The Work Group convened telephonically at 1:30 p.m., Eastern Daylight Time, Josie Beach, Chair, presiding.

PRESENT:

JOSIE BEACH, Chair
BRADLEY P. CLAWSON, Member
PAUL L. ZIEMER, Member
ALSO PRESENT:

TED KATZ, Designated Federal Official
ROBERT BARTON, SC&A
MEL CHEW, ORAU
JOE FITZGERALD, SC&A
KARIN JESSEN, ORAU
JOHN MAURO, SC&A
ROBERT MORRIS, ORAU
JIM NETON, DCAS
L. MICHAEL RAFKY, HHS
BILLY SMITH, ORAU
DON STEWART, ORAU
JOHN STIVER, SC&A
TABLE OF CONTENTS

AGENDA ITEM                               PAGE

Welcome and roll-call                     4

Tritides                                  5
NIOSH/SC&A

83.14 status update                      62
NIOSH

Status update from NIOSH on Site          63
Profile issues

WG recommendations                       66
1:32 p.m.

MR. KATZ: This is the Advisory Board on Radiation and Worker Health Mound Work Group, and let's do roll call.

(Roll call.)

MR. KATZ: So, then, the agenda for this meeting is posted up on the site along with the one paper that is being discussed, which is a paper prepared by NIOSH in response to a set of issues prepared at the last Mound Work Group meeting.

And, Josie, it's your call. Let me just remind everyone when you are not speaking, please mute your phones. If you don't have a mute button, press *6 and then press *6 again to come off of the mute. And please don't put the call on hold at any point, but dial back in if you need to leave.

Thank you.

And it's yours, Josie.

CHAIR BEACH: Thanks, Ted.
So the main focus of this meeting is the tritides and, of course, as Ted mentioned, the tritides paper that came out on August 22nd.

It's a two-hour call. If we have time, NIOSH was just going to report out on the 83.14 that will be discussed at the next Board meeting and then just a quick status on the profile issues that we discussed in our June meeting.

Jim?

DR. NETON: Yes?

CHAIR BEACH: On the tritide issue, if you remember, there were four items --

DR. NETON: Yes.

CHAIR BEACH: -- covered under tritides. And, Jim, I'll let you go ahead and go over your paper, if you would.

DR. NETON: Sure. Yes. I will be happy to provide a summary. Everyone should have a copy of the paper that was issued, I
think, August 22nd. It was fairly narrow focused. It addressed the four issues that were raised at the Working Group meeting on June 5th.

I looked, and a copy of our responses is also out on the website. If people don't have access to them, they are available under the Mound Working Group meeting scheduled for today.

So the first issue was to address the treatment of uncertainty in the tritide model, which included a couple of things. One was the use of the 50th percentile versus the 95th percentile in the distribution and also to address some of the ranges of uncertainty that SC&A put forth as possible issues to what are the upper bounds of the exposures.

The first issue that I'll say, you know, we have changed our position, as I indicated at the last meeting, on how we're going to use this tritide model. And the intent now -- and I think it is fairly clearly
indicated in the paper -- is to use the 95th percentile of the distribution of the smear samples.

So that's what we're doing. So we don't have to worry about the discussion of the 50th versus 95th. We're just going to use the 95th. And, actually, we're going to use the 95th because it takes care of some of the issues regarding uncertainty.

There are some of these uncertainties that we just can't get our complete hands around. So that we'll just go with the upper values.

I would say that if the model is accepted. The uncertainty of what values are actually used in the input model, in my opinion at least, do become Site Profile issues. I would like to talk about a couple of the issues that SC&A raised regarding uncertainty. That was their main conclusion, that the two drivers in the dose calculation that impact the upper limit were the choice of
the resuspension factor that we chose and the use of the dose conversion factor.

I went back and looked at the NUREG/CR-5512, regarding the resuspension factor. And at one point, SC&A was suggesting that we increase the value of the resuspension factor because it is not appropriate, increase it by a factor of five, because it was not based on removal data but on surface contamination measurements.

In my review of that document, though, the parameter was assumed to describe loose contamination. And that's the 5 times 10⁻⁵ and that the licensee could use a factor less than that if it's less than that at their facility.

The other point I would like to make regarding the resuspension factor is that we are applying what I would call a chronic resuspension factor versus an acute resuspension factor. And, in doing so, we will assume that a worker has been in an
environment with that resuspended material for
their entire work year, not just the times
when they are there.

So the material is not only
resuspended on a continuous basis but that the
worker is continuously in that area. We think
that that justifies the use of the
resuspension factor, particularly considering
that we're using the 95th percentile value.

That briefly summarizes what we're
trying to say in response to 1). I don't know
if we want to stop after each point and
discuss.

CHAIR BEACH: Yes. Jim, this is
Josie again. Yes, let's stop after each point
and let SC&A weigh in and any questions from
the Board Members.

MR. FITZGERALD: Yes. You know,
this is Joe. I think John may want to comment
on the resuspension issue. That was one that
he spent some time thinking about.

But yes. I think the Work Group
has to remember the context of the concern that we raised when we raised the question of uncertainties. You know, this was during the almost year-long debate over exposure potential, and certainly was some concern that -- certainly it seemed like there was some question about whether it was negligible or not.

And the context of raising these parameters is that the value that one can derive is going to be variable to some extent. And that was an argument for being careful about ascribing negligibility to something like that, but it has been made moot certainly by the last Work Group meeting, where it was pretty clear that, as Jim pointed out very much in the last meeting, that this is clearly a dose reconstruction methodology. There's no question there's exposure potential. And certainly one can take that as the context of dealing with these uncertainties.

At the time, though, the concern
was you had these uncertainties and theoretical model, but, yet, we're questioning the use of that model as a basis for whether exposure took place.

So, anyway, I just wanted to make sure that backdrop -- you know, we had a yearlong discussion. And we arrived at this discussion with certainties in that context.

John, you might want to say a few words, I think, on the resuspension factor. I know that was your specific --

DR. MAURO: Yes. I would be glad to. I am fine with Jim's answer. The reason I feel that his position is reasonable is really, I brought up this question of removable versus total.

Since you're taking swab samples, in effect, what you are really measuring in terms of dpm per meters squared is the removable contamination and not the total contamination.

So I mean, in principle, one could
argue, well, since you're looking at the 
removable contamination -- and all of the 
literature on resuspension factors, well, is 
primarily based on -- well, it's based on, 
really, a lot of data, some of which was 
removable and some of which wasn't. So I want 
to just raise that as an area of possible 
sensitivity.

However, in the grand scheme of 
things, 5 times 10^{-5} is a great number. And, 
as Jim pointed out, especially if you're going 
to assume that it's operating at that level 
continuously and you're working at the 95th 
percentile on the smear data, so, as far as 
I'm concerned, I withdraw that comment. And I 
agree that the number of 5 times 10^{-5}, which I 
believe is a value that has been adopted in 
the new approach, is certainly adequately 
claimant-favorable.

CHAIR BEACH: Okay. This is Josie 
again. Thank you, John.

Board Members, any
MEMBER CLAWSON: Josie, this is Brad. I just had one question. I was kind of getting a little bit confused of who was going to get this and who wasn't. In NIOSH's proposal, is it everybody that is going to get this or is it -- because I remember we were cutting out certain individuals that -- the so-called ones that we knew had gotten an awful lot -- who is this going to be put towards?

DR. NETON: Brad, this is Jim. The idea, the concept, is that workers we know were directly manipulating the source material, their urinary bioassay results would be treated as if they had inhaled highly insoluble tritide, SMTs. And so they would be provided a very high lung dose primarily.

MEMBER CLAWSON: Okay. So this would be one that would have the tritium bioassay or have you talked in just 11 or 12 that were working directly with this all of
1 the time?

2 DR. NETON: No. The ones who were
3 working directly with material would be
4 assumed to have inhaled tritide, a stable
5 metal tritide.

6 The other workers, who were on
7 tritium bioassay because if you work in the R,
8 one-quarter of the R building or the SW
9 building, you were on a routine tritium
10 bioassay program, those workers who have
11 tritium bioassay would be assigned the dose.
12 We would use the resuspension model from the
13 smear data and assume they inhaled tritides
14 from that source term or we would look at the
15 bioassay data and see what the dose would be
16 if they just inhaled soluble material and
17 picked the higher of the two scenarios.

18 But the bottom line is anyone who
19 was monitored for tritium would be assigned a
20 dose depending on whether you worked directly
21 with material or you were what I would call a
22 support or ancillary worker.
MEMBER CLAWSON: Okay. You know, we have talked back and forth. And I apologize, but we have been back and forth so many different ways I wanted to make sure I was completely understanding who was going to receive this and how it was going to be done. I appreciate it.

DR. NETON: Okay.

DR. MAURO: Jim, can I follow up on that a little bit? I have to make sure I understand. Let's assume we've got a worker, he's not actually working with the tritides and glove boxes and doing that kind of work, but he is there after those activities are completed.

DR. NETON: Right.

DR. MAURO: And he's working now in an environment where there is tritiated water, which is by far the dominant form of tritium. We all understand that.

DR. NETON: Right.

DR. MAURO: But there could also
be surfaces contaminated with tritides.

DR. NETON: Right.

DR. MAURO: Okay? And now he's working there and you collect his urine sample and you analyze it. And you see a certain amount of tritium in his urine.

I guess what I was thinking -- and correct me if I am wrong -- is that that person then -- you could say, "All right. We know what the tritium level is in his urine. And we're going to assume that that's a result of inhaling or absorbing tritiated water." And reconstruct the doses to the organs of concern on that basis.

But since he's working in an environment where there is also potential for residual levels of tritides, you should add that; in other words, especially if it's a respiratory tract.

DR. NETON: Yes. That was a comment that was raised that Joe put over in an email earlier in the week.
DR. MAURO: Yes.

DR. NETON: I don't know if you had a chance to look at my response.

DR. MAURO: I did, and I have to say I didn't understand it.

DR. NETON: Well, the idea is that the excretion of tritium in the urine -- anything that becomes systemic is going to -- anything that gets into the bloodstream will become incorporated in systemic organs. So if you have a chronic model that you're estimating a certain level of tritium coming out in the urine based on an equilibrium situation, which is what the chronic model would be, then the dose to systemic organs is whatever is in the bloodstream and getting out in the urine. It doesn't matter whether it came from inhalation of soluble tritium or it's contributed to that small fraction that's just coming off of the tritides.

DR. MAURO: The place that I feel that you might be selling this person short is
if he has a respiratory tract cancer. Then --

DR. NETON: Oh, no. If you have a respiratory tract cancer, then the tritide model would give you, this SMT model, would give you -- maximize the lung dose.

DR. MAURO: Stay with me. So if a person has a respiratory tract cancer and, in theory, he has tritium in the urine -- now, any tritium in the urine that you see for this person, as you said, it could be from two sources: one from the tritiated water vapor he inhaled; and also from any tritides he inhaled that were broken up and, of course, cleared. But we know that that contribution to the tritium that's in the urine is going to be minuscule. And so he may very well have inhaled some tritides. And he's got a respiratory tract cancer.

Now, if you assume all of the tritium that is the exposure he experienced was entirely from tritiated water, you look at his urine, the reconstructed dose to his
lungs, in this case because it's a lung cancer
and you get a lung dose from the inhalation of
tritiated water based on the bioassay samples.

But I'm saying, but wait a minute.

This very same person could have inhaled the
resuspended tritides, you know, from the
swipe. And he's getting both. That's what
I'm getting at. He is probably -- and the
bioassay sample is not going to give you any
information on what exposure he may have
experienced from inhaling tritides. It's not
going to help you with that.

The only thing that will help you
reconstruct his lung dose from any possible
tritides from resuspension that he might have
gone is by using your resuspension model for
tritides --

DR. NETON: Yes. Well --

DR. MAURO: -- unless I'm not
thinking about this right, but that is what
seems to make sense to me.

DR. NETON: Only for the case of
lung cancer, which -- well, prior to 1980, they're presumptives. It's a presumptive cancer and it's covered already. But there may be circumstances where a person with lung cancer wouldn't qualify based on date of employment or something like that.

But you have a point. I have a feeling that the dose would be pretty small for the lung from the tritium intake.

DR. MAURO: Yes, from the tritiated water, absolutely.

DR. NETON: I mean it would be very small. And I highly suspect that the dose would be much larger from the tritide intake.

But under that scenario, you are right. And that is worth addressing. I agree with you. I don't think that the suspended organ doses should be added.

DR. MAURO: Oh, I agree. Yes.

This is --

DR. NETON: Okay.
DR. MAURO: The only reason I raised the question was specifically for the respiratory tract cancer.

DR. NETON: I think you have a point.

MR. FITZGERALD: And I think, you know, as we all agree, you know, we see an implementation detail. So it's certainly something that can be considered but wouldn't be necessarily holding up the SEC consideration.

DR. NETON: Agreed.

COURT REPORTER: This is the Court Reporter. Who was just speaking, please?

MR. FITZGERALD: Oh, I'm sorry. This is Joe Fitzgerald.

Josie, I guess where we end up on this thing is putting the -- you know, we did express some concerns or at least I expressed some concerns about the, if I can call it, philosophical plausibility, you know, whether one ought to adopt a model in the absence of
actual site monitoring information for the tritides and use this, certainly the tritium. But we have gone through that in quite a bit of detail. And, really, it's not germane to what we are talking about here. That's something for the Board to deal with as they have dealt with in the past.

But beyond that, I think, as I said earlier, this is no longer a test of exposure potential, which was our biggest concern about having reliance on a model with these variables. I think certainly there is no question these are proven variables. The methodologies have been out there. And NIOSH has adopted a conservative, you know, value for these variables.

So I think we're fine with this as it stands right now.

CHAIR BEACH: Okay. And, Paul, do you have any comments? This is Josie.

MEMBER ZIEMER: I was getting off of the mute button there.
I do agree with John's comments on the lung dose, but, as you say, that's kind of a separate issue at this point, you know.

CHAIR BEACH: Okay. Thank you. And, Brad, anything else?

MEMBER CLAWSON: No. I just want to make sure with who's going to get this, it's been a little bit confusing, but I appreciate it. No more comments. Thanks.

CHAIR BEACH: Okay. And this is Josie again. I do agree with this. I do want to understand. Will this become a Site Profile issue and something we will track in our Site Profile discussions, the implementation details like this?

DR. NETON: Of this model?

CHAIR BEACH: Yes.

DR. NETON: Yes, I think so.

CHAIR BEACH: Okay. I just wanted to make sure of that.

So, with no other comments, Jim, I think we can go on to 1B. And I think we all
agree to accept that 1A is completed.

    DR. NETON: Okay.

    CHAIR BEACH: Thank you.

    DR. NETON: Okay. 1B was to ascertain the identity of the operators who actually work with the materials and the scrap recovery workers who worked on the material post-1980. And we believe that we have the names of all the workers who handled the stable metal tritide, both the operators and the scrap recovery workers.

    I know that Joe earlier in the week raised the question about how well we knew the scrap recovery workers, but we have gone through the documents that were cited in the SRDB, Site Research Database. And it seems clear to me that the folks who were doing scrap recovery were named in those documents. I think there were eight people.

    CHAIR BEACH: Yes. And this is Josie again. I looked. The one document, in particular, was the 107797 that listed --
DR. NETON: Exactly.

CHAIR BEACH: -- the eight names.

DR. NETON: Yes. It's a lot -- my recollection, I think they're all there.

CHAIR BEACH: Well, there was another time period referenced. That was in R-108. And then there was another one referenced in SW-8. That was prior to before it was moved, but I didn't see any names listed there. And I'm wondering if you're assuming it's the same names or --

DR. NETON: Well, maybe Mel could help me out with this, but my impression was that the scrap recovery was all conducted in that one room.

DR. CHEW: That is correct, Jim.

CHAIR BEACH: Well, based on the documents you cited, there was one that discussed that it had been moved.

MR. FITZGERALD: Well, you know --

CHAIR BEACH: No. Go ahead.
MR. FITZGERALD: This is Joe Fitzgerald again. I participated in two to three interviews. And, you know, we had gone through in some detail back in 2008, at the beginning of this inquiry on tritides.

In the context of the interviews and the discussion with the production side, you know, this was before Brant and I did our research down in Oak Ridge to nail down what the circumstances and history were on the scrap recovery.

So the focus -- and you recall hearing Brant say at a number of Work Group meetings, you know, I know the -- I guess it was either 10 or 11 operators by name that were involved in the production.

So the context was production. And, as the interview notes suggest, these are the production operators. When we got into the recycle, you know, this was after those interviews.

And then the discussion was who --
you know, in my opinion, based on the interviews, these earlier interviews, is that it's some subset of those eight, no question. They weren't additional people, but my question for you, Jim, as I said in my clarification note, was, other than the one individual that's actually named in one of the interviews; in fact, the SRDB that you actually cited in your response to my note, as having quote, "ran it" in R-108, it's just a little ambiguous as to what subset. Was it just that one individual? In other words, he just didn't run it. What, did he manage it? Did he have additional numbers? Or does it matter?

Are you going to assume that those eight were the individuals that would have been exposed in the entire production process, whether it's the front end or the back end. They would be given credit for whatever doses in R-108 occurred.

You know, it just wasn't clear how
you were going to approach that, because I think there is some ambiguity. There is not as much precision on the named individuals in the back end and in the 1980s as there were in the production phase. I think they're the same people, but I'm not sure if it's a small subset, one person, a few people, or, actually, all eight were equally involved in the scrap recovery.

DR. NETON: I was not part of the interview process. So I'm a little bit at a disadvantage here, but our intent would be that any of the named individuals would be considered to have handled stable metal tritides.

But my reading of the SRDB-107797, if you go through it, it says, "Now let's move on, and please describe to me scrap recovery." And in part of that sequence, there is a listing of, I think, eight names that were provided.

It doesn't say anything about --
it doesn't qualify any particular way, to my
recollection, in the --

DR. CHEW: Hey, Jim, this is Mel.
Let me just jump in for a second. Joe and
Working Group, there are two SRDBs you need to
look at, and they're in the report: 107797
and 55962.

The specific question was asked,
"Who worked in R-108 (scrap recovery)?" And
in total, there were nine technicians and
seven professionals who worked in development,
production, and scrap recovery. Quite a bit
of the technicians worked in scrap recovery.
And they were identified in one of the two
SRDBs I had mentioned. I think there are a
total of like six or seven in total.

MR. FITZGERALD: Okay.

DR. CHEW: So that's all clear.

MR. FITZGERALD: So Mel, I'm
looking at 797. And I see the reference to
the text. They're listed by name.

DR. CHEW: Right. And they said
it's R-108, Joe. And I think you had
confirmed with Brant that the tritide of
interest only showed up in 1984.

MR. FITZGERALD: Right. And 797,
can you help me on where the operator,
operator or operators, are named for --

DR. CHEW: Well, the operators
were mentioned in 55962.

MR. FITZGERALD: Okay. But I'm
just saying that, really, what is in 797 is
the text.

DR. CHEW: Right.

MR. FITZGERALD: Okay.

DR. CHEW: You have to put the two
--

MR. FITZGERALD: Yes.

DR. CHEW: You have to put the two
together and then sort out because some of
them, technicians, also worked on the
development and production. And we sorted all
through, put all of the names together. There
are several people, not to be named, that
worked both in development and the scrap recovery, but the one that you're looking at is the one that was clearly asked for and identified in R-108 that worked on scrap recovery. And those are the technical --

MR. FITZGERALD: Now, just for clarity's sake -- and this was the reason I had raised this as a clarification question. In the 562 one, there was an explicit statement that one individual ran it. Is that the operator that you are referring to in that one, in 962?

DR. CHEW: Yes. Yes.

MR. FITZGERALD: Okay.

DR. CHEW: That person was responsible for running the operation along with the technician. And I think there were one or two professionals that also joined in on the scrap recovery. But primarily, the scrap recovery was run by technicians with the person that you had mentioned as being the person responsible.
MR. FITZGERALD: Okay. That detail isn't quite as clear in here, but certainly you have the one operator in 562 in the SRDB. And then you have lists of so-called technicians.

But you're saying you went through the list of technicians, married that up with the other name, and between the two, you could nail down who -- not the technicians or support staff because those are covered under the model, but the named, so-called named operators, you can actually finger more than that one individual who was named in 562.

DR. CHEW: Correct.

MR. SMITH: This is Billy Smith. The SRDB number is 55962.

MR. FITZGERALD: 962, right, 962.

MR. SMITH: Right. It lists in that particular document eight technicians that worked in R-108. In 107797, it listed 8 people in that document, 7 of which are professionals. There's one technician listed
in that list that's not in the list shown on 55962.

MR. FITZGERALD: Well, not to get this more confusing than it's becoming, but 962, the listing at the bottom of the first page, where there's eight individuals listed, those are sort of a combination of technicians and chemists and other operators. So you've got a mixed bag there.

And what is listed in 797 are unequivocally the rad techs in 108. That's pretty clear.

DR. CHEW: They were not necessarily rad techs. They were chem techs.

MR. FITZGERALD: Or chem techs. It's just the techs in 108.

DR. CHEW: Correct. Correct.

MR. FITZGERALD: So that's what you have there.

DR. CHEW: Correct.

MR. FITZGERALD: All I was trying to do is beyond the techs and the support
folks, trying to figure out, other than the one individual who is fingered in 962 as being the one who ran it, were there any other operators? And I guess what I hear, Mel, you saying that yes, you went through this, even though I don't quite -- I don't quite see it in this collection of interviews, but you went through this and figured out there were some other non-techs, non-support people besides this one individual, who would have been involved with 108.

DR. CHEW: That is true.

MR. FITZGERALD: And you know him by name?

DR. CHEW: Yes, sir.

MR. FITZGERALD: Okay. Because that is not jumping out from these three interview notes, but that is fine. That is the question. As we have done, as Brant and you had done on the production side, the front end, have you done that on the back end?

And that was the original question
that came out of the Work Group the last time. And obviously we wouldn't have raised it, nor would the Work Groups have spent time on it if it were in these old interviews because we certainly had access to them. So it wasn't clear at that time.

So you're saying you do have that information?

DR. CHEW: Yes, sir.

CHAIR BEACH: Okay. So this is Josie. I have a question, probably for Mel. Would it be any problem to contact the one individual who is listed that ran the operation just to verify names so that we are not missing anyone, with a phone call interview?

DR. CHEW: I will let Jim give me the authority to do so.

CHAIR BEACH: Yes.

DR. NETON: I don't see any reason why we couldn't do that.

CHAIR BEACH: Joe, what do you
think?

MR. FITZGERALD: Well, I think that would be fine. I think it would be very quick. But, again, it's not so much the technicians or the support people, but just this one individual is very knowledgeable, I think very credible. And if the confirmation is that either that person was the only person or there may have been one or two others, that would be, I think, a very credible and useful answer to inform how you assign those doses for the back end, for that one year.

CHAIR BEACH: Right.

DR. CHEW: Let me add to that, Joe. Not only -- there was a person or two, but we need to make sure we have their names.

MR. FITZGERALD: Yes. Like I said, I'm pretty sure it's within the groupings that we're familiar with for the production side, but this was, you know, a few years later. So it's possible there might have been an additional person that wasn't
part of that original cohort. Since this individual is still around, I think that is a very helpful way to confirm this and put this to bed.

But, you know, Josie, with that confirmation, I think we're fine.

CHAIR BEACH: Okay. So offline could we set up a conference call and involve SC&A, NIOSH to confirm those names, hopefully before the Board meeting?

DR. NETON: I don't know about that.

CHAIR BEACH: I guess it doesn't have to be done before, but it would be helpful to have those names confirmed as early as possible.

DR. NETON: Well, we can try. Put it that way.

CHAIR BEACH: Okay.

MR. FITZGERALD: And even if it can't be scheduled before the Board meeting, I think Josie can report that there is every
good reason to think that that can be confirmed and this can be put to bed.

CHAIR BEACH: Okay. I agree with that. Brad or Paul?

MEMBER CLAWSON: Yes, Josie, this is Brad. I had a question for Mel. You were talking about technicians, and then you were talking about operators. And then you were talking about professionals. Could you clarify on what you are classifying as a professional?

DR. CHEW: Well, I'll say this correctly here, Brad. I don't want to misquote. The professionals would be degreed people who would be considered researchers or principal investigators. And the technicians would be the supporting role for them. I think that is how Mound separates them, but I don't know that for sure.

But I think we basically really shouldn't -- an operator could be both a professional and a technician, as you well
know, Brad. And so I think that's the separation.

MEMBER CLAWSON: Well, right. Mel, that is what I was trying to get because when we use the term "professional," you know, I understand about the degreed people, everything else like that.

My issue is sometimes when we are talking about this and we say "professionals," it doesn't limit these people accurately because some of the professionals were also classified as technicians or so forth.

I always wanted to make sure that when we set this up that -- because when I'm thinking professionals I'm thinking more of the scientists, researchers, or whatever else like that. And I just wanted to make sure that we're looking at the technicians and operators and that we're separating this out, that we've got the right people that were in there.

My other question was, my
understanding was, I understand that scrap
recovery was done in this room, but my
understanding is that in the earlier years,
that it went through a re-drumming process
before it got there because the drums were an
issue and were having problems. They used to
be stored out on a pad was my understanding at
Mound.

How long was this product actually
at Mound before it was processed or
repackaged?

DR. CHEW: I don't know that
answer.

MEMBER CLAWSON: The reason being
is that in these interviews, with this
interview we have been talking to, my
understanding was this stuff was kind of like
the wayward child nobody really wanted. And
it moved from one area to another area until
it got to be such a problem.

And then it went through 109 and
was eventually taken care of because I want to
make sure that everybody here understands these drums and so forth had problems. And this is why they were going through this process.

And I hope that we can -- you know, I know that we're looking at just the scrap recovery in this 109 room. And are we looking at the whole history of where this was at and how it got there and how long it was around there?

DR. CHEW: I'll tell you what I can share with you now, Brad. The main production and development basically stopped in about the 1974 time frame and that has been clearly dated.

And you're right. It sat around and the material was put in drums until the scrap recovery was started in 1984 on the material.

And based on that, if you look at the model that we're putting together. Any exposures to that -- I don't want to speak for
Jim, but I'll let Jim jump in -- would be, any potential would be given to the ancillary workers, who might have been tertiarily exposed. And we would use that model to bound that dose for them.

MEMBER CLAWSON: Because Mel, you know my understanding of this, right? You're looking at, unfortunately, probably a different standpoint than what you guys are, but in our interviews and so forth with the workers or technicians, whatever you want to -- all of them knew of this product. Many of them have dealt with this. And it was an upcoming project to be able to take care of this because it had become a problem child.

And I want to make sure that we've got some way to be able to cover the other people that handled it, dealt with it because they would have troubles with the drums deteriorating and going on to there.

I think that we have got a fairly good handle on the 109 room.
DR. CHEW: 108.

MEMBER CLAWSON: 108 room, sorry.

But, anyway, I just want to make sure that we've got the other people that handled this and how are we going to address them. And I --

DR. CHEW: I just want to add a point to you, Brad. On this particular case, as you know, this particular material was highly classified and highly valued by both Mound and DOE. And so I think there was a great interest in making sure that the drums were not going to be misused and mishandled.

DR. NETON: Yes. And, Brad, I just want to make a point here. Remember that there is already a Class at Mound that covers workers up through 1980.

MEMBER CLAWSON: Right.

DR. NETON: It effectively covers all of those workers who had worked with tritides because it's anyone who was monitored for tritium, which by definition is all of
those workers. So even though the Class was not constructed to cover those workers thereby, they're de facto in the Class already.

MEMBER CLAWSON: And, Jim, I appreciate that. I'll be right honest with you. We have got so many different Classes going there, sometimes I cannot keep track of all the different Classes and who is being covered. I just wanted --

DR. NETON: I have trouble myself, but it really is sort of an odd situation that before 1980, all of these workers are covered already by the radon Class, because of the radon Class by the way it was defined.

MEMBER CLAWSON: Okay. I know that we have had a couple of interviews and these people have dealt with these drums and so forth before they were eventually taken care of. I just wanted to make sure that we did have them covered in this.

If this is the fact, then it won't
be an issue. I just wanted to make sure and kind of clarify that because truthfully -- and I apologize for my ignorance, but I really have -- especially with several different Site Profiles, I have a hard time remembering who was in where and how we were going to do this. And Mound has been a particularly interesting one from that standpoint.

Thank you.

MR. SMITH: This is Billy Smith. I need to make a comment here. One of the things that we're doing here I think is mixing apples and oranges.

One of the things about the tritium recovery system in Mound, Mound had the tritium recovery for all of DOE. And so they processed tritium coming from other sites that were not necessarily tritides in the recovery process. And, hence, most of that would have been in the form of either HgO or organically bound tritium, but they did all of the tritium recovery there.
In terms of the tritide recovery,
one of the critical people that we interviewed
indicated that at most -- and this term was
there was not more than a bucket full of
tritides that went through the recovery
operation.

CHAIR BEACH: Okay. Thank you, Billy, for that clarification.

If there's nothing else on 1B, Jim, we're ready for 1C, addressing the
identified gaps in the swipe data.

DR. NETON: Right. SC&A
determined there were gaps in the swipe data
that were used. And we embarked on trying to
figure out the significance of those gaps by
looking at a couple of different things.

One is that we interviewed a
couple of workers with knowledge of operations
at Mound and specifically were trying to
figure out, did they have any knowledge
related to unusual operations or cessation of
operations or increasing operations during
those gap periods? And neither person interviewed could come up with any reason why the exposure would be different in those periods. Nor could they determine why we wouldn't have the smear data. They just appear to be missing.

But, nonetheless, they didn't recall any reason why production, for example, would have increased dramatically during those gap periods and thereby increasing the potential for contamination exposure.

The second thing was we looked at the urinalysis data. And what that told us over time that we have a very complete urinalysis record. If production quantities did increase, then the urinary output would go up concomitantly because tritide exposure is also associated with just soluble tritium. And, as we report in the write-up, there was no evidence that there was anything like that that occurred.

The third point that I would
mention is that SC&A did point out a few
reports that could be relied on to fill in
some of the gaps so the gap period themselves,
if we take advantage of that information, will
be somewhat less than what was presented in
the first report.

So the bottom line is that we
don't really see any reason why we can't fill
in the gap period with the adjacent data and
proceed accordingly.

That's all I really have to say.

CHAIR BEACH: Okay. This is Josie
again. Thanks, Jim.

Joe, anything on the SC&A side?

MR. FITZGERALD: Well, I was going
to defer a bit to -- you know, Bob Barton has
spent a great deal of time looking at that
very question. Bob, I know you've looked at
the response. What do you think?

MR. BARTON: Well, thanks, Joe.

Yes, this is Bob Barton with SC&A.

As Jim mentioned, there are sort
of three facets to this. I mean, one of them is there are a few more reports in there that kind of close the gaps a little bit, but there will also be some data gaps.

The second one was the use of the bioassay, which is sort of an indirect measure because, you know, as we know, urinalysis can't really directly reflect what kind of tritide exposures there would be out there, but I certainly appreciate the influence because, you know, we at SC&A, we use that all the time. There isn't really a quantitative way to directly answer the question. So that's good. I mean, it builds certainly a weight of evidence argument.

The best one, though, in my mind is the interviews which are talked about in this latest report actually talking with the people who were involved and saying, "Listen, we have these gaps here, here, and here. Is there any reason to think that we can't use, you know, the data before and after to sort of
reflect what was probably going on during those gaps?"

My only comment there is it's not really cited or I'm not familiar with the interview. I guess it happened recently.

CHAIR BEACH: Yes.

MR. BARTON: The only thing I would say there is it would really kind of put this issue to bed if we could show which interviews occurred and where they kind of say, "Yes. There's no reason to think we can't cover these data gaps with the swipe data that happened before and afterwards."

I guess I would ask, Jim, these were recent interviews?

DR. NETON: Yes. These were in the last -- geez, I've lost track of time, but in the last month or something.

MR. FITZGERALD: Yes. They might not be summarized and through DOE yet. I think that was the intent was, to get those documented.
DR. NETON: Right.

MR. FITZGERALD: So --

DR. NETON: Those certainly will be available once they are all reviewed and publishable.

MR. BARTON: Okay. And that's really what we were looking for there, was just some sort of confirmation that we don't have any reason to worry about those periods where we don't have swipe data. I think that pretty much puts that issue to bed, at least in my mind.

CHAIR BEACH: Okay. Thanks, Bob. Paul, Brad, anything? Any questions?

MEMBER CLAWSON: Josie, this is Brad. Not at this time, I don't.

MEMBER ZIEMER: This is Ziemer. I don't have any questions.

CHAIR BEACH: Paul, you cut out a little bit there, but I think you said you --

MEMBER ZIEMER: I said I'm
comfortable with the approach. I think it makes sense and is a logical approach. And once the interviews are confirmed, I think we are okay.

CHAIR BEACH: Okay. Thank you. And I agree with that.

I thought I read -- and I probably did read. That latest one is out on SRDBs, that you conducted with Jim and Joe. Well, I don't know if you were there, Jim, but Joe?

DR. NETON: Yes. I was on the phone.

CHAIR BEACH: Yes.

MR. FITZGERALD: I had not seen it, but I could be there by now. It's been about four weeks.

CHAIR BEACH: Okay. So --

DR. NETON: Oh, there is "documented communication with" -- yes. It's reference 2. I'm trying to see where.

CHAIR BEACH: I read so many of these close together, but I'm pretty sure I
thought I read those interview notes.

MR. FITZGERALD: Okay. Well, if they're up, then that answers Bob's comment, because that would provide those comments.

CHAIR BEACH: Okay. So let's move on to the last one under tritides, D, the reconstruction during D&D.

DR. NETON: Yes. Right. This has to do with D&D coverage. I guess it sort of depends on what you consider, you know, when the D&D era started, but all indications are that the active -- what was quote-unquote "full-blown" D&D didn't occur until the late '90s.

And by that time, the technology shortfall for monitoring for tritides was pretty well established. Mound embarked on a fairly rigorous program of breathing zone air samples followed up by scanning electron microscopy and also used urine samples to ascertain the soluble urine tritium intakes.

We feel in that time period the
coverage was pretty good. I was even surprised. The scanning microscopy I thought was a little over the top, but if you look, there's a procedure that we attached -- or not a procedure but interoffice correspondence that was issued in 1997 that outlined all of the precautions that were taken and the monitoring conditions that were in place for monitoring tritides during this era. And they indeed are pretty rigorous. So that's our position for the D&D era.

CHAIR BEACH: Okay. Thanks, Jim.

Joe, anything on the SC&A side there?

MR. FITZGERALD: Yes. Josie, you'll recall that -- this goes back a few years. Actually, it goes back to maybe some of the Site Profile review that we did.

We did get -- and I agree with Jim's recount of the history of this thing, that we certainly established as well that they were very careful from the operational
standpoint to button up that particular facility when it was no longer needed and used operators to do a lot of the D&D back when that was decommissioned. This was well before the terminal D&D for the entire site. And it was done very carefully.

Our issue really was more from some interview feedback we had gotten about the terminal D&D, where they seemed to have picked up some reading that suggested the tritides were not in the operational areas but really in the ductwork, that kind of thing, that they found.

I know there were some additional interviews. We weren't involved in those, but additional interviews where at least one individual who had provided that perspective had clarified that that was not what he had meant.

Now, you know, that was pretty much the source of our questions on that. And we have not certainly had the opportunity to
go back and satisfy ourselves from that standpoint. Again, we weren't involved in those interviews.

But I would not at this point see this as essential for settling out the question of the tritides during the operating period of the plant. This is kind of analogous to the residuals question that you have at some of the AWEs. There is this sort of lingering question. Even though the program procedures and whatnot were pretty stringent, and I think the RWP suggests that as well, that one that was included was implementation such that there was no real exposure potential during the D&D phase.

We have not really gone back to that question, really, since the Site Profile in terms of the tritide question. That might be something in the Site Profile context that, as we look at some additional information, we ought to see if there's anything else that would stand as sort of operational
information, experience, incidents. We haven't seen any yet, but I wouldn't argue this thing unless we do.

So that's kind of a little bit of an open end, but not one that should hold this up.

CHAIR BEACH: Okay, Joe. This is Josie again. Thanks for that summary. Paul or Brad, any comments?

MEMBER CLAWSON: This is Brad. You know, I agree with Joe on this. I was involved in some of those interviews. And I think we'll -- you know, we really haven't looked at it, as Joe has said, because we've got these other issues taken care of.

I just want to make sure that we don't lose it somewhere. and it sounds like we're not. So I'm fine at this time.

MEMBER ZIEMER: Yes. And this is Ziemer. I am fine at this time, too. I think you are still going to track this, right?

CHAIR BEACH: Yes. This is Josie
again. I put that down as a Site Profile issue to track along with part of A.

MR. FITZGERALD: Yes. And just again, this came from a health physicist during the D&D phase that expressed the fact that they surprisingly came upon what appeared to be some tritide contamination in ductwork.

And, again, I think in a re-interview, that was clarified as not to be the case, but that's kind of all we've got at this point. So there hasn't been any further corroboration, but I think that's unsettled at this point.

MEMBER ZIEMER: Joe, this is Ziemer. Do you know how they identified that as being tritide at that point?

MR. FITZGERALD: Well, what the interview documentation -- and, again, this goes back four or five years ago. So it was an old one. They were using an alpha probe and thought they were -- or alpha-beta probe.
I guess it was both alpha and beta. They were picking up what they thought was Pu, polonium. I'm trying to remember which.

But it turned out not to be the case. And it looked like it was, in fact, at the energy level they were looking at perhaps tritide because at that time there was a consciousness on tritide, but that was it. It was almost an anecdotal type of thing.

They didn't do any further analysis. It was sort of left that way. And we had not talked to this individual since to do that. Brant, I think, did. And based on Brant's questioning, he apparently -- I'm not sure how he -- whether he recanted it or just said that it was misunderstood. I don't know, but certainly the response was that he no longer felt that way.

So that's kind of where it is. It really hasn't been pursued much further than that. There isn't anything, any incident information, any documentation that we have
found that would corroborate that they were picking up tritides in the ductwork or in anything that was connected to those facilities. So that's all we have, is really the interview data. It's not a very strong thing.

So that's what I'm saying. I think it should be handled as a matter of course. If there's anything, any new documentation, anything that's substantial that surfaces, that's something I think we ought to bring back to the Work Group. But I wouldn't certainly give it any more than what we're doing for the remaining Site Profile issues to see if there's any additional documentation left, any records that we haven't looked at. That would be about it.

DR. CHEW: Josie, this is Mel. I would like to make a point of clarification.

CHAIR BEACH: Yes?

DR. CHEW: That discussion with again, Joe, you are right on. We did go back
and discuss it with another health physicist.

    We want to make sure we bear in mind that when they mention tritides, the majority of the tritides at Mound were in the soluble form. And so when you mentioned tritides, you are saying all categories. The ones that we are obviously focusing in is the tritide of special interest here.

    CHAIR BEACH: Okay. This is Josie again. Thanks, Mel. And, with that, I don't think we need to do a formal vote. I think based on what I have heard in the last hour conversation, all three of the Board Members present at this Work Group meeting agree that the tritides issue is complete other than the two items that we talked about tracking in a Site Profile sense.

    Ted, is that correct?

    MR. KATZ: I'm sorry. I was on mute.

    Yes. You don't need to vote. I
mean, everybody has spoken pretty clearly about all of these issues.

CHAIR BEACH: Okay. Thank you.

And if there is nothing else on tritides, I am going to say that that is closed.

And if we could just take time to have NIOSH report out on the next two issues on our agenda? Start with the 83.14, just an update of what is happening there.

DR. NETON: Okay. These will be brief. The 83.14, to refresh your memory, is to add a Class of workers for the couple of years where we discovered that we didn't have logbooks for tritium sampling.

Now we have a litmus case for that 83.14. The report had been drafted. And I just received word that it has been sent out for ADC review.

CHAIR BEACH: Okay.

DR. NETON: The report is done.

Once it comes back from ADC review, we will
distribute it, hopefully early next month, which starts tomorrow. And we should be good to go there.

I will be presenting that at the Advisory Board meeting in Denver.

CHAIR BEACH: Okay. Thank you.

DR. NETON: So expect that report to come out as soon as -- I don't know what turnaround time we're going to get for that report, but I imagine it's pretty fast because I can't imagine there's much in there that's controversial.

CHAIR BEACH: Right.

DR. NETON: The second point. What was I going to talk about the second --

CHAIR BEACH: The second point on --

DR. NETON: Oh, Site Profile issues. Yes. I'm sorry.

CHAIR BEACH: Yes.

DR. NETON: Late on a holiday, preceding a holiday Friday.
CHAIR BEACH: Yes.

DR. NETON: So my mind is wandering.

The Site Profile issues, ORAU had put together a completion schedule to get to us draft responses by the end of September. Once it goes through the various review processes internally, we expect to be able to start talking about all those responses sometime later in October for the remaining Site Profiles, which there are a number.

CHAIR BEACH: Right. Yes, there --

DR. NETON: Now, I didn't get a breakdown as to how each one might be complete. I just sort of got a lump sum date. If it's preferable, I could try to get a little more fine-tuned breakdown of the schedule, but right now I don't expect to be done until later in October.

CHAIR BEACH: Okay. No. That's fine, Jim. And possibly when you have more of
a breakdown and know when you will be ready to discuss it, we can plan a Work Group.

DR. NETON: Right. Because honestly I don't think they're all going to come due at exactly the same minute. You know, there --

CHAIR BEACH: No.

DR. NETON: -- are a lot of varied issues out there. I forgot how many, but there's something like 20, I believe.

CHAIR BEACH: Yes. There are quite a few. And I wouldn't expect them to come due at the same time. But it would be nice to have them all pretty much done and --

DR. NETON: Yes.

CHAIR BEACH: -- and just wait.

DR. NETON: Later in October.

CHAIR BEACH: Great. All right.

Any other questions for Jim, other Board Members?

MEMBER CLAWSON: Josie, this is Brad. I don't have any at this time.
CHAIR BEACH: Okay. Paul, I think you might have spoken.

MEMBER ZIEMER: I said I have no questions.

CHAIR BEACH: Okay. So, with that, Ted, I think we've completed our work today and we can adjourn.

MR. KATZ: Let me just check with you, Josie, about -- we have Mound on the agenda for the Board meeting in Denver.

CHAIR BEACH: Right.

MR. KATZ: And I have it broken out in two parts because we have the 83.14, for which we're given a half an hour. It sounds like that is easily enough to address that.

CHAIR BEACH: Yes.

MR. KATZ: Then immediately following, I have a whole hour and a half right now for the rest of the Mound SEC petition. And that's where I need some feedback from you and the Group with respect to how much time do you actually think the
CHAIR BEACH: Well, I don't think we would need more than a half hour, but that depends on if I am just going to report out and vote or if Jim would like to comment and Joe would like to add for the tritides. I guess that determines what the Group thinks.

MR. KATZ: Okay. And, just to let you know more, what I have is, I have Jim on the agenda because, just as he has reported to you, I would think you would want him to report to the full Board on the tritides.

CHAIR BEACH: Right. Okay.

MR. KATZ: So I have him on the agenda before you. And then I have you. It seems like -- you know, what time is it now? It's 2:36. What time did we start this call?

CHAIR BEACH: We started at 1:30.

MR. KATZ: 1:30?

CHAIR BEACH: About an hour.
MR. KATZ: So it's probably going
to go a little quicker with the full Board
because you have done sort of the detailed
vetting. So I would say Jim's piece and back
and forth with the Board probably can get done
in half an hour, do you think, Jim?

DR. NETON: I'm not 100 percent
clear what you really want me to present. I
mean, I presented today our responses to the
SC&A comments.

MR. KATZ: Right.

DR. NETON: But it would seem
better to sort of go over our proposed model
for tritides, the swipe data, the whole thing,
and include how we're going to do it and that
sort of thing.

MR. KATZ: I agree, Jim. I agree.
I assume you will be putting to bed the issues
that the Board realized were open as well.

DR. NETON: Yes, yes. But I think
I need to take a step back and say, "Well,
here is our proposed model. And here is what
we are going to do."

          MR. KATZ: No, I totally agree. They're going to need more context than the Work Group does. So I'm just asking you, do you think you want a half an hour for that, including back and forth with the Board, or do you think you'll need more?

          DR. NETON: It's a fairly simple model. I mean, it's not very complex.

          MR. KATZ: Okay.

          CHAIR BEACH: So 30 minutes, Jim, you think that would cover it?

          DR. NETON: Oh, absolutely plenty.

          CHAIR BEACH: Yes. And mine won't take very long either.

          MR. KATZ: Okay. So do you think maybe another 30 minutes for your piece and back and forth with the Board will do it, Josie?

          CHAIR BEACH: Yes, yes.

          MR. KATZ: Okay. So then I'll cut the whole period down from an hour and a half
to an hour, then.

CHAIR BEACH: Yes. And I would even say 45 minutes, but that's based on -- it's hard to determine how many questions will come out of that.

MR. KATZ: Yes. That's true.

CHAIR BEACH: Okay.

MR. KATZ: Okay.

CHAIR BEACH: That sounds good.

Okay. Anything else?

(No response.)

CHAIR BEACH: Then I think our work is complete and we can adjourn. Thank you, everyone.

(Whereupon, the above-entitled matter was concluded at 2:38 p.m.)