

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL
NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH

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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

+ + + + +

WORK GROUP ON LINDE CERAMICS PLANT

+ + + + +

MONDAY
FEBRUARY 14, 2011

+ + + + +

The Work Group convened via
teleconference at 11:00 a.m., Genevieve
Roessler, Chair, presiding.

PRESENT:

GENEVIEVE S. ROESSLER, Chair
JOSIE BEACH, Member
R. WILLIAM FIELD, Member
MICHAEL H. GIBSON, Member
JAMES E. LOCKEY, Member

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ALSO PRESENT:

TED KATZ, Designated Federal Official
ISAF AL-NABULSI, DOE
ROBERT ANIGSTEIN, SC&A
ANTOINETTE BONSIGNORE
CHRIS CRAWFORD, DCAS
JASON DAVIS, ORAU Team
MONICA HARRISON-MAPLES, ORAU Team
EMILY HOWELL, HHS
JEFFREY KOTSCH, DOL
JENNY LIN, HHS
LINDA LUX
JOHN MAURO, SC&A
JIM NETON, DCAS
STEVE OSTROW, SC&A
LAVON RUTHERFORD, DCAS
MUTTY SHARFI, ORAU Team

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

2 11:02 a.m.

3 MR. KATZ: This is the Advisory
4 Board on Radiation and Worker Health, Linde
5 Work Group.

6 Let's begin with roll call with
7 Board Members, beginning with the Chair.

8 CHAIR ROESSLER: This is Gen
9 Roessler, Chair of the Work Group, no conflict
10 with Linde.

11 MR. KATZ: Thank you.

12 MEMBER LOCKEY: Jim Lockey, no
13 conflict.

14 MEMBER BEACH: Josie Beach, no
15 conflict.

16 MEMBER GIBSON: Mike Gibson, no
17 conflict.

18 MR. KATZ: Okay. And any other
19 Board Members?

20 MEMBER FIELD: Have you got me?

21 MR. KATZ: And Bill Field.

22 CHAIR ROESSLER: Did you say Dr.

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1 Field came on?

2 MEMBER FIELD: Yes.

3 MR. KATZ: Dr. Field is on, Bill
4 is on.

5 CHAIR ROESSLER: Good.

6 MR. KATZ: Let's go to NIOSH ORAU
7 team.

8 MR. CRAWFORD: This is Chris
9 Crawford, no conflict.

10 DR. NETON: Jim Neton, no
11 conflict, NIOSH.

12 MR. RUTHERFORD: LaVon Rutherford,
13 no conflict, NIOSH.

14 MR. SHARFI: Mutty Sharfi, ORAU
15 team, no conflict.

16 MS. HARRISON-MAPLES: Monica
17 Harrison-Maples, ORAU team, no conflict.

18 MR. KATZ: I'm sorry. Two of you
19 trampled each other. I heard Monica Maples,
20 but I didn't hear the other.

21 MR. DAVIS: Jason Davis, ORAU
22 team, no conflict.

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1 MR. KATZ: Thank you. Very good.

2 And SC&A team?

3 DR. MAURO: John Mauro, SC&A, no
4 conflict.

5 DR. OSTROW: Steve Ostrow, no
6 conflict.

7 DR. ANIGSTEIN: Bob Anigstein,
8 SC&A, no conflict.

9 MR. KATZ: Thank you. Very good.
10 Federal officials, HHS or other agencies, or
11 contractors to the feds?

12 MS. LIN: This is Jenny Lin, HHS.

13 MS. HOWELL: Emily Howell, HHS.

14 DR. AL-NABULSI: Isaf Al-Nabulsi,
15 DOE.

16 MR. KOTSCH: Jeff Kotsch,
17 Department of Labor.

18 MR. KATZ: Very good. Thank you
19 and welcome. And last but not least,
20 petitioners or members of the public?

21 MS. BONSIGNORE: Antoinette
22 Bonsignore, Linde SEC petitioner.

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1 MS. LUX: Linda Lux, petitioner.

2 MR. KATZ: Very good. Have I
3 missed anyone?

4 (No response.)

5 Okay. Thank you and welcome all.

6 Let me remind everyone on the line
7 to mute your phone except when you're
8 addressing the group. You can press *6 if you
9 don't have a mute button, and *6 to come off
10 of mute. And please don't put the call on
11 hold at any point, but hang up and dial back
12 in if you need to leave.

13 We have an agenda which was posted
14 just this morning but distributed to the Work
15 Group Members again on Friday, I believe. So,
16 Gen, it's your agenda.

17 CHAIR ROESSLER: Okay. Thank you,
18 Ted.

19 This is Gen. A reminder to
20 participants -- and I'm pleased that all of
21 the key participants are on the phone -- we
22 are discussing SEC-00107, Linde Ceramics.

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1 This covers the period January 1, 1954,
2 through July 31, 2006.

3 This has been called the Linde
4 residual radiation period. Sometimes it is
5 also referred to as the renovation or
6 remediation period. At least a part of it
7 covers that time period.

8 I will remind you, in case you
9 want to refer to a timeline, there is one in
10 the new Evaluation Report on page 17. I found
11 that quite helpful, and it's something that,
12 as we go through this and as we go through the
13 Board presentation, we might want to have it
14 in front of us.

15 I would also like to ask the Work
16 Group that we should focus on this petition.
17 And on -- and I think sometimes we, too, need
18 to remind ourselves of the rule that we are
19 obligated to follow, and sometimes we might
20 need to -- I found it rather refreshing myself
21 to go back this weekend and review some things
22 in it.

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1 So our goal for the meeting today
2 is to evaluate the new materials and
3 information, and then to plan our presentation
4 for the face-to-face Board meeting on February
5 24th.

6 The agenda -- I think everybody on
7 the Work Group has this. I was proud I got on
8 the CDC computer on Friday and was able to
9 send it to Ted, and then it seemed that CDC's
10 email crashed. But I did send it to the Work
11 Group Members, and I think Ted said it was
12 posted this morning.

13 So the first thing, do the Work
14 Group Members or others have any additions or
15 changes to the agenda?

16 (No response.)

17 Either everybody is on mute or
18 there are none, so we'll proceed. I thought
19 it would help to do a very brief summary of
20 the December 7th -- of our Work Group
21 teleconference, and then the -- a summary of
22 the pertinent portion of the January 12th

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1 Board meeting. And the transcript, by the
2 way, for the -- our teleconference is on the
3 website.

4 The main issue on December 7th
5 that the Work Group discussed was how to bound
6 radon doses in the Linde conveyor tunnel.
7 NIOSH presented an approach to use radon
8 concentrations in basements. A rather
9 extensive database was found. This is in an
10 area near the site. We discussed this in-
11 depth.

12 I think SC&A agreed with the
13 approach and agreed that this would be a
14 plausible bounding method. Therefore NIOSH
15 was instructed to revise this methodology in
16 their revised Evaluation Report.

17 Then even though that was the main
18 issue that we had to discuss, we also -- even
19 though the bounding doses in the Linde
20 buildings had been discussed at earlier
21 meetings, and NIOSH and SC&A had agreed on
22 this bounding approach, our Work Group Members

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1 Mike Gibson and Josie Beach said they were
2 still concerned about the approach.

3 We discussed some of this, and in
4 my review of our transcript and minutes and in
5 some of the comments I made, my conclusion was
6 that many of Mike Gibson's concerns were
7 overarching concerns. And this -- we will
8 give him and Josie time when we present our
9 views to the Board in Augusta on the Linde
10 petition -- time to express those concerns.

11 So then on January 12th at our
12 Board meeting -- and this transcript is also
13 on the website -- the pages 15 through 38, if
14 you want to look those over, deal with Linde.

15 At that time, NIOSH reported that they had
16 withdrawn earlier approaches to bounding radon
17 doses in the Linde tunnels, and they are going
18 to be using what I described before, the
19 basement radon measurements, and some
20 adjustment factors based on the radium
21 measured in soil from the site to come up with
22 their method.

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1 They also agreed to modify the
2 method of external -- excuse me, internal
3 exposure in the building during this
4 renovation period.

5 So during this -- then the Board
6 meeting, because of these revisions, we
7 decided then to delay any action until after
8 NIOSH had a revised Evaluation Report, after
9 SC&A had a chance to review it, and after our
10 Work Group could schedule a meeting -- and
11 this is it, today -- so that we could decide
12 what to present at the next Board meeting in
13 February.

14 So we do have the revised
15 Evaluation Report. I'll comment that, Chris,
16 you and your team I thought put together a
17 very concise and readable document.

18 So I think the next thing on the
19 agenda, then, unless anybody has any questions
20 about -- or comments about what I have just
21 said, is to ask NIOSH to present their report.

22 And then I haven't seen a written response to

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1 it from SC&A, but I hear Steve on the line and
2 Bob Anigstein. So I assume they will follow
3 with their comments. And I'm done talking.

4 MR. CRAWFORD: Gen, to what extent
5 do you want me to go over the modified ER?
6 This is Chris Crawford.

7 CHAIR ROESSLER: Well, I certainly
8 don't think we want to go over the whole
9 thing, but I think -- and everybody has had it
10 and has been reminded to read it. I think
11 just hit the high points on your revised
12 approach to bounding the radon doses, and, you
13 know, I think just summarize that as a start.

14 MR. CRAWFORD: All right. I do
15 need to point out that actually it was SC&A
16 and Bob Anigstein that came up with the basic
17 radon model that we are now using. All we did
18 was take Bob's model and we added data to the
19 data set. That is, bore holes that were near
20 the tunnels that we did use and that Bob
21 actually used, some of the data hadn't been
22 included on the original run.

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1 Also there was a minor correction
2 to be made because Bob had inadvertently used
3 the Niagara County instead of the Erie County
4 basement radon levels. With those two things
5 added, we ran Bob's model and came up with --
6 it's a little overly precise, but 99.31
7 picocuries per liter as a bounding level of
8 radon in the tunnel from the soil.

9 So if there's any discussion about
10 that, we could do that now, Gen.

11 CHAIR ROESSLER: Well, if you --

12 MR. CRAWFORD: We also -- go
13 ahead.

14 CHAIR ROESSLER: The thing we
15 might do as you go through this is have SC&A
16 interact or comment as you present
17 information.

18 DR. OSTROW: Gen, this is Steve
19 Ostrow. I don't think that's really
20 necessary. We reviewed the new ER and the
21 other two documents that came along with it,
22 and we can just make a comment at the very end

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1 of his presentation, I think.

2 CHAIR ROESSLER: Okay. That
3 sounds good.

4 MR. CRAWFORD: Other than that,
5 Gen, I think the main change to the ER was we
6 did go back and we did get all of the
7 individual Linde tunnel drawings that we had
8 discussed, but didn't have the actual drawings
9 in the last teleconference.

10 And we believe that they show
11 unequivocally that certain sections of the
12 tunnels were constructed at different times.
13 I think that's well laid out in the revised
14 ER. I could go over it, if you like.

15 CHAIR ROESSLER: No, I don't think
16 that would be necessary unless someone has
17 questions.

18 MR. CRAWFORD: One thing we -- we
19 haven't mentioned, we did get an email from
20 Dr. Melius.

21 DR. NETON: Yes, I was just going
22 to suggest that we talk about the other --

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1 this is Jim Neton, by the way. The other
2 modification that was made to the ER was to --
3 I think we had vacuuming operations in there
4 originally, and we revised it to include this
5 pneumatic hammering value, which we had come
6 to that conclusion during our deliberations in
7 previous Working Groups. That is this 2.3 MAC
8 value that we would apply the continuous value
9 throughout the so-called renovation period.

10 And the reason for that was it
11 seemed to us to be a better indication of what
12 might be in the renovation period because it
13 was jackhammering of previously clean
14 concrete. They went back and -- after it had
15 already been sandblasted, I believe, they went
16 back and re-jackhammered it and ended up with
17 this 2.3 MAC, which I believe was the highest
18 value measure of the jackhammering operations.

19 And since there were worker
20 statements to the fact that jackhammering was
21 an operation that did occur during the D&D --
22 or the renovation period, we felt that that

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1 was a fairly representative value that we
2 would use for that -- reconstructions during
3 that time.

4 I think that's the gist of all
5 that has changed in the ER.

6 CHAIR ROESSLER: This is Gen. A
7 timeline on this -- I think Dr. Melius's
8 concerns about the lack of information on the
9 site, which I have on the agenda, but we --
10 later, but we can bring it in any time, I
11 think -- I think he sent that before he saw
12 the new ER. Is that true?

13 DR. NETON: You know, I'm not
14 clear on that although Dr. Melius's email had
15 some items that I didn't quite understand.
16 For example, he referred to a reduction in a
17 factor of two to account for the cleanup.

18 That was actually -- that's what
19 was used in the previous ER that -- it was --
20 involved vacuum cleaning, and we originally
21 had reduced that by a factor of two to
22 accommodate the fact that it had been cleaned.

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1 That's no longer in the ER, so I was a little
2 bit confused by Dr. Melius's email as to what
3 he had read to come to his conclusions.

4 CHAIR ROESSLER: This is Gen. I'm
5 wondering how we should approach this. We do
6 need to talk about Dr. Melius's comments and
7 how we are going to address them, but I'm
8 wondering if we should finish the revised ER
9 first and have comments from SC&A. What you
10 have just said, Jim, may apply to Dr. Melius's
11 concerns, but let's separate it out. Let's
12 finish this discussion and then go on a little
13 bit later with Dr. Melius's concerns.

14 So I think if that completes your
15 summary, then we should go to Steve and Bob
16 and SC&A's response.

17 DR. OSTROW: Okay. Gen, this is
18 Steve. Not much to say. We reviewed NIOSH's
19 Revision 1 of their ER, and we reviewed the
20 other documents that they sent us around the
21 same time. And we support their approach. We
22 have no comments other than that we support

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1 their approach.

2 CHAIR ROESSLER: So that includes
3 the entire approach for bounding for the
4 buildings and the conveyor tunnel.

5 DR. OSTROW: Yes, the utility
6 tunnel.

7 CHAIR ROESSLER: I mean the --
8 excuse me, I did that once before already,
9 too.

10 DR. OSTROW: Okay.

11 CHAIR ROESSLER: Thank you, Steve.

12 DR. OSTROW: Yes, the whole
13 business -- we agree with your --

14 CHAIR ROESSLER: Okay. Okay.

15 DR. OSTROW: John or Bob, do you
16 have any comments on that? I think that's our
17 conclusion, right?

18 DR. ANIGSTEIN: That's our
19 conclusion. This is Bob Anigstein. There was
20 a -- there are some small differences. The
21 most important difference is that the -- our
22 original analysis used the bore hole -- the

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1 radium assays from bore holes that NIOSH had
2 identified were in the vicinity of the tunnel.

3 We didn't do any -- you know, didn't check
4 any others. We only selected the ones that
5 NIOSH said were in the vicinity of the tunnel.

6 Now NIOSH said they used -- they
7 used all of the bore holes, and the result was
8 somewhat lower, about a factor of two lower
9 radium readings on average. But we decided
10 this is sort of within the realm of analyst --
11 within the area of analyst judgment. So we
12 are -- we are willing to go along with that.

13 CHAIR ROESSLER: Okay. Work Group
14 Members, do you have any comments or concerns?

15 MEMBER FIELD: Jim, this --

16 MEMBER BEACH: Oh, go ahead, Mike.

17 MEMBER FIELD: This is Bill Field.

18 Jim, I just had some questions about, you
19 know, the choice of what samples. It does
20 make a difference of about 100 picocuries per
21 liter, it looks like, depending on which ones
22 you use. Could you give us any insights into

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1 why you used the ones you chose versus the
2 ones SC&A first used?

3 DR. NETON: Yes, this is Jim.
4 Chris, I think, can answer that question.

5 MR. CRAWFORD: Chris Crawford.
6 Dr. Field, actually, Bob Anigstein and SC&A
7 used all of the data that I originally sent
8 them. So it wasn't that they chose the data.

9 The only change that we made was
10 using the same bore holes, the same set of
11 bore holes, we had data down to 11 feet in
12 some cases. Originally, we only sent the data
13 for the top four feet of soil. We decided
14 later, since it was a biased sample to begin
15 with, that we might as well use the full
16 column bore hole readings. That was all that
17 was added to the data that we had.

18 MEMBER FIELD: And can you refresh
19 my memory, how deep are the tunnels again?

20 MR. CRAWFORD: The tunnels are 10
21 to 12 feet deep for the most part.

22 MEMBER FIELD: Okay. Okay. Thank

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1 you.

2 MR. CRAWFORD: You're welcome.

3 CHAIR ROESSLER: Okay. Bill, this
4 is Gen. Does that -- do you have any
5 concerns, after hearing that, with the
6 approach, then, that NIOSH proposes to use?

7 MEMBER FIELD: No, I think it's
8 reasonable with the bounding they performed.
9 I think it's very reasonable.

10 CHAIR ROESSLER: Okay. Then I
11 think Josie had a question.

12 MEMBER BEACH: Yes. I just had --
13 back on the utility tunnels. We had
14 discussions at our last Work Group meeting
15 about the drawings and clarification of the
16 drawings of when the tunnels were built, and I
17 know Antoinette had some issues. And I have
18 some concerns with those drawings, and I know
19 that Jim had talked about possibly getting
20 permits.

21 And I guess I still have some
22 concerns about when those tunnels were

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1 constructed, and it looks like they have come
2 to the conclusion that they had earlier stated
3 on the tunnels, that some of them were built
4 early and some of them came later. So I'm
5 still concerned about that.

6 MR. CRAWFORD: Gen, this is Chris
7 Crawford. Do you want me to address that?

8 CHAIR ROESSLER: Yes, I wish you
9 would.

10 MR. CRAWFORD: Well, I did post in
11 the Board's area the tunnel drawings, so I'm
12 going to refer to the drawings, but you can
13 pull them up yourselves and expand the
14 drawings and see the text, to the extent you
15 wish.

16 And I would direct the -- your
17 attention to the 1957 Linde tunnel drawing.
18 For the record, it's -- the drawing number is
19 A-360164. And there are two quite significant
20 features I would like to draw to your
21 attention.

22 In the central lower part of the

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1 drawing, there are some dashed lines. They
2 are very faint in the whole drawing, but if
3 you blow it up it's quite easy to see. And
4 they are labeled Future Extension of Tunnel,
5 and that future extension of tunnel is the
6 western extension of the tunnel from Junction
7 Box 1. That's an indication that that tunnel
8 did not exist in 1957 at the time this drawing
9 was made.

10 Also the other thing that I want
11 to direct your attention to is that there are
12 many features labeled on the drawing, but
13 conspicuously absent is Junction Box Number 6
14 in any tunnel going to the south towards
15 Building 8, which is -- these are construction
16 drawings, after all, and they showed old
17 abandoned sewer lines, and everything that was
18 there was shown, believe me.

19 But that's missing, and no tunnel
20 shown to the south. I think it's very good
21 evidence that those tunnels did not exist in
22 '57. Furthermore, in the 1961 drawings, we

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1 see that those tunnels are drawn in. We
2 believe they were built in 1961, and I invite
3 you to look at the 1961 drawing as well for
4 that reason.

5 MEMBER BEACH: Yes. No, I
6 appreciate that. I have looked at them, and
7 the central -- the dotted lines you explained,
8 I'll look for that. Thank you.

9 CHAIR ROESSLER: Okay. Any other
10 questions or comments from Work Group Members?

11 DR. NETON: Hey, Gen, this is Jim.
12 I'd just like to point out that the existence
13 of the tunnels really isn't necessarily
14 relevant to our current discussion. It's more
15 relevant to the other SEC-154 Class.

16 MEMBER BEACH: Jim, this is Josie.
17 I do understand that, but it was mentioned,
18 so I thought I'd go ahead and bring it up
19 because I did have a question.

20 DR. NETON: Yes.

21 MEMBER BEACH: Thanks.

22 DR. NETON: No problem.

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1 CHAIR ROESSLER: This is Gen.
2 That's pertinent when we get to the Board
3 meeting, too, is if the question comes up, I
4 think we need to keep pointing out that it's
5 -- it really isn't a question for the SEC
6 under discussion.

7 Okay. Any other comments?

8 (No response.)

9 There probably will be some from a
10 number of you once we talk about Dr. Melius's
11 email, and -- which everyone has. Are we
12 ready to move on to that discussion?

13 MEMBER FIELD: I think so.

14 CHAIR ROESSLER: And then after we
15 finish that, then we will try to wrap up what
16 the Work Group Members think we should do with
17 regard to our presentation to the Board.

18 I did forward to you -- I believe
19 I did, to the Work Group Members, and I think
20 you all were copied on it originally when Dr.
21 Melius sent out his email -- his concerns --
22 and I've highlighted on here, I'll kind of

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1 outline this, and then we can just discuss
2 from that -- that he says that he is primarily
3 concerned with the part of the timeline that
4 we call the remediation time.

5 And he says -- oh, let me see if I
6 can find it -- because there is lack of
7 information on the activities at the site, he
8 is questioning the extent of the time period
9 involved, the number of workers, type of
10 renovation activities, involvement of workers
11 from other parts of the facility -- let's see,
12 I'm still not getting to the bottom line here.

13 What he's questioning is actually
14 coming up with the bounding approaches for
15 this particular period of time. And I think
16 Jim addressed -- Jim Neton addressed this in
17 part in the -- by discussing the new ER and
18 talking about using probably a much more
19 claimant-friendly approach to doing this by
20 using values from the pneumatic hammering
21 during the earlier decontamination part of the
22 site.

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1 Have I summarized that okay, or
2 does somebody else want to give a shot at it?

3 (No response.)

4 It doesn't sound like it.

5 MEMBER LOCKEY: Gen, Jim Lockey.

6 Can you hear me?

7 CHAIR ROESSLER: Sure.

8 MEMBER LOCKEY: Okay. When I read
9 Jim's letter, I was more struck with -- not
10 struck, but thinking he was saying that we
11 couldn't do dose reconstruction with
12 sufficient accuracy because there wasn't
13 enough sampling available. And even though we
14 were taking a claimant-friendly approach, dose
15 reconstruction was not going to be an accurate
16 dose reconstruction.

17 Now I really don't know how to
18 address that. The only way you really get
19 accurate dose reconstruction on each worker is
20 to have each worker monitored on a continuous
21 basis, and that's the only way you'll get
22 accurate data on any workplace situation.

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1 So I'm not sure how to address
2 that, but I thought that was the question he
3 was asking.

4 CHAIR ROESSLER: Well, let's see.
5 Jim Neton or Chris Crawford, what is your
6 interpretation of his concern?

7 DR. NETON: This is Jim Neton. I
8 would agree with Dr. Lockey's assessment of
9 Dr. Melius's concern, that it wasn't that we
10 couldn't -- we didn't have some sort of a
11 bound that we could put there, but it was is
12 that a reasonable bound to use for all workers
13 in all buildings, that sort of thing.

14 And that's -- I'm not sure how one
15 addresses that. This is not unlike what we do
16 when we use 95th percentiles for all workers
17 at certain sites or, you know, any time we
18 can't position a worker at a time and place,
19 we very often resort to upper bounds, full
20 well knowing that not all workers actually
21 participated in all of those activities. But
22 it's claimant favorable. So I'm not exactly

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1 sure where to go with that.

2 MR. CRAWFORD: And I would sort of
3 agree with that. That question sort of throws
4 into question even using a 95th percentile as
5 an upper bound because it probably does not
6 reflect accurately what dose a person got. It
7 probably overestimates the dose by a factor of
8 10 to 100. Therefore that would not be
9 considered an accurate dose reconstruction for
10 that individual.

11 The only way I know that can be
12 resolved is in these situations, if you want
13 that degree of accuracy, every person has to
14 have personal monitoring data.

15 CHAIR ROESSLER: This is Gen.
16 Would it be fair to say that he is saying that
17 this is not a plausible upper bound for
18 everyone at the site?

19 MR. CRAWFORD: I don't think he's
20 saying that. I think what he is saying is
21 that it's not accurate, and that there are
22 probably people substantially lower.

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1 CHAIR ROESSLER: And so it seems
2 like this has been done at other sites. It
3 would be -- like I call it often an
4 overarching problem. If this is a problem at
5 this site, then certainly it would be at other
6 sites -- other sites that have even been --
7 the decision has been made.

8 MR. CRAWFORD: It would be a
9 universal problem across the whole industry.

10 MEMBER FIELD: Gen, this is Bill
11 Field. I read his questions, I guess, a lot
12 differently. I don't think he has seen this
13 one with the new assumptions. I think what --
14 from my perspective what he was asking is
15 could they have been involved in some type of
16 activities where they would have had higher
17 exposure than what the assumptions were that
18 were being used? That was my interpretation.

19 CHAIR ROESSLER: That was what --
20 that was the way I interpreted it, too. And
21 that's why I thought perhaps the revision to
22 the ER to include the pneumatic hammering

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1 might take care of that. I don't know that --

2 MEMBER LOCKEY: Gen, I would refer
3 you and Bill to the bottom of his -- I don't
4 know, the second paragraph or third paragraph,
5 the one that starts, "Given the paucity of
6 information and data," the very last sentence
7 in his email, "Simply being able to apply
8 worst-case exposure scenarios to everyone at
9 the site during this time period may satisfy
10 our policy for being claimant-friendly, but it
11 does not necessarily justify the need to be
12 able to do dose reconstruction with sufficient
13 accuracy."

14 CHAIR ROESSLER: Yes. So that --
15 that then supports your conclusion as to what
16 his concerns were.

17 MEMBER LOCKEY: Yes.

18 CHAIR ROESSLER: I'm wondering,
19 have we actually gotten two communications
20 from him? I have another one, and I'm looking
21 at that now to see if that's -- if that's
22 different. This was one that he sent out on

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1 January 10th, and here he says, "I have two
2 questions on Linde."

3 MEMBER BEACH: That's the original
4 one, Gen. This is Josie.

5 CHAIR ROESSLER: Yes. And so how
6 --

7 MEMBER BEACH: There is two.

8 CHAIR ROESSLER: And I'm looking
9 at that quickly here. Without -- he says,
10 "Without knowledge of the renovation
11 activities, could you be underestimating
12 exposures for the Building 30 workers and at
13 the same time overestimating the exposures for
14 workers in other buildings?" He says, "While
15 we can argue you are bounding the dose, that
16 bound must be plausible."

17 I'm not really clear on what his
18 concerns are, and I'm not quite sure how we
19 should handle it.

20 MR. KATZ: Gen, this is Ted. I
21 would just suggest you be prepared to handle
22 either side of the question.

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1 CHAIR ROESSLER: Okay. There
2 was --

3 MR. KATZ: That seems like the
4 easiest way.

5 CHAIR ROESSLER: Yes, I know.
6 There was some communication on email that I
7 saw between Dr. Melius and SC&A, and there was
8 some talk about a technical call. Did that
9 ever happen, or does anybody from SC&A have
10 any clarification on that?

11 DR. OSTROW: No, we didn't have
12 any technical call because it's not really the
13 right venue. Technical calls are usually
14 between SC&A and NIOSH and involve some
15 technical issue where we don't understand what
16 they're doing, and they don't understand what
17 we're doing, so it's a clarification.

18 We don't -- I don't think we have
19 technical calls with Board Members, in
20 general. So we didn't have such a thing. And
21 I don't know if it's really the place of SC&A
22 to answer this.

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1 MEMBER LOCKEY: Hey, Gen, Jim
2 Lockey. Let's go through his email because
3 there is a couple of things I would like to
4 know. I think he raises some questions that I
5 need to be clarified on. Maybe, Steve, you
6 could do it for me.

7 But in relationship to the Linde
8 site, when we are talking about Building 30,
9 how many other buildings besides Building 30
10 are we talking about in relationship to this
11 SEC?

12 CHAIR ROESSLER: Chris could
13 probably answer that.

14 DR. NETON: Chris Crawford. Yes,
15 I'm sorry.

16 MR. CRAWFORD: Basically, we are
17 talking about the four buildings in the
18 ceramics plant area, plus Building 14 also
19 called the Tonawanda Laboratory, among other
20 things.

21 MEMBER LOCKEY: And Building 30
22 was chosen because?

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1 MR. CRAWFORD: It was the most
2 heavily contaminated of all the ceramics plant
3 buildings, and it was where the primary
4 uranium ore processing was done, which
5 explains the contamination level.

6 MEMBER LOCKEY: And we have good
7 documentation that it was the heaviest
8 contaminated building?

9 MR. CRAWFORD: Yes. It is stated
10 in several reports, both contemporaneous
11 reports back in the '50s and also in the
12 FUSRAP reports later.

13 MEMBER BEACH: If you look on the
14 ER on page 14, it lists all of the buildings
15 out --

16 MEMBER LOCKEY: Right. I know
17 that. I'm just trying to run through what Jim
18 was running through in my mind.

19 In relationship, then, to
20 Building 30, we can't document which workers
21 went in and out of which buildings, is that
22 correct?

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1 MR. CRAWFORD: That's basically
2 correct. Apparently, workers traveled quite a
3 bit through the plant. And, of course, we are
4 dealing with a 50-year period here. Workers
5 are reassigned regularly, too, so no, we can't
6 place individual workers and individual
7 positions within buildings.

8 DR. NETON: This is not unlike we
9 have done at almost every other site.

10 MEMBER LOCKEY: It would be sort
11 of like General Electric, right?

12 DR. NETON: Exactly.

13 MEMBER LOCKEY: Exactly. Okay.
14 So when we get to, then, the question about
15 renovation activities in Building 30, there is
16 very little documentation of those activities.
17 And when I read the documents, there wasn't a
18 lot of -- there wasn't a lot of paperwork
19 documentation that a lot of renovation went
20 on, but I guess the workers thought that a lot
21 of renovation went on. Is that correct? Am I
22 reading that right?

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1 MR. CRAWFORD: That is correct.
2 In my reading of the worker testimony, there
3 is one incident that seems to stand out as
4 well described -- a 1966, I think, movement of
5 an industrial shears, which was, I think, a
6 six-month project. The rest is testimony that
7 basically there was a lot of work done in the
8 buildings from '62 to '68 in particular.

9 NIOSH did discover one
10 construction permit for a very small addition
11 to Building 30 that was done in 1968. We
12 don't actually know if the work was done, but
13 the permit was issued. So those are the only
14 two fact points we have -- a '66 movement of a
15 machine and a '68 building permit. Everything
16 else is a little vague.

17 DR. NETON: But we do know for a
18 fact that jackhammering did occur because
19 there is testimony in various proceedings to
20 that effect.

21 MEMBER LOCKEY: Okay. So then
22 when Jim raises the question of the extent of

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1 the time period that workers were involved,
2 the type of renovation activities, involvement
3 of other workers from other parts of the
4 facility, then overall, I guess the approach
5 we have taken, as I understand it, is we have
6 taken the worst-case situation in Building 30,
7 the worst type of renovation that probably can
8 happen -- that was the jackhammering and the
9 generation of dust -- and assuming that all of
10 the workers from all of the facilities had the
11 potential for that exposure over that period
12 of time.

13 DR. NETON: That's correct.

14 MEMBER LOCKEY: Okay. So then his
15 real question is, is that of sufficient
16 accuracy?

17 CHAIR ROESSLER: Well, I think his
18 question is would the exposures be
19 underestimated in Building 30? I think that's
20 really the pertinent question. His question
21 about overestimating in the other buildings,
22 you know, that's a precedent. That is done

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1 sort of routinely, and I don't think that
2 would be -- to me, that's not the major
3 question to address.

4 MEMBER LOCKEY: Right, Gen. You
5 know, for me it's confusing. I'm not sure --
6 I thought he was concerned about sufficient
7 accuracy. Even though we're being claimant-
8 friendly, we may -- it's not an accurate
9 reconstruction because it may be too high.

10 But you're right, he may be
11 thinking that we don't have enough data to
12 claim that we are upper bounding it. But it
13 sounds like SC&A and NIOSH thinks we do have
14 enough data.

15 MEMBER FIELD: This is Bill Field.
16 It seems like if jackhammering occurred --
17 and that's documented -- Jim or anyone else,
18 can you think of any other type of activity
19 that would have created a higher exposure?

20 DR. NETON: Not once the -- not
21 once the building had been cleaned. See, we
22 had some fairly detailed surveys while they

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1 were -- while they were deconning the
2 building. And sandblasting, certainly, of
3 contaminated concrete that had not been
4 cleaned is much higher. I mean, that's a
5 fact.

6 But of the other activities that
7 remain once the material has been cleaned
8 through sandblasting and vacuuming and such,
9 the highest value that would exist would be
10 the jackhammering of the previously cleaned
11 materials, which is what we used. And I
12 believe we used the highest of those -- of the
13 jackhammering values. There were other
14 jackhammerings, but we took the highest one,
15 which was 2.3 times the maximum allowable
16 concentration.

17 MEMBER FIELD: And the assumption
18 was for Building 30 and others that that
19 jackhammering occurred 24 hours a day.

20 DR. NETON: Well, yes, or every
21 hour a worker was --

22 MEMBER FIELD: Every hour that

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1 there was produced that concentration.

2 DR. NETON: Yes.

3 MEMBER FIELD: So if anything
4 seems implausible to me it's that, that you
5 would have those concentrations over a 24-hour
6 period. But, you know, I guess that gets into
7 the gray area of what's plausible.

8 DR. NETON: Right.

9 MEMBER LOCKEY: This is Jim
10 Lockey. Bill, you're right, it's not --
11 that's not plausible, but it does set a
12 claimant-friendly upper bound on it. But the
13 question is is it accurate, right? And that's
14 why I thought that's what Jim was asking.

15 DR. MAURO: This is John Mauro.
16 The essence of the issue really goes to OTIB-
17 70. In other words, there has been -- in
18 effect, the concern is whether or not this
19 fundamental strategy of using data collected
20 during the D&D period -- 1953 selecting that
21 data in a way that you feel could be applied
22 to the renovation period.

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1 It is a classic OTIB-70 approach
2 with a little twist to it to make it even a
3 little bit more conservative because you are
4 holding it flat. And I really think what you
5 are going to is the fundamental philosophy, or
6 there may even be what you consider to be a
7 policy issue, whether that basic approach to
8 deal with residual periods in general, because
9 residual periods very often have very little
10 if no data until the FUSRAP program starts.

11 And NIOSH has come up with a
12 strategy, with the OTIB-70 strategy, and there
13 is, you know, many ways in which that could be
14 implemented. But it is a fundamental approach
15 to deal with time periods where you have very
16 little data because at the time they felt
17 there really was very little potential for
18 exposure.

19 And whether or not that approach
20 is something that satisfies and it's almost
21 your sense of sufficient accuracy within the
22 context of the regulations. And, of course,

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1 now it's really your interpretation of whether
2 this meets what you feel is a threshold
3 criteria of what sufficient accuracy is.

4 I wanted to just throw that in
5 because the very issue that we're discussing
6 goes toward OTIB-70 and that fundamental
7 philosophy. And it is going to be very
8 important as it applies to many, many other
9 sites.

10 DR. NETON: John, this is Jim. I
11 appreciate that comment. You hit the nail on
12 the head. And I'd point out that this is not
13 unlike what TIB-70 does for almost every other
14 site where we have operational air sample data
15 during the operations, and we use that to set
16 the intakes at the start of the residual
17 period. It's very much akin to that with a
18 little bit of a twist. But you're absolutely
19 right.

20 MEMBER BEACH: This is Josie. Can
21 I ask a question here, Jim? Or I'm not sure
22 who can answer it. Has OTIB-70 been reviewed

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1 by the Procedures Work Group?

2 DR. NETON: It's under review at
3 the current time.

4 MEMBER BEACH: Okay. Because I've
5 been trying to find that documentation and
6 haven't been successful.

7 DR. NETON: There is an SC&A
8 review that has been produced, I believe.
9 Yes. And --

10 MEMBER BEACH: -- available on the
11 NIOSH website or --

12 DR. NETON: No. It should be. If
13 not, we can certainly make it available.

14 Now this is the crux of the issue.
15 TIB-70 has been reviewed, but I will say that
16 thus far during the review the starting point
17 of TIB-70, this -- this sort of decay using
18 data from the operational period has been
19 favorably reviewed by SC&A.

20 DR. MAURO: Yes, and I'll --

21 MEMBER LOCKEY: -- some other
22 issues that are on the table, but that one I

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1 believe is -- we are in general agreement on.

2 DR. MAURO: This is John Mauro.
3 That's correct. There are many facets to
4 OTIB-70, only one of which deals with the
5 subject we are talking about right now, which
6 is I would say the most important part of
7 OTIB-70. And we have concurred in that
8 particular aspect of OTIB-70 -- that is, this
9 -- the way in which it is being applied here.

10 So there is still lots of
11 discussion going on regarding OTIB-70, but
12 this particular aspect of it has been -- in
13 SC&A's perspective been resolved.

14 MEMBER BEACH: Correct. Okay.

15 DR. NETON: I will mention that I
16 am slotted to give a presentation on OTIB-70
17 at the upcoming Advisory Board meeting. That
18 was requested by, I believe, Dr. Melius.

19 MR. KATZ: Right. This is Ted.
20 And that's on the first day in the morning.

21 CHAIR ROESSLER: This is Gen. Our
22 Work Group report is on the second day, I

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1 think.

2 MR. KATZ: That's correct. So
3 everyone will have the advantage of that
4 discussion before you get to the discussion
5 about Linde.

6 CHAIR ROESSLER: This is Gen. The
7 other thing it seems that we need to do is to
8 -- and if this is permissible -- is for me or
9 someone to contact Dr. Melius and see if we
10 can ask him to be much more specific, and I
11 can ask him some questions and give some of
12 our discussion from today, ask him to be much
13 more specific about his concerns because I
14 think we really -- it seems to be the crux of
15 the whole situation, and we really need to
16 clarify it at the Board meeting. If we can't
17 clarify it, I hate to see that we would delay
18 any further on this.

19 MEMBER LOCKEY: And, Gen, I agree
20 with that. I think we have to make it -- the
21 decision for the benefit of the workers rather
22 in carrying this forward again.

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1 Chris? This is Jim Lockey.

2 MR. CRAWFORD: Yes.

3 MEMBER LOCKEY: Chris Crawford,
4 let me ask you a question about the
5 sandblasting that was done. Was that -- how
6 complete was that?

7 MR. CRAWFORD: Complete in the --
8 the decon period?

9 MEMBER LOCKEY: Right.

10 MR. CRAWFORD: Well, they did a
11 building survey. I think they took like 7,000
12 readings in Buildings 30 and 31 at least. And
13 where there was areas of high contamination,
14 they used several methods, including
15 sandblasting, chipping, jackhammering, I
16 believe they used blowtorches --

17 DR. NETON: And they also cemented
18 over areas that couldn't be cleaned.

19 MR. CRAWFORD: Right. They
20 washed, they vacuumed, they painted and
21 cemented over, they removed wood and concrete.

22 DR. NETON: But that's not to say

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1 that it was perfectly clean.

2 MR. CRAWFORD: Right. But we do
3 have quite a good record of the before and
4 after readings, which indicates that a lot of
5 material was in fact removed. And what was
6 left was mostly fixed contamination at fairly
7 low level.

8 MEMBER LOCKEY: Chris, could it be
9 possible that you could present that data also
10 at the next Board meeting?

11 MR. CRAWFORD: Yes, during the
12 Linde discussion, I would be happy to. Also I
13 can put the -- I believe it's the Heatherton
14 document that has that information on it. I
15 can put that in the Board's area, and I'll
16 send out a note to everyone.

17 MEMBER LOCKEY: That would be
18 helpful. I'd like to look at that again.

19 MR. CRAWFORD: It may already be
20 there, Bomber tells me. But if so, I'll give
21 you a pointer to it.

22 MEMBER LOCKEY: Perfect.

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1 CHAIR ROESSLER: Since the last
2 Board meeting, it seems that the presentation
3 should revolve around the bounding doses in
4 the tunnels using this new approach. And
5 then, also, since the question has come up
6 about the bounding in the buildings,
7 particularly Building 30, I think that it
8 would be appropriate, Chris, for you to
9 address that as Dr. Lockey has suggested.

10 MR. CRAWFORD: I will be happy to
11 do that, Gen. You mean at the meeting, I
12 assume?

13 CHAIR ROESSLER: At the meeting.
14 I think we have to assume that the Board will
15 need a review and a summarization of the main
16 items that might be of concern.

17 MR. CRAWFORD: Again, I'll be
18 happy to do that.

19 CHAIR ROESSLER: Does anyone else
20 have any enlightenment on Dr. Melius's
21 comments or anything else that we need to
22 discuss?

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1 (No response.)

2 Ted, are we inviting petitioners
3 to make comments at this time? Is that --

4 MR. KATZ: Yes. I mean, I think
5 you should, but -- and then, I think you
6 probably need just to wrap up and recap what
7 it is you're going to be -- who is going to be
8 presenting on what at -- for the Work Group.

9 CHAIR ROESSLER: Right. I think
10 that is the main -- main item that we have to
11 decide is how we are going to make the
12 presentation, who is going to present at the
13 Board meeting.

14 So then I think it would be
15 appropriate at this time for, Antoinette, if
16 you wish to make some comments.

17 MS. BONSIGNORE: I don't have any
18 comments to make, Gen. Thank you.

19 CHAIR ROESSLER: Okay. And Linda
20 I think is on the line.

21 MS. LUX: Yes. I don't have any
22 comments right now either. Thank you.

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1 CHAIR ROESSLER: Okay. Now I
2 think what we need to talk about at this point
3 is the Work Group's evaluation of where we're
4 at. The last time we had a Work Group meeting
5 where we actually tried to take a vote we came
6 out -- with a Work Group of four we came out
7 two and two. Two of us said that we went
8 along with the NIOSH recommendation that they
9 could do dose reconstruction for this period
10 of time, and I think two have some concerns
11 about that.

12 Do any of the Work Group Members
13 want to make comments on where they're at on
14 their evaluation at this point?

15 (No response.)

16 Was I on mute or something?

17 (Laughter.)

18 MEMBER LOCKEY: No, this is Jim
19 Lockey. I think that the -- I think we can do
20 dose reconstruction during this period. I
21 think that we have answered all the questions
22 we can answer. I do need some clarification

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1 about the direction that Jim is going, and
2 that will be probably a topic for the Board
3 meeting as a whole.

4 But in relationship to this
5 particular petition, I think we can do dose
6 reconstruction in a manner that is claimant-
7 friendly.

8 CHAIR ROESSLER: Josie or Mike, do
9 you have comments?

10 MEMBER GIBSON: Well, this is
11 Mike. I'm just a little hesitant to give my
12 comments. It seems that comments made about
13 people who have experience out in the field
14 that's practical -- and it's outside the realm
15 of science -- they seem to be pigeonholed.

16 So just suffice it to say that I'm
17 not totally in agreement with using data from
18 one time period to try to evaluate what went
19 on in another time period, and that is based
20 on my pigeonholed experience that when
21 contamination areas in a renovation -- in a
22 decon period are just cemented over, as has

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1 been discussed, and then those are
2 jackhammered up in a later time period, you
3 don't have the same -- you can't use the same
4 data from one period to another.

5 CHAIR ROESSLER: So if we, at the
6 Board meeting, present a motion that we feel
7 that dose reconstruction can be done for this
8 site during those time periods, would you then
9 -- I would assume that -- well, I'm not going
10 to assume. Would you vote for or against it?

11 And I guess based on that, then, we need to
12 decide how we would handle this.

13 I guess, really, I am kind of
14 getting you in the corner I think. Mike, what
15 I would like to ask is when we make this
16 presentation, would we do it similar to the
17 presentation we did the last time to the Board
18 where I try to present, Dr. Lockey and I would
19 present what we feel the conclusion is, and
20 then, if you, Mike and Josie, wish to make
21 comments with your concerns, does that seem
22 like the right approach, so that the Board has

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1 everything on the table to evaluate?

2 MEMBER GIBSON: Well, actually, I
3 gave my opinions on that before the last Board
4 meeting. And no one seemed to -- or at least
5 some Work Group Members didn't seem to agree
6 with it.

7 But I think that Wanda did an
8 excellent job in an older previous Work Group
9 meeting when the Work Group was divided, she
10 was the Chair of the Work Group, and she got
11 up and she presented the timeline and what had
12 been discussed and that two Members agreed,
13 two Members disagreed, here's why. It saved
14 time. And then the Board had the time to just
15 have an open discussion and ask questions that
16 they thought were relevant.

17 CHAIR ROESSLER: Okay. Well, I
18 think I can do that. I would certainly,
19 first, contact Dr. Melius and get some
20 clarification on his comments. But then I
21 could present pretty much what we presented at
22 the last Board meeting, but update everything

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1 with the new ER.

2 I will certainly comment that SC&A
3 has concurred with the approaches that NIOSH
4 would plan to make, and then I would try to
5 summarize your comments, Mike, and I think
6 Josie's comments, if that seems appropriate.

7 MEMBER BEACH: Gen, this is Josie.

8 I think that sounds like a good approach to
9 me as well.

10 MEMBER GIBSON: This is Mike.

11 It's fine with me.

12 CHAIR ROESSLER: There's not a lot
13 of time between now and the Board meeting, but
14 what I'd like to do is put something together
15 and pass the -- put a presentation together --
16 no, let me back up a bit -- try to contact Dr.
17 Melius, then put a presentation together, pass
18 it by all Work Group Members, and then we'll
19 go from there.

20 MEMBER LOCKEY: Gen, this is Jim
21 Lockey. Sounds fine with me.

22 CHAIR ROESSLER: Okay. And we

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1 will also expect NIOSH and SC&A to be on board
2 to go over a few specific things, just to
3 present the approach that they are taking, as
4 we have done in this meeting today.

5 DR. MAURO: Gen, would you be
6 looking for SC&A just to answer any questions
7 or to come up to the mic, or Steve could be on
8 the line, and Bob on the line? If there are
9 any questions for SC&A, either I -- if I can
10 handle it, I will, because I will be there.
11 But Bob and Steve are not planning to attend
12 the meeting, but they certainly could be on
13 the phone to answer questions.

14 The reason I ask the question is
15 if you're looking for an SC&A presentation,
16 then I would suggest that Steve physically
17 participate at the meeting and make that
18 presentation.

19 CHAIR ROESSLER: You know, John,
20 at this point, I don't think it would be
21 necessary since they could be available by
22 phone. And I think you have always stepped up

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1 to the plate and have been able to summarize
2 and interpret and comment on any issues. I
3 would think that would be fine for you to be
4 at the meeting and have Bob and Steve
5 available by phone.

6 DR. MAURO: Very good. No, that's
7 fine. I just wanted to make sure. Okay.

8 CHAIR ROESSLER: Okay. Is there
9 anything else that we need to discuss, or do
10 we have a plan?

11 MEMBER LOCKEY: It sounds like we
12 have a plan.

13 MEMBER FIELD: Gen, when you send
14 -- this is Bill. When you send out your --
15 what you are going to present at the meeting,
16 you know, just make sure you give us a time
17 that you need it back by.

18 CHAIR ROESSLER: Oh, sure. Okay.
19 Will do. Well, let's see, this is Monday,
20 the -- I think our presentation is a week and
21 a day from now. I'll try and get something
22 out within a couple of days and expect a

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1 response perhaps by Friday. I'm kind of going
2 off the top of my head here. People will
3 probably be traveling already on Monday or
4 Tuesday of next week.

5 MEMBER FIELD: Right.

6 CHAIR ROESSLER: I'll try and --
7 I'll try and get in touch with Dr. Melius
8 later today or early tomorrow. I'm on travel
9 today, too. And then get something put
10 together fairly quickly. Let's say I'll try
11 and get it out to you by Wednesday.

12 MEMBER BEACH: That sounds
13 reasonable, Gen. Thanks.

14 CHAIR ROESSLER: Okay. Anything
15 else that we need to cover?

16 (No response.)

17 Okay. Ted, is there anything that
18 you can think of?

19 MR. KATZ: No, I think -- I think
20 you're in good shape. Gen, if you need -- if
21 you need Dr. Melius's phone number, I can
22 email it to you.

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1 CHAIR ROESSLER: I didn't hear
2 that.

3 MR. KATZ: If you need Dr.
4 Melius's phone number -- I don't know if you
5 have it -- I can send it to you.

6 CHAIR ROESSLER: Oh, that would be
7 good if you could send it. And I was thinking
8 of communicating with him by email because -

9 MR. KATZ: That's fine, too.

10 CHAIR ROESSLER: Yes. I think
11 that's a little bit better. You have written
12 -- a written record of what you have
13 discussed.

14 MR. KATZ: Sure. Okay.

15 CHAIR ROESSLER: But send me his
16 phone number anyway, just in case.

17 MR. KATZ: Okay. I'll do that.

18 MEMBER LOCKEY: Hey, Ted, Jim
19 Lockey. Give me a call when you get done,
20 would you?

21 MR. KATZ: I will do that. Do you
22 want to email me your number, or do you want

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1 to tell it to me on the phone?

2 MEMBER LOCKEY: That's fine.
3 (513) 558-0030.

4 MR. KATZ: I'll call you right
5 after this.

6 MEMBER LOCKEY: Okay. Thanks,
7 Ted.

8 CHAIR ROESSLER: Okay. Well,
9 thank you, Board Members and NIOSH, SC&A, and
10 all others. I think we're finished.

11 MR. KATZ: Thank you, everybody.

12 (Whereupon, the above-entitled
13 matter went off the record at 12:01 p.m.)

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