And SC&A's finding 1 was the assumption of 100 percent 30-250keV photons for penetrating photon energy distribution is unsupported and inconsistent with the assumptions used in the Hanford technical basis document. Well, you know, in our response, the majority of the work at Peek Street involves uranium process -- you know, uranium work, which has a claimant favorable photon energy distribution of 30-250 keV. We use this assumption throughout the entire complex anytime there's uranium work.

So like I said, it's commonly used and used across multiple sites. And SC&A's most recent response and I -- they can -- certainly encouraged to elaborate if they want, but my reading of it is they agreed with us in the

reasoning, but they believed that the basis should be better articulated in the DR template.

And this is the case with, you know, if you look at the individual DR, you know, it could have been in there, you know, some more elaboration of that, and it might not be, but that's the, kind of, context here. So I don't know if you want to, Paul, stop at each one or do -- you wanted me to go all the way through here with the next findings or whether you wanted to have a discussion with this one now, decide whether to keep it open or to close it or what?

MEMBER ZIEMER: So, basically --

DR. TAULBEE: What's your preference?

MEMBER ZIEMER: Basically, you're agreeing with the NIOSH response, but you are suggesting that you --you don't need to articulate further on it? Is that correct?

MS. BEHLING: Excuse me. Excuse me, Paul. This is Kathy. Yeah, Doug Faver did this review, and he has prepared a memo so that we do have responses to all of these findings. With -- I was going to pull that memo up and we were going to talk about that after this presentation; however, if you want Doug to -- to - - to discuss these after each finding, we can do that also. That's your call.

MEMBER ZIEMER: Okay, I think I (indiscernible) Tim's presentation and then we can we can -- we can hear the -- was it Doug that had the responses?

MS. BEHLING: Yes, yes. And he -- and he -- we have a demo to show you, so that -- that's fine. I agree.

MEMBER ZIEMER: Okay. Okay. Is that okay, Loretta, with you?

DR. TAULBEE: Yeah, that's fine with -- oh, I'm sorry.

MEMBER VAERIO: (Indiscernible.)

MEMBER ZIEMER: Okay, if that's okay, unless Loretta's objecting, I think we'll proceed, Tim.

DR. TAULBEE: Finding -- finding number 2, the uncertainty assumption of 1.3. The assumption of uncertainty factor of 1.3 is unsupported and inconsistent with the cited reference. And we agree that the current value in the template references an older version of -- of the Hanford technical basis document, that the -- and that the template should be updated to reduce the factor to 1.2 when used for dose constructions.

And, you know, in this particular case, I've got this little other thing here about impact. And, you know, if we're doing an overestimating case, this error, if you will, is simply a larger overestimate. In best estimate or underestimate cases, a Health Physicist should identify that there's a difference from the template in the current Hanford technical basis document and apply the correct value for the claimant. This is, again, a case where these templates are used as guidance, and guidance not restrictive like a TBD or another reference. And so this is a case where most likely during the DR, the individual dose reconstructor used the -- you know, the 1.2 value if they were looking it up from that standpoint.

So with that, I'll -- I'll move on to finding number 3. Neutron to photon ratio of 1.2 SC&A was unable to verify the NP ratio of 1.2 using the cited references. And this is a case where the citation value in the citation changed from that standpoint. However, we went back and we looked at

this, and for multiple reasons, we believe the ratio of 1.2 is -- is claimant favorable and still valid for Peek Street. The SC&A -¬Well, this should really read the SC&A agreement to Doug Faver, which is fine from that.

But this is another case of, you know, increasing the language in the DR report to -- or in the template is what the suggestion here is and, you know, we can do that for clarity, but really modifying, you know, the documentation -- the DR is -- went back and was using the Hanford one, they might be using -- I believe, the current value in the Hanford one is 0.8. So, you know, we believe that 1.2 is still fine from that standpoint, that there's really no impact to dose reconstructions here. SC&A was agreeing with our language.

Okay. Dosimeter LOD using -- use in the template. Dosimeter limit of detection used in the DR template is not specified in the template and a value of 50 millirem is assumed. Based on NIOSH's calc -- let's see -- assumed. Based on NIOSH's calculation is not consistent with Hanford dosimeter information.

And this is the case where the DR template has a placeholder value. It's just there to remind the dose reconstructor to -- you know, what -- what you're going to use in this time period to, you know, find a reference that is appropriate for this and to use that value. These aren't set values like in a TBD. And so when you go and review one of these, it should be reviewed in the context of that dose reconstruction and how it was used. And if a Health Physicist, you know, for whatever reason is looking at this and says, you know, there's a better -- better value over here because of what this person was working with and they can justify it and they reference it, that's

perfectly appropriate here.

Okay. Move on to finding number 5. SC&A was unable to verify the Peek Street facility annual maximum ambient dose values using cited reference.

And here SC&A found in error that we had in the template. It's a computational error. The original calculated value was -- that we have in the template is 1.550. This was -- but it should have been 1.555 rem.

However, in looking at this to try and track this particular comment down, we've decided we're going to be reevaluating the maximum ambient doses for Peek Street facility. This is kind of part of the environmental dose and, you know, when we saw the 1.555 rem per year for an ambient dose, it was like what's going on here. This is --s this is pretty high from that standpoint.

And we started looking, and they are correct. We decided that we had a editorial error here in a number, but when we look closely, this is being driven by Oak Ridge as a surrogate facility in this particular case. And during that time period, what's causing that number is actually some of the RaLa runs that were being done. So we are reevaluating this, and it may go down if we feel like there's enough information. But either way, we'll either update it to the one point -- the template to the 1.555 or we're going to be using a new value that we do from additional research and trying to pull some environmental data during that time period.

All right. Finding 6, and this is an incorrect occupational medical dose. A DR template contains incorrect information and outdated references. Well, first, we're looking at whether occupational medical doses were performed

on site. And so that's current research that's going on. And then we will update to the latest guidance. But, again, I want to emphasize that in the dose reconstruction process the Health Physicist reviews the latest guidance and uses the values from that latest guidance, not necessarily what is written there in that template. And so if OTIB-6 gets revised, that's what dose reconstructors use from that point going forward, and they may revise the template when they get to that point or they may just have one DR to do and they simply update that reference in that particular procedure and assign that new value in that dose reconstruction, and, you know, the template doesn't get revised until the next dose reconstruction gets done. So they could go either way from that standpoint.

Mixed fission product assignment, mixed fission product information DR template is, again, not consistent with the current guidance. This falls into the same category as the one above. We agree that the guidance associated with the current version OTIB-54 needs to be incorporated into the template but the you know, the dose reconstructor can do that as they're doing these DRs, which is why I really liked Kathy's idea of looking at the individual DRs from that standpoint.

And here, finding 8 is actually recycled uranium. You know, I had this presentation reviewed a lot. I went through it a lot and then this morning going through it again, I see that I didn't change the title it should read instead of mixed fission products, it should read recycled uranium. Sorry about that.

But there's -- the finding is there's no basis or reference cited for recycled uranium activity fractions from Table 5 in the DR template, and we

agree. The -- the best section on recycled uranium needs to be updated based upon the guidance in the Battelle-TBD-6000. I would like to emphasize again that I don't know that error or -- has actually propagated any, you know, since the last revision of Battelle-TBD-6000, but it would certainly -- how you would find this would be looking at individual dose reconstructions.

Observation 1: SC&A did not locate Peek Street facilities specific tool containing the preprogrammed plutonium dose conversion factors. Given the limited number of claims for Peek Street -- and that is as of 2019, there's 30 claims, so over approximately 20 years, you're looking at less than two claims per year -- there is no site-specific tool for the Peek Street facility. The template is an error in actually noting that there is one. For sites without a site-specific tool, use a complex-wide generic tool. We call it the SM Calculation Workbook. The depths of the template incorrectly references the tool, and we will definitely get that fixed when we update the template.

Observation 2, and this would be natural uranium PSL, which is physically significant lead level, in the DR template is not consistent with information in ORAUT-1997 and is not referenced. Again, this is a placeholder value and the color coding in these templates indicate when there's claim-specific PSL values that are placeholders that are to be updated during the dose reconstruction process, but, again, DRs can update other language as well. This is why it doesn't match the values in that particular citation that assume they did, which is GE 1997.

The value is actually based upon some claimant that have it listed in

their claim file, and so we feel that they're value -- there's reason to keep it the way it is currently, because in an individual's DR, they might be citing a different PSL value, so.

Again, the DR templates are not TBDs. Placeholder values are commonly used in individual -- individual dose reconstructions, and Health Physicists should be applying the correct values.

And observation 3, plutonium composition information is correct; however, the cited reference is outdated and needs updating, and we agree with this find -- or this observation that the reference is -- is outdated and needs updating. And we'll do that in one of the next revisions for the DR template. And I just, you know, re-emphasize that the correct values, you know, are -- although the correct values are used in the dose reconstruction, we do recognize the citation needs to be correct as well.

So in summary, I guess I would say if -- Josie, are you back for this?

CHAIR BEACH: Yes.

DR. TAULBEE: Oh, wait a minute. I guess I should go back up here. I'm sorry. I jumped the gun there. I should have asked Paul and Loretta, do you have any questions so far before I wrap up?

MEMBER ZIEMER: Yeah, I -- I have no questions. Loretta, where are you on this? Any questions on Tim's presentation?

MEMBER VAERIO: Can you hear me?

DR. TAULBEE: Yes.

MEMBER ZIEMER: Yeah.

MEMBER VAERIO: Okay. No, I have no questions.

MEMBER ZIEMER: Now, I want to ask Josie, do you want to go back

and cover the -- at least the first half before we hear Doug's responses on?

CHAIR BEACH: The first part of this or the Peek Street part? Which -- what are you referring to, Paul?

MEMBER ZIEMER: Well, Doug -- Doug has responses to the Peek Street part. I don't know if NIOSH has anything -- or SC&A has anything on that first part.

CHAIR BEACH: Yeah. I think the first part, we're going to cover in -- later on today. Is that correct?

MS. BEHLING: That's correct. Yeah. So this is Kathy.

CHAIR BEACH: So I think --

MEMBER ZIEMER: We could go --

CHAIR BEACH: -- we're okay --

MEMBER ZIEMER: We could go ahead with Doug's responses. Do you want us to do that today yet, Josie, the SC&A responses to these?

CHAIR BEACH: Yeah, I think we can go through those.

MS. BEHLING: This is Kathy, --

MEMBER ZIEMER: Do you still have to (indiscernible) --

MS. BEHLING: I'm sorry. Well, Josie, do you still have -¬are you still conflicted at -- at -- on this part if we go through Doug's things?

CHAIR BEACH: Yeah, I believe I am just because of the mention --

MEMBER ZIEMER: Yeah.

CHAIR BEACH: -- on that finding. I don't think I am the rest of them, but I'm not 100 percent sure, so.

MEMBER ZIEMER: Okay.

MS. BEHLING: And this is Kathy again.

MEMBER ZIEMER: Well, --

MS. BEHLING: -- is Tim finished? It seems like he still has a summary to go through.

DR. TAULBEE: I was gonna go quickly through the summary, but I think we --

MEMBER ZIEMER: Oh, yeah.

DR. TAULBEE: -- already gotten to the point --

MEMBER ZIEMER: I'm sorry, Tim. Yeah, go ahead with your summary, if you wish.

DR. TAULBEE: Yeah, okay. Well, you know, again, I wanted to emphasize DR templates are not complete

site profiles. I think you all gotten that. I've mentioned it multiple times. I won't belabor it. So thank you.

And in most cases, the template, it's important to keep in mind, was originally designed to only process a few claims. And, you know, the number of claims have grown significantly over time, and we're working to develop technical basis documents or site profiles for sites that have a large number of claims. And, you know, our general guidance and placeholder values are commonly used in these DR templates. I think you all are getting that as well and are focusing or are beginning to look at individual claims from that standpoint, which is what I was hoping I was able to convince you all to do today. So thank you, Kathy, for making that recommendation.

Like I said, how these templates are used in individual DRs is really the main measure of accuracy. And with that, I will wrap up and we can hear what Doug has to say about the -- response to our Peek Street

responses.

MR. FAVOR: Thank you.

MEMBER ZIEMER: Thanks, Tim. So, Doug, do you want to go ahead then with your -- with the SC&A responses?

MR. FAVOR: Kathy's gonna go put it on the screen for me. Just let me know when it's up, and I'll start.

MS. BEHLING: I'm working on it, Doug. Just one second.

MR. FAVOR: Well, while you're working on it, just let me say that it's my understanding that there are templates for all the sites or almost all the sites, so Hanford has a template, Mound has a template, but they also have full blown TBDs. So it's much easier to have the technical information and -- and review and look at it. In case of Peek Street and some of these smaller places, there is no TBD so a lot of the technical information is usually com -- it is contained in the -- the template.

The documents I had to work with was the DR -- the template for Peek Street and they're in a document called the dose reconstruction methodology for the Peek Street facility. And I think that was a NIOSH document from 2009. So and a lot of the same information that's in the methodology document is in the template. So when I talk about the methodology document, I mean, you understand that's a different document than the template. It did contain some more technical information than the template.

Are we ready, Kathy?

MS. BEHLING: We are ready, yes. I have it on the screen.

MR. FAVOR: Okay. Finding 1 has to do with the -- the penetrating --

MEMBER ZIEMER: Well, hang -- hang on. I don't -- I'm not seeing it on the screen yet.

UNIDENTIFIED SPEAKER: No.

MEMBER ZIEMER: I -- I -- Loretta, are you seeing it?

MS. BEHLING: Hold on.

MEMBER VAERIO: No, I'm not seeing it, Paul.

MS. BEHLING: Now?

MEMBER VAERIO: No.

MEMBER ZIEMER: No.

MS. BEHLING: Oh, boy. Is someone still -- can I share? I was sharing earlier. How 'bout now?

MEMBER ZIEMER: Yes, now I'm seeing it.

MS. BEHLING: Okay, I'm sorry.

MR. FAVOR: Okay.

MEMBER VAERIO: Now I'm seeing it.

MR. FAVOR: Okay. So for finding 1, it has to do with the penetrating photon energy distribution. And basically, they -- NIOSH gave them a very good description of why they believe that it should be 30-250keV. It's one use for fuel fabrication facilities. That would be contained in, I think, Table-618 of the Hanford technical bases document right at the top, first thing is fuel fabrication facilities. I think that's fine.

Unfortunately, what the template says is, because there's more than one photon energy distribution associated with photon radiation source terms, cannot be determined which source term the worker was exposed to, a photon energy distribution of 100 percent 30-250keV photons was applied

for missed and measured penetrating photons. So it was -- it was very -- it didn't contain the additional information about the fuel fabrication. And that's --and that is the same wording that's in the methodology document.

So when you try to verify the -- the energy distribution, you kind of fall flat in your face. So no, I think they gave a very good explanation, and I agree with it, but it probably should be documented somewhere, like even if it's in the methodology document.

Finding 2: the -- the 1.3 --

MEMBER ZIEMER: Well, hang -- hang -- hang on, Doug, just -- just hang on a second now because I -¬I wanted to determine whether we can -- Loretta and I are going to have to handle these, I think, whether we should keep this open or not. And maybe I'll ask NIOSH, what -- is there an issue on including -- this a -- they're asking that a reference be included, I guess, in the template, right? Is that --

MR. FAVOR: Well, I would -- put it someplace, either in the template or put it in their methodology document, I mean, if this is the basis that they -- they want to use.

DR. TAULBEE: Well, I mean, I -- I think we're -- I mean, we could put it in the template. But if, you know, I'm doing a dose reconstruction for a Peek Street facility worker and that particular facility worker is mentioning that they've worked at the pile, you know, worked primarily on the pile radiations, I wouldn't use that value necessarily. So, you know, I'm trying to emphasize here that the template is -- is just a guide from that standpoint.

MR. FAVOR: Okay.

DR. TAULBEE: And the majority of their work was uranium work for sure. But going into all these details, you know, it depends upon if we get a claim of somebody who did the pile, and if they didn't, you know, and we don't know where they worked the majority of their work is fuel fabrication, so we use 30¬250; it's the claimant favorable value from that standpoint.

MR. FAVOR: Okay. Well, then you put a -- I think you put notes in the -- the template for the dose reconstructor. You put a note in there saying unless the worker worked at a specific facility or depending on the worker's location, you can put a note in there, that would be an exclusion to using this.

DR. TAULBEE: Right. But my point here is that now when you start putting all these notes in there, you're now moving into a site profile.

MR. FAVOR: Okay.

DR. TAULBEE: -- not the --

MR. FAVOR: And then you put it into the methodology document that if you don't know the worker's location, then this is what you do.

DR. TAULBEE: Isn't that what the template says, if you don't know the worker's location? I thought that's what I heard you read.

MR. FAVOR: That is not exactly how it's worded in either the methodology document or the template. So I would just modify the methodology document and put it in there. Instead of saying this is what you use, you say this is what you use unless you have information on the worker's location.

DR. TAULBEE: Like I said, we can -- we can do that, but you -- the individual DRs is really where this is, as to how it should be, you know, kind

of documented here. I -- I don't want to get in this scenario where we're modifying all the templates or the methodology documents to become TBDs at this stage.

MEMBER ZIEMER: Is the -- Tim, is the 30-250 number for example, is that like a placeholder in this -- in the sense or I -- because you're saying you would only use that under a certain situation, right?

DR. TAULBEE: We would primarily use that value because the majority of their work was the fuel fabrication, but if there was indication in an individual DR that they did something else, then I would apply professional judgment and assign a different value based upon a different reference, or actually, probably use the Hanford reference for that.

MEMBER ZIEMER: And that's what you would expect the DR -- the dose reconstructor to do without having to say that, the statement; is that correct?

DR. TAULBEE: That is correct. I mean, they would make an argument as to why they used this value, or they should in the DR, why they're deviating from the template.

MEMBER ZIEMER: And Doug, what's --

DR. TAULBEE: (Indiscernible) --

MEMBER ZIEMER: -- your response to that?

MR. FAVOR: The problem with these smaller sites is there is no technical basis. So like, if this was a Hanford case, they would say the worker worked in certain facilities, and based on the information and table such-and-such, this is the energy distribution. And it's all very easy to follow. The problem is you get into the smaller sites like this, you can't go

back to a technical basis. Because really the only technical bases that -- that exists is their -- is the dose reconstruction methodology document, and it's not contained in there. So you're kind of left wondering, why did you select the 30-250keV when there's nothing even stated in your methodology other than the same wording that's in the template. So I mean, they gave a very good reasoning, but I think that needs to be captured somewhere.

MEMBER ZIEMER: And Tim, --

DR. TAULBEE: And that's what I'm saying --

MEMBER ZIEMER: -- for Peek -- it -- for Peek Street, is there -- are there -- would there be any case where it would be different from this value?

DR. TAULBEE: There could be --

MR. ZIEMER: There could be.

DR. TAULBEE: -- depending upon the claim, sure.

Mr. Ziegler: And again, then, if they de -- if the dose reconstructor deviated, he'd have to tell why; is that correct?

DR. TAULBEE: That's correct. Yes.

Mr. Ziegler: And does he need to know where the --where the 30-250 came from otherwise? In other words, does he need that reference that is asking about?

DR. TAULBEE: Say that -- ask that question again. I'm sorry, I'm...

MEMBER ZIEMER: Well, I -- Doug, I think you're asking that there be a -- some sort of reference to backup the choice of 30-250. Am I understanding that?

MR. FAVOR: Yes, because let's say that this is a dose reconstruction I'm reviewing. And the statement comes in as it's written in the template

that there are many different sources of photon radiation and we don't know which one are we exposed to, so that we assumed 100 percent 30-250keV photons. Now, let's say that's in the dose reconstruction and I read that, where am I going to go to see if that is correct? Is that the correct energy distribution?

You see? See what I'm getting at, Paul? I can't go to, say, building such-and-such and looking in a table as if it was a Hanford case. All I have is their statement that they just used this 30-250 energy distribution. Now, if they would have written their methodology document and in their methodology document, there's the statement about fuel fabrication, well, well, that's great, because that'll take me back to a Hanford document where I can see that that's the appropriate energy distribution. But if I come across a dose reconstruction without a reference, how am I going to verify that that's correct?

DR. TAULBEE: And that's where it's it should be, in my mind, specified in the dose reconstruction as to why that was -- was chosen on this case, kind of as the default for that facility. I mean, we can add this to the DR template; we can do that, okay. My point though, is, is when you start adding all the caveats and so forth, that you're turning the DR templates or the methodologies into TBDs, and that's not how they were ever intended to be.

MR. FAVOR: I understand that the templates are difficult enough to follow as it is, and you can't make them work for every situation. I understand that. I also understand that it shouldn't be too difficult to put this wording in a -- in the methodology document that already exists. I

mean, if that's the basis for the 30-250 and if there's exceptions, that's pretty simple to put in that document.

DR. TAULBEE: I -- I -- I don't disagree with you. I guess I would say I -- that where it should really reside is not so much in the template but in the individual dose reconstruction for that particular claim. That's where it should really reside.

MR. FAVOR: It -- it should at least be in there, yes. But I haven't reviewed any of those. I don't know that it's contained there or it isn't contained there or there's justification for it to be there. I don't know what's included --

DR. TAULBEE: Well, the --

MR. FAVOR: -- dose reconstruction.

DR. TAULBEE: Well, why don't we, when we get into the role of reviewing these individual dose reconstructions, as Kathy was suggesting, and in the context, these templates in the context of the individual DRs, when you run into something like that, to me, that -- that's a valid observation, you know, that hey, you didn't justify why this isn't here. And, you know, actually, I -- I'd like to know that from that standpoint. But I'm not sure that putting it all in the template is the right place to do that or in the DR methodology. That's --

MR. FAVOR: Okay.

DR. TAULBEE: -- just my opinion.

MR. FAVOR: I -- I would have just put that whole paragraph in there in the methodology and just be done with it, you know, that the facility process natural uranium, enriched uranium, but, you know, most likely

exposed to uranium during employment so we used steel fabrication. I thought that was a good justification. I would include that in there, and that takes away all doubt.

MEMBER ZIEMER: And you would include it where, Doug?

MR. FAVOR: I don't really want to put all that in the template because templates are tough enough right now.

MEMBER ZIEMER: No, that --

MR. FAVOR: -- but all --

MEMBER ZIEMER: -- what Tim was saying.

MR. FAVOR: Yes, I --

MEMBER ZIEMER: -- number in there is a default, right?

MR. FAVOR: You could put it in a methodology document just because that's more where the technical information in, I think, should be contained or the reasoning.

MEMBER ZIEMER: Well, I don't want to be at an impasse here. Tim, is that -- tell me again on the methodology documents, how specific are they?

DR. TAULBEE: They are -- I mean, I've rolled the discussion into both methodology and templates together, because they vary. And they suffer from the same issues as the template from that standpoint --

MEMBER ZIEMER: Oh.

DR. TAULBEE: -- in their limited applicability. And so, you know, they're not TBDs from that standpoint. MEMBER ZIEMER: Yeah.

DR. TAULBEE: Like I said, we can add this in there, but the real proof or the real issue is are we justifying the assumption of 30-250keV photons in

the individual dose reconstruction, such that another HP can pick it up, read it, and understand it? So it's really in the individual DRs, not the template, not the methodology document. It's really the individual DRs. That's -- that's my opinion.

MEMBER ZIEMER: And there's -- since there's no technical basis document here, if you have a default number such as the 30-250, does the dose reconstructor assume that that is the right energy range to use, unless he has other reason not to use it? Is that how you perceived it?

DR. TAULBEE: Yes.

MEMBER ZIEMER: And you don't expect the dose reconstructor then to go back and verify that that's the right range if he -- if that's the one he's using? Am I understanding that correctly?

DR. TAULBEE: I'm sorry, I'm talking on mute. What -- you know, when a dose reconstructor's doing -- you know, going through and doing the dose reconstruction, I -- I'm expecting them to, you know, evaluate -- evaluate these on a case-by-case type of basis. And so, you know, they're looking at that work that's going on that the site did and what this person did and does it match and -- and if it does, then yes, they would use that 30-250 as a default.

Does that answer your question?

MEMBER ZIEMER: Yeah. They would use that without having to go back themselves and try to find out what the underlying basis for that number was, per se.

DR. TAULBEE: That's correct, yes.

MEMBER ZIEMER: But -- but -- and -- and, Doug, is that where you --

are you having trouble with that part of it?

MR. FAVOR: I -- I -- I -- I -- I guess, I just would like to see the basis documented; that's all. I mean, I don't have a problem with what was said. Most if not all, PSF workers were likely exposed to it -- to uranium. Okay. I just think that type of statement should be documented somewhere. And if not the template, then just put it in the methodology document. And that -- that way, that's covered.

MR. SMITH: Hey, Tim and Doug and Dr. Ziemer and all, this is Matt Smith with ORAU Team. And one extra technical point on the 30-250keV photons is that particular energy range for photons gives us the highest POC result, and the document we've leaned on historically for that is the very original IREP technical document. And thanks to Scott, he let me know the SRDB number for that one is 22398. And the basis is back in the appendices where they show the POC tables. That's the reason that that particular energy range for photons is often leaned on as a claimant favorable assumption even when you may not know exactly everything you want to know about a photon source term. I just wanted to add that in as the -- another technical backstop for things.

MR. FAVOR: Oh, and if that's --

MEMBER ZIEMER: Thank you.

UNIDENTIFIED SPEAKER: Thank you.

MR. FAVOR: You could add that reference, and then it's done.

MEMBER ZIEMER: Okay, I think at this point, I -- if -¬ if -- if this -- if adding that reference doesn't essentially change what the dose reconstructor's going to do, then it's -- it's something that NIOSH could

optionally decide later if they want to add that for clarity of some sort but not have to go through a bunch of revisions. That's how I would see it right now. Loretta, give us your feedback on this.

MEMBER VAERIO: Can you hear me, Paul?

MEMBER ZIEMER: Yes.

MEMBER VAERIO: Okay. So it's -- it's -- it's a little confusing to me, but I understand what Doug is saying that it needs to be documented somewhere. I agree with that 100 percent. But it would also be in the individual dose reconstruction as a claimant favor -- favorable assumption, right?

DR. TAULBEE: That is correct. Yes.

MEMBER VAERIO: So, --

MR. FAVOR: It's claimant favorable if you include the reference to it, because just saying it's claimant favorable without the reference, there's -- there's no way to confirm that. And that's why I'm glad that we tracked down that reference.

MEMBER VAERIO: Okay. So it would be documented in the individual dose reconstruction, when it's applicable, but it also needs to be referenced in the methodology documents, confirming how the dose reconstructor came to that conclusion, is what I'm understanding.

UNIDENTIFIED SPEAKER: That's what's being asked, Loretta. My preference is that it just gets documented in the individual dose reconstruction. That -- that's my preference.

MR. FAVOR: And -- and if it's documented and referenced so that it can be tracked down, that's fine. If it's just plainly stated as it currently is in

the template and in the methodology document, that would probably get written up as a finding in the dose reconstruction review.

MR. CALHOUN: Yeah, this is Grady. Yeah, I'm not sure that -- you know, the reason we went -- we explained this early on, that these aren't technical basis documents. And, you know, the point of a finding is to -- to say that something doesn't -- is not following a current procedure.

So, I agree that all the information that's used should be, like, a stand-alone document that the -- the individual dose reconstruction should be a stand-alone document, but if we start down the road that you've got to put this reference in the methodology, then you're basically making it a TBD, and we're in the process of doing that on the larger sites, and that'll happen. But as long as the individual dose reconstruction can stand alone, that's -- that was the whole point of how we did these lower-population sites.

MS. BEHLING: And this is Kathy Behling, if I can interject. I understand both sides of this argument. The only thing I would -- would assume is that NIOSH wants to be sure that all of their dose reconstructors are doing things in a consistent manner and that they have as much information to make their job as easy as possible. So adding a few statements into this methodology just seems to me -- and -- and the other point, I guess, I'm going to make is, I -- I realize -- we may get to other findings here where we are also going to go back and forth as to what do we want to add some wording into this meth -- DR methodology.

If it makes it easier for the dose reconstruction, if it makes it so that there's consistency -- and it also appears that it's not, and -- and I may be completely wrong here, but these are not TBDs, and so they're not that

difficult to change perhaps. It's somebody goes in and makes a change, and it gets documented somewhere, but it's not something that gets published as a TBD, where you have this -- a lot of peer reviews and all of these other types of things that come into play. I don't know, I may be wrong with that assumption, but it seems like these templates would be a little bit easier to -- to modify.

MEMBER ZIEMER: Okay, --

CHAIR BEACH: Paul, this is Josie.

MEMBER ZIEMER: Yeah.

CHAIR BEACH: This is Josie. Oh, my phone's gonna die. Just a second. Let me switch.

MEMBER ZIEMER: Okay. While Josie's switching, let me make a suggestion. I -- I was hoping that we could take an action one way or the other open and close these things, but maybe we need to hear some of the others and see how -- what those look like before we --

CHAIR BEACH: Well, I -- can I make a suggestion? I know I'm not supposed to on the individual because there's some Hanford mentioned, but is it possible --¬Kathy had mentioned earlier that she was able to call -- like, was it -- who did you call? I can't remember, Kathy.

Anyway, is it possible for Doug to work with someone within DCAS or NIOSH and just go through these individually and maybe reference where that information can be found so that instead of rehashing each one of these and the back and forth where there -- there could be something between the two of them that could determine these findings? Is that -- is that something that can be done?

MR. FAVOR: Josie, I -- I don't really have a problem with their responses. I -- I think their responses were very good. I just would like -- I think the -- they're --they're -- the basis which is in their responses should be documented somewhere that's -- that's not just in some memorandum or something. It should be documented their methodology.

CHAIR BEACH: Okay. And --

MEMBER ZIEMER: Yeah. Josie, this is Paul again. While you were switching phones, I was suggesting that maybe rather than try to close on this one right now, we go ahead and look at the other ones and see how many has similar -- it -- it -- it's not really a Peek Street issue, per se. It's a methodology issue generally, I think, and that's what -- maybe we need to hear the other results that Doug has before we make a final, sort of, judgment on what direction to go.

DR. TAULBEE: I -- I agree, Paul. And I think -- but I think what Doug is -- I think our disagreement with -¬between Doug and myself is where do we document this. I am indicating that I feel that it should be in the individual dose reconstructions. Doug feels it should be in the templates or in the methodologies. And that's, to me, really what's going to affect all of these other ones, but let's go through them, and I think you'll see that pretty clearly.

MEMBER ZIEMER: Josie, I don't think it's specifically a Peek Street issue so much as a --

CHAIR BEACH: I agree.

MEMBER ZIEMER: -- methodology issue.

CHAIR BEACH: Right, okay. I'll -- I'll mute and go ahead.

MEMBER ZIEMER: Well, I think -- yeah, you can listen in, certainly.

Doug, you want to continue on through? Let's do that.

MR. FAVOR: Most of these should go pretty quick. Finding 2 has to do with the uncertainty of 1.3 versus 1.2. And this is just the difference between revision 3 and revision 4 of Hanford TBD. So, if -- if you have the -- the correct TBD, the current TBD, then you would have the correct value.

The -- the issue was when I'm looking at the template and I see the value that's in the template, and I look at the current TBD, those numbers didn't match. So -- so that's just an updated reference, and I'm sure the -¬the uncertainty would be updated.

Finding 3 on the next page, this is the neutron-photon ratio of 1.2, and once again, this is a great explanation. I reviewed the Small -- Peterson and Smalley document and, you know, the -- the Table 618 used to be in the revision 3. It's no longer in the Hanford TBD, revision 4. So the way that information exists is it exists in the actual Peterson and Smalley document, and I believe it's Table 1 of that document. But it's a very good explanation. It's not the explanation that's in -- was in the template where they reference eight different facilities.

So this is another case where I think this information needs to be captured somewhere. And I don't think you want to put all this information in each individual dose reconstruction, but whatever, wherever, and whatever wording you want to use, I think this information needs to be captured.

MEMBER ZIEMER: Okay, go ahead.

MR. FAVOR: We go on to finding 4 on the next page. That has to do

with the dosimeter LOD. I think once, again, this is a -- a -- a TBD issue. I don't believe it's -- it's anything major. It's just a matter of extent --the value is not contained in the methodology. It's not referenced in the methodology that you use the Hanford LED -- LOD values, but I assume that you would since it's Hanford dosimeter. But once again, it's just -- it wasn't reflecting the current values.

Number 5, this is the ambient dose and they -- there was already an error identified in the ambient dose, so I'm sure that'll -- that'll be corrected, and I believe they're going back and reviewed the ambient doses anyway.

Finding 6, this is the occupational medical dose. The information was not updated in the template, so it's just -- it just needs updated references.

Finding 7, same thing with OTIB-54 information. This would be updated in the current -- in a new revision.

Finding 8, recycled uranium, yeah, that just was all outdated information that's contained in the -- in the template, and so it just needs updated.

Observation 1, yeah, there -- there's no PCF-specific tool containing preprogrammed plutonium DCFs. That's fine. It's just get rid of the wording so no one tries to look for it, because they won't find it.

Observation 2, this, the PSL in the DR template is not consistent. And I understand NIOSH's response. I don't have an issue with it. I'm not familiar with PC --PSF bioassay data and the reporting practices. I -- I would like to review the bioassay information and what's reported and then how it's used. But I -- I don't think there's a big issue there. Just I'm not familiar with what's reported in the claims.

And observation 3 was the plutonium composition just needs to be references updated. But not a lot of major issues. I agree with their responses. It's just a matter of where you want to put the information.

MEMBER ZIEMER: Thank you, Doug.

DR. TAULBEE: This is Tim, --

MEMBER ZIEMER: Yeah, Tim, go ahead.

DR. TAULBEE: Yeah, you know, I'm not in disagreement with Doug as, you know, documenting these things. It's just where we document them is -- is where our difference of opinion is. I believe that we don't have a TBD for this site. All of this documentation should be in the individual dose reconstructions so that another Health Physicist can look at it and make those decisions. So -- or understand what it is that we did. That's the goal of these DR methodologies and going into those individual DRs.

So that -- that's my opinion as to where we should be documenting this stuff. And if there isn't sufficient information in there, then, you know, that's something that, you know, we -- we can work on from that standpoint. That's -- that's my opinion, is that these --¬these should be -- the documentation should be in the individual dose reconstructions, because we don't have a site-specific technical basis document.

MEMBER ZIEMER: Thanks, Tim. Loretta, any comments?

MEMBER VAERIO: I do have --

MEMBER ZIEMER: (Indiscernible) questions?

MEMBER VAERIO: -- one comment. Well, I have a comment. So if the language is -- again, and I agree with both sides, and I understand the arguments on both sides. But when we are reviewing the individual, dose

reconstructions, we have a list of references that we can go back and look at. So these methodologies, and correct me if I'm wrong, are used more for the smaller sites that don't have a technical basis document. So if the reference was in the methodology documents, and when we're reviewing these dose reconstructions, it would -- it seems like it would eliminate a lot of the confusion if we had a reference to go to.

DR. TAULBEE: Those references that are in the methodologies should be appearing in those dose reconstructions. Correct me if I'm wrong on that, and I guess I would point to Scott or Mutty as to whether that's the case there.

MEMBER VAERIO: But it goes back to --

DR. TAULBEE: (Indiscernible) --

MEMBER VAERIO: -- what Kathy said about adding the language to the methodology documents. Am I right,

Kathy?

MS. BEHLING: Yes, that's what I was suggesting. And the -- now, it may be a little bit different with these templates. We haven't looked at a lot of the dose reconstructions when there is a template, but I will say in reviewing a lot of -- 30 cases in this third -- 31st set that we're currently working on, some dose reconstructions are documented very, very well and very thorough and you understand what happened and others, it's not quite as clear. You have to dig further to determine why they did what they did or where they got their data from.

Now, maybe with these DR templates, because that template exists and there's color coding and you put things into that template, it's -- it's

more explicit, but I'm not seeing that with all of the dose reconstructions from general DOE sites.

MEMBER ZIEMER: Thank you, Kathy. I -- I want to make one comment here that I think will help us on a number of these. I believe, based on what the original presentation from NIOSH was and what Doug's response for SC&A was, that several of these, SC&A is already agreeing with the proposed updates where there's either a -- an incorrect number or there are other updates coming in some related documents.

For example, on finding 5 and 6 and 7 and 8 and I think on observations 1 and 3, I think there's agreement by all these, and they could this be put in abeyance that they, basically, could be not essentially closed, that they need to be put in abeyance. Am I right on those and possibly also with -- let's see, I --¬I said 5, 6, 7, 8 and observations 1 and 3, possibly -¬have I understood those right that we can, in essence, have those not closed but in abeyance? NIOSH has already said what their corrections will be and SC&A has accepted those corrections.

DR. TAULBEE: Finding -- finding 2 --

MEMBER ZIEMER: Was just an update.

DR. TAULBEE: 5.

MEMBER ZIEMER: Right.

DR. TAULBEE: 6.

MEMBER ZIEMER: I think -- I think 6, NIOSH said they're going to revise the template --

DR. TAULBEE: Right.

MEMBER ZIEMER: To use an updated TBD. Finding 8, --

DR. TAULBEE: 7 and 8.

MEMBER ZIEMER: -- they said they're going to update based on the TBD -- or yeah. And I think observation 1 and 3.

DR. TAULBEE: Yes.

MEMBER ZIEMER: Doug, do you agree that we're in agreement with NIOSH on all of those?

MR. FAVOR: Yes.

MEMBER ZIEMER: So, Josie, --

MS. BEHLING: -- Kathy Behling, --

MEMBER ZIEMER: -- if you're listening -- or Kathy, you might have a comment?

MS. BEHLING: I'm sorry to interrupt. So NIOSH is agreeing to make a -- to make some changes here. And so if the -- if they're making changes to these findings and observations, why can't -- am I missing something here? Why can't we include things like number 1 where we include a reference or -- or have they agreed to change --

MEMBER ZIEMER: These are -- these are changes NIOSH was already going to make and -- and Doug has said that SC&A agrees with their proposed changes. So those are easy to handle right now.

MS. BEHLING: Okay. And so is it my understanding they -- that NIOSH has agreed to make changes to the template or to the methodology for these?

MEMBER ZIEMER: Well, some of --

MS. BEHLING: The template --

MEMBER ZIEMER: -- some of its templates, some of it's the TBDs that

are referred to already.

MS. BEHLING: Okay. So there's not been any -- NIOSH has not agreed to may -- to making any changes to the methodology for Peek Street at this point on any of these other findings or observations, because if they did, why not include 1 and some of these others that we're trying to get just references put in for?

DR. TAULBEE: Yeah, well, this is Tim. You're absolutely right there. But what -- what I'm trying to emphasize here, these ones that you're talking about closing right now, these are things that, you know, you pointed out that yes, we can update the template, and we need to update the template.

I'm not convinced that we're not already incorporating those into current DRs, that we're using the most recent OTIB-6 or the most recent OTIB-54 that, you know, in our current DRs, if we had any for Peek Street right now, But, you know, something we can put into the template that's -- you know, it helps our dose reconstructors and makes sure they're using the most current, but it's not something that is, you know, critical from -- from that standpoint.

If an individual dose reconstructor goes through and all of those ones that you just listed, they make those updates themselves in that dose reconstruction, then does the template really need to be updated? No, it doesn't. We're going to do it anyway just because it is easier for our dose reconstructors, but that's an efficiency thing on our part. Okay.

The additional documentation that you're wanting with the other ones, if it's not in the template now, if there isn't a discussion about, you know,

finding 1 or -- oh, what's the neutron one, you know, those are things that we could add to the template as well. You're right, Kathy, from that standpoint, that those are modifications to it. I'm not as enamored with doing that. But, you know, they -- the dose reconstructions need to stand on their own from that standpoint.

We're not going to be referencing the methodologies. They're not TBDs from that standpoint. So, you know, if the Subcommittee, when they review these DRs, want more details, want more information, where did you get this 30-250, why did you use this, why did you use the 1.2 for -- for neutron-to-photon ratio, then that's where we need to increase their documentation within the individual dose reconstructions, not the methodologies. And the templates are just an efficiency measure from that standpoint, and we could put it there if that's the --what is desired from that standpoint. I -- I'm sorry for rambling there. I hope that made some sense.

MEMBER ZIEMER: Well, the main thing I want to do at this point, I know that SC&A would like to review observation 2, the information. They couldn't --simply couldn't find the information that was referred to, I believe. So they weren't really able to -- to evaluate the observation 2 response. And finding 1 and 3, that had to do with what you -- what you put into those two templates, but the rest of these, I think we could go ahead and -- and get them off the board in this sense by putting them in abeyance and saying yes, we all agree on that. And procedurally, I think we don't close them, but we put them in abeyance. And if Loretta agreed, I think we could recommend that and get those off the table. That's most of them. That's everything but 1 and 3 and observation 2.

MEMBER VAERIO: So, going back -- and I just need to clarify on finding number 4, Paul. Is that something that just needs an update?

MEMBER ZIEMER: I think there -- let's see, there was a value that -- maybe that -- maybe finding 4 was in the same boat as -- as 1 and 3. There was a -- I have to go back. There was some value that was not referred to or --

MEMBER VAERIO: -- dosimeter limited protection (indiscernible)?

MS. BEHLING: I have it on the screen.

MEMBER ZIEMER: Yeah, okay.

DR. TAULBEE: So the --

MEMBER ZIEMER: Oh, okay.

DR. TAULBEE: The value that's in the template is a placeholder value that, again, the -- it -- it's just a placeholder value for the dose reconstructor to look at, okay. I've got to -- you know, what is the limit of detection for this time period for this person, or, you know, using this type of dosimeter. I mean, this is another one where we can put it into the template.

We put all of these into the template. I mean, it's really not a major issue from that standpoint. But, again, the final documentation, to me, should be in the individual DR, which is where we go if it was in the template, so.

MEMBER ZIEMER: Yeah, this one would be like finding 1 and 3 then, I think, right, in your mind, Tim?

DR. TAULBEE: That's correct.

MEMBER ZIEMER: It's like -- yeah, yeah. So -- so 1, 3 and 4 are the ones that would be in the category of seeing do we need to put something in

or not, a reference. The rest of the stuff is already happening. I mean, those are other updates that had to occur anyway with -- with other documents and TBDs as well that are built into it. But other than 1, 3, and 4 --¬and I think 4 probably should be in that list with 1 and 3, Loretta, are you okay with the other ones going into abeyance?

MEMBER VAERIO: Yes, Paul, I am.

MEMBER ZIEMER: Okay. That -- that will take those off the table. Observation 2, I -- I think -- what, let's carry that forward and let SC&A review that. They need to get that information. Or is that something that we need -- you need to get from NIOSH? You don't have it yet, right, Doug?

MR. FAVOR: Correct. That would be reviewing the -- I think they cited some claims, claim numbers, in their original response, and it'd be a matter of getting that bioassay information, whatever's reported, and then looking at how it was applied. So it'd be looking at the -- the -- the dosimetry files and the calculations for those cases.

MEMBER ZIEMER: Is that something -- Tim, can we get that to SC&A?

DR. TAULBEE: Yes, I believe we can get that information to SC&A.

And then, I don't know, there -- there may be some further debate on 1 and 3 and 4. I'm suggesting that we carry those forward. Don't want to make too big a deal with this, but I mean, my personal feeling is that it seems to be working right now and it could end up being reviewed in a different way through the Dose Reconstruction Subcommittee, but I'm not -- I'm not sure we're ready to say that we'll just close it here. And Josie, if you're listening, this is -- these are -- this is not a Peek Street issue, per se. It's a -- it's a methodology for handling -- handling the templates, I think.

CHAIR BEACH: Right. I agree with you, Paul. Thank you, and sorry for dumping next on your last minute.

MEMBER ZIEMER: But what do you--

CHAIR BEACH: So that --

MEMBER ZIEMER: -- think about trying to -- do you want to get these closed or carry them?

CHAIR BEACH: No, I -- I think we should carry them and I think we need to have some -- I don't think we're gonna have time to do it today, but I think we're gonna have to do some brainstorming. I think the two -- SC&A is going to have to do brainstorming on these templates and how we move forward with them. I think there was a lot revealed today on the differences between the methodology and the individual dose re -- reconstructions. So I think that bears some thought.

Kathy, what do you think?

MS. BEHLING: I agree with you, Josie. The only, just, formality question I have here is, I'm going to put all of the findings and observations that you mentioned in abeyance, I'm going to put observation 2 in -- in progress, and then findings 1, 2-- 1, 3, and 4, do you want those open, or how would you like me to designate those?

CHAIR BEACH: Huh, good --

MS. BEHLING: (Indiscernible) --

CHAIR BEACH: -- question. I would say -- yeah, either --

MEMBER ZIEMER: (Indiscernible) --

CHAIR BEACH: -- in progress. Oh, --

MEMBER ZIEMER: They're still --

CHAIR BEACH: -- go ahead, Paul.

MEMBER ZIEMER: -- in progress, aren't they?

CHAIR BEACH: Yeah, okay.

MEMBER ZIEMER: But they're still --

MS. BEHLING: -- are they?

MEMBER ZIEMER: I think they're still in progress.

CHAIR BEACH: Okay.

MS. BEHLING: So finding 1, 3, 4 and observation 2 in progress, very good.

CHAIR BEACH: the question is what's the progress. With 2 we know what we're doing, but did you come up with a conclusion on what's going to happen with 1, 3, and 4? What's the progress, I --

MEMBER ZIEMER: I think --

CHAIR BEACH: -- guess, that's my question.

MEMBER ZIEMER: Well, I think we're carrying them forward.

CHAIR BEACH: Okay.

MEMBER ZIEMER: You're saying what's going to happen before the next meeting?

CHAIR BEACH: Yeah.

MEMBER ZIEMER: And I think -- I personally like to cogitate on both sides of the argument. I -- I -- I understand what Doug is asking for and I understand Tim's point that these templates aren't where you put all the information. They -- they -- you get to a point where it's no longer a template, it is something else.

CHAIR BEACH: Agree.

MS. BEHLING: Again, this is Kathy. If we want to go back to Josie's recommendation for these three findings, perhaps it would be appropriate for Doug to look at some dose reconstructions from Peek Street, and that may clarify or help to clarify whether this -¬this information is being documented in the dose reconstruction report and help to resolve these issues. I'm not sure at this point. But Doug prob -- can better answer that, maybe.

MR. FAVOR: Yeah, this is Doug. It -- it's not a Peek Street issue. If you're going to be looking at more templates or whatever going forward, it's going to come up again. In which case, you might want to just keep them open. Because it's going to come up again, where you're going to have insufficient information contained in the template that really -- you know, it doesn't really contain the basis for what's stated there.

MEMBER ZIEMER: Peek Street's a good one to use because there is not a TBD for it.

MR. FAVOR: That's why I think there's a lot that there isn't -- there aren't TBDs for. That's what I mean, I believe it's going to come up again, if you're going to look at more of these smaller sites.

MEMBER ZIEMER: Yeah. But I think to resolve this --

UNIDENTIFIED SPEAKER: This -- this --

MEMBER ZIEMER: -- we've got to do it -¬

UNIDENTIFIED SPEAKER: Let me just add one thing here.

MEMBER ZIEMER: You've got to do it within the framework of Peek Street. I don't --

MR. CALHOUN: This is Grady. Can you --

MEMBER ZIEMER: -- think --

MR. CALHOUN: -- hear me?

MEMBER ZIEMER: I want -- go ahead.

MR. CALHOUN: Yeah. I just -- you know, something we need to stay focused on here is that, you know, our main goal here is to make sure that our DRs, our dose reconstruction people have the tools necessary to do an accurate dose reconstruction and come up with an accurate compensation decision. Going back and forth and deciding where and even if those guidances are in a specific document is -- is something that, you know, we just have to make sure works on our side. It's -- you know, we're not going to go forth and change our methodologies and TBDs just so they're easy to audit.

You know, if we have some findings that show that tech -- that the dose reconstructions are incorrect, fine, we'll need to fix that. But we really shouldn't have a finding that says you need to change your document to make it more easily auditable. If there's an error, yes, I agree. So I'm all for to having this discussion, but I'm not going to be too open to just responding that yeah, okay, we're going to change our -- our technical basis documents or methodologies or whatever just to make it easier to audit. I don't mean that the sound as terse as it does, but that's really our position, and it always has been.

MEMBER ZIEMER: Yeah, and I wasn't suggesting that at all. This is Paul again. I'm -- and I -- I just wanted to say, even though there may be, on this particular --particular issue that brought this up, such as finding 1 -- although there may be other sites where this could be an issue, I don't

think we want to solve finding 1 for Peek Street by looking at other facilities. The finding is a Peek Street finding, and so if -- if Doug needs to look at a couple of cases to see how the -- how the template is used, that -- then that should be for Peek Street for this issue.

Doug, are you following my point here?

MR. FAVOR: Yeah, it -- my concern, though --

MEMBER ZIEMER: You know, even --

MR. FAVOR: -- dose reconstruction and it has the same wording it does in the template about the 100 percent 30-250keV photons, but there's no -- no basis is given, it's just stated that this is what it is, well, I --

MEMBER ZIEMER: But there is -- yeah.

MR. FAVOR: And I can't verify that that's correct, because it's not -- the basis isn't provided, and there's no basis document for it. But if it was --

DR. TAULBEE: I -- I think --

MR. FAVOR: -- based on the -- if it was based on the

fuel fabrication, well, that gives me something to go back and look at and say yes, that is correct. But if it's not, then we're not going to be any farther ahead.

MEMBER ZIEMER: Again, is it -- do the -- do the dose reconstructors have to verify what NIOSH has already determined to be the value?

MR. FAVOR: I -- I guess I don't understand how the dose reconstructor can verify that that's the correct energy distribution if there is no basis provided for that energy distribution.

DR. TAULBEE: I -- I think it's important to go back and look at the individual dose reconstructions here. This is Tim again. And -- and how,

you know -- there's likely to be some language in there about claimant favorability as an overestimate. There's possibly information in there about because of them working as a fuel fabricator, you know, working directly with uranium, this is what we assumed from that standpoint. And so the individual dose reconstruction is where you need to look, and I agree with you, Paul, I think it is -- would be valuable for SC&A to look at those. And if they have comments of saying hey, this isn't clear, then -- then that's -- that's a discussion worth having from that standpoint, on the individual dose reconstructions in the context of these templates.

CHAIR BEACH: So I suggest that we do that.

MEMBER VAERIO: Okay. And 134 -- I mean, 1, 3, and 4 and observation 2 will remain in progress for now, correct?

CHAIR BEACH: Yes. And those are the ones Doug will get individual cases for. This is Josie again, sorry. I keep forgetting to say who I am. Yes.

MEMBER VAERIO: Right. And just as a reminder, I keep seeing this court reporter lift her hand. I think we need to remember to identify yourself. Thank you.

CHAIR BEACH: Thank you. This is Josie again. Are we done and ready to move on?

MEMBER ZIEMER: Yes.

CHAIR BEACH: Okay, boy, we still have that echo, but we're going to work through it. So we are at the time when we have 15 minutes left, and Kathy, I think we're going to have to carry over everything left on our agenda, with the exception of preparing for the December meeting. Are you

in agreement with that?

MS. BEHLING: Yes, I am.

CHAIR BEACH: Okay. Everybody else okay with that? So we do have a handout with documents listed. Yes,

Kathy sent that out. So Kathy, I'll turn it over to you and then we may be -- we'll be able to pick another meeting date after --

MS. BEHLING: Okay.

CHAIR BEACH: -- you get finished here.

MS. BEHLING: Okay, yeah, this is Kathy, and I have updated this to include those documents that were closed during the last Advisory Board Meeting, and then I reshuffled everything. And so on page 1 at the top, the very first one is OTIB-14 and Lori Marion-Moss and I talked that that should maybe be discussed with OTIB-52. However, when I went through the transcripts initially it was -- they tried to connect it to OTIB-52, and it was determined it really doesn't belong there. It's not a construction trade issue. And so I think that if it's one finding, I think that could be very brief, and that could be one that we do present to the Board. That's my first suggestion.

The next two on the list, the PROC-2 and PROC-77, they each have three findings. That, I think, could easily be included. And then we can move -- let's move to page 3. I want to start with the PER 47, Grand Junction. Now the -- there are three or there's actually several PERs in a row there. There -- the PER 47, PER 3 and PER 5, I think we could definitely include those. The only thing with the PERs, sometimes they're a little bit more complex because we do the subtasks 1 through 3 and then we do the

case review, and so they take a little bit longer. But I would definitely think that that could -- those three PERs could be included, and perhaps even the Huntington pilot plan.

The other thing I do want to make mention of, a couple of things came to my mind as I was going through this. If we go back to page 2, we have OTIB-6, second from the bottom listed as something that could be presented to the Board, but I don't think so. One of the things that I have to say I should not have --

MEMBER ZIEMER: Kathy. Kathy. Kathy.

MS. BEHLING: Yes?

MEMBER ZIEMER: Do you know you're -- your page --¬you weren't showing up on the screen if that -- if you were --

MS. BEHLING: Oh.

MEMBER ZIEMER: -- intending to.

MS. BEHLING: Yeah, no, I --

MEMBER ZIEMER: You're --

MS. BEHLING: -- up on the screen. I am not sure that this was PA cleared. It probably could be so --

MEMBER ZIEMER: Oh, okay.

MS. BEHLING: Okay. I'm sorry. I -- I'm just showing you. I hope you have the document in front of you. Just --

MEMBER ZIEMER: Well, the -- the copy I have says it's PA cleared.

MS. BEHLING: Oh, okay.

MEMBER ZIEMER: Is this the -- wait. This is your list of approved documents?

MS. BEHLING: Yes.

MEMBER ZIEMER: Reviews?

MS. BEHLING: Yes, it is.

MEMBER ZIEMER: A 5-page document?

MS. BEHLING: I think --

MEMBER ZIEMER: STRP-approved document review. It's --

MS. BEHLING: Okay, let's --

MEMBER ZIEMER: -- or is that just the title? That's just the title maybe --

MS. BEHLING: (Indiscernible.)

MEMBER ZIEMER: No -- no, my -- my -- my email says it's -- or my documents says --

MS. BEHLING: Here. Here it is.

MEMBER ZIEMER: -- PA cleared.

MS. BEHLING: I'm sorry. Let me pull it up, okay? All right.

MEMBER ZIEMER: Yeah.

MS. BEHLING: Just -- all right, just one second and yeah, then we'll go through this. I apologize. I guess, I'm worried about the time here, so. Okay. (Indiscernible) --

MEMBER ZIEMER: I wasn't sure everybody had it (indiscernible).

MS. BEHLING: Yeah, I apologize. Are you seeing my document now?

MR. BEHLING: Yes.

UNIDENTIFIED SPEAKER: Yeah.

MS. BEHLING: Okay, very good. All right. And as I made mention, this OTIB-14, I believe we can discuss this. It was one finding. That should

be brief. Also, this PROC-2, there are three findings. This is a much older document and just something that needs to, you know -- we will need to go through with the Board. Same with the PROC-77. Again, we reviewed this back in 2005 or 2006. I'm sorry. It's an older document, and I think we could get this off the list.

I then moved on to page 3. I -- I don't want to include Report 5 yet because for some reason, it stays in the back of my mind that David Allen was going to look into the Monday morning sampling thing, and I want to be sure that that is really ready to be completely closed. And so I want to go on to PER-47, which is Grand Junction, and there were four findings.

PER-3, this is an older one also from Bethlehem Steel, four findings. PER-5, that, I think, can be done. And as I said, it's just the PERs sometimes take a little bit longer to go through them and explain, but I think we could certainly do that.

And if you want to try to include -- if you want me to try to include PER-25, which is a Huntington, I can certainly include that in the list. I just wanted to take you back because OTIB-6, we had some editorial changes that we would need -- that need to be done and NIOSH agreed with that said yeah, there are things that need to be changed in this document. And so I really think those should be put into an in abeyance status. And they weren't included as an observation or a finding. They were simply just tacked on at the end of this review.

And I'm -- apologize for doing things that way. I -- I just think it's important to keep track of everything. And so I would like to keep this open and put those -¬and there were several of them -- put those in abeyances

on the next temporary BR -- BRS Matrix, if you agree?

CHAIR BEACH: This is Josie.

MS. BEHLING: Or are you okay with that?

CHAIR BEACH: Yes, I agree. Yes.

MS. BEHLING: Okay. All right. So the other thing that I would like to do before the next meeting is those that I have marked as not suitable for a matrix, I have to go back and refamiliarize myself as to why I put them in that category and how we can best go about presenting these to the board. I think the reason is there was a lot of discussion on some of these that we may need to go back into -- into transcripts. And I may need to be more elaborate in how we resolved some of these issues, because I think the Board will be interested in that.

So it may not fall into this more -- category of just summarizing it into a matrix. It may have to be, you know, actual tran -- transcript discussions and that type of thing. That's what I recall. But I thought that if you'd like for the next meeting, I may be able to give you more information on what we may need to do to present those not suitable for matrix comments, ultimately get those in -- presented to the Board. Is that something you'd be interested in?

CHAIR BEACH: Yeah. This is Josie. Yeah, I think that's a good idea, Kathy.

MS. BEHLING: Okay. All right. So, what I'm recommending then, is -- or I -- I'm suggesting is that we could do -- let's see -- one OTIB, two PROCs, and, maybe, let's say four PERs. That -- that sound like enough or too much or should I put -- start putting a presentation together, and you

can make a decision or if I -- if it gets too lengthy, I can contact you and we can make a decision thereafter?

CHAIR BEACH: Yeah, I think that's a good way to do -- I mean, we've gone 65 and 80 slides. So let me just recap to make sure. This is Josie. I have OTIB-14, 002, 77, and then onto page 3, 47, 003, 005, and 25. Did I miss any of them?

MS. BEHLING: No, that's correct. That's what I'm suggesting.

CHAIR BEACH: Okay. Yeah, I -- I think that is -- is a good start.

MS. BEHLING: Okay.

CHAIR BEACH: Paul, Loretta, comments?

MEMBER ZIEMER: I think Kathy has a better feel for how long those would take. And as -- as she suggested, as -- as she puts it together, you can measure it against the presentation last time. There -¬ it's a -- it's a lot of -- I think last time was a lot of information from -- for some of the Board members.

CHAIR BEACH: Yeah.

MEMBER ZIEMER: I'm still hearing that echo, but anyway, and certainly don't go any longer than that, and you might want to think about even going shorter because I think we had some comments from some Board members that it was -- it was -- they were reaching the saturation point. If -- if it's a new stuff that people, it's very different to (indiscernible) workgroup and (indiscernible) --

CHAIR BEACH: Paul. Paul?

MEMBER ZIEMER: Yeah?

CHAIR BEACH: You're fading.

MEMBER ZIEMER: Okay, well, I think it's my phone that's fading. I don't know that I'm fading, although it may be both. Anyway, I just -- just be alert to the time. We had some Board members that were concerned there it was too much last time.

MS. BEHLING: Yeah. Okay.

CHAIR BEACH: Yeah, I -- this is Josie. I think -- I'm sorry, Kathy. I think we did have that comment the very first meeting when we went over these, and then we explained what we were trying to take care of, background. And I believe the last meeting, we didn't, but I do agree we did on the very first meeting with the 87 slides.

One comment I have on this is we did have questions on 49 that was presented. It was part of our agenda today that we didn't get to. So Kathy, if you would, make note of that in your presentation that we are addressing that question so that it's not -- so the Board member that asked the question doesn't think we just forgot about it.

MS. BEHLING: Okay, very good.

CHAIR BEACH: Does that make sense?

MS. BEHLING: Yeah, it -- it does. I assume you do not, at this point in time, want to share the, you know, memorandum that I put together with them, we'll just discuss that next time in the Subcommittee?

CHAIR BEACH: You know, and I'm -- I guess that's up for debate if we share it or not. It -- it tended to add more questions to it, to me. I wanted a chance to discuss it in --

MS. BEHLING: Okay.

CHAIR BEACH: -- the Subcommittee. So Paul, did in -- did you and

Loretta get a chance to look at the PER 49, the answer to that question?

MEMBER ZIEMER: Let's see. PER 49, and I guess I didn't. I'm looking at my note here.

CHAIR BEACH: Yeah, it was a follow-up to the significant increase in internal dose. And it was a very good write-up, it just -- it was lengthy.

MS. BEHLING: Yeah, I -- I actually agree with you, Josie. I think that this is something that we may want to just carry over into the next Subcommittee meeting and not -- and not add this to the Board meeting yet. We're not there. We're not ready for that yet I don't think.

CHAIR BEACH: Yeah, but I do want to make mention that we are addressing it and we --

MS. BEHLING: Okay.

CHAIR BEACH: -- just ran out of time. So if you could just make a note of that maybe before you start so that we don't detour questions, because --

MS. BEHLING: Okay.

CHAIR BEACH: -- we're not answering them.

MS. BEHLING: Yes, I will do that. Very good.

CHAIR BEACH: Thank you. Okay, so I know we're coming to the end. Rashaun, can we go ahead and book another meeting?

DR. ROBERTS: Sure, sure, we can do that. Probably looking at about --

CHAIR BEACH: January?

DR. ROBERTS: Yeah, I would say to be safe. Let's do January. January, sorry.

CHAIR BEACH: Actually, if it's -- this is Josie. I'm -¬

DR. ROBERTS: Go ahead.

CHAIR BEACH: -- gonna be gone from the 13th till the end of January. So if it's not at the first part of January, then we'll have to look into February.

DR. ROBERTS: Yeah. Probably that first week of January is pushing it, so why don't we look at February. But is there a particular week that works better for you for Wednesday or Thursday?

CHAIR BEACH: Any -- anytime the 13th on, I'm fine. And Wednesday, Thursday. I like -- I kind of like Thursday If everybody's in agreement, the 16th or the 23rd?

DR. ROBERTS: Paul and Loretta, are you guys available for those dates? Does one worked better than the other?

MEMBER VAERIO: Thursday works better for me. This is Loretta.

CHAIR BEACH: The 16th or --

DR. ROBERTS: It's the 16th or --

MEMBER ZIEMER: Well, the --

DR. ROBERTS: -- the 23rd.

MEMBER ZIEMER: Yeah. And I'm showing a Board meeting on the 15th, right, a teleconference, February 15?

CHAIR BEACH: Yeah.

DR. ROBERTS: Yeah, that's --

MEMBER ZIEMER: I'm okay on the 16th if that's -- what was the other date?

CHAIR BEACH: The 23rd.

DR. ROBERTS: The 23rd.

MEMBER ZIEMER: The 23rd, yeah, that's okay.

MEMBER VAERIO: Either day -- either Thursday works for me.

MEMBER ZIEMER: Same here, either one.

DR. ROBERTS: Josie, do you want to go with the 23rd?

CHAIR BEACH: Sure, we can do that.

DR. ROBERTS: Okay. Actually, in -- in looking at my schedule, the 16th might actually be better. Sorry about that.

CHAIR BEACH: Nope, that's okay.

DR. ROBERTS: Okay. So February 16th starting at 11:00 am. Eastern again.

CHAIR BEACH: Yeah.

DR. ROBERTS: Okay. All right. Well, I have tentatively got that down.

CHAIR BEACH: All right. I think we can close unless there's any other business that you believe needs to be discussed. We might think about a longer time frame. We didn't get through half of our agenda today.

DR. ROBERTS: Uh-huh. Yeah, we can certainly do that. What time would you like? Would you want to go until 5:00?

CHAIR BEACH: Yeah, at -- 4:30 or 5:00.

DR. ROBERTS: Okay. Let's do 4:30.

CHAIR BEACH: Okay.

DR. ROBERTS: Okay, great.

CHAIR BEACH: Great. Thanks, everyone.

MEMBER ZIEMER: Okay, thank you.

(Whereupon, the meeting was adjourned).