

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

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NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH
ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

+ + + + +

WORK GROUP ON THE AREA IV OF THE SANTA
SUSANA FIELD LABORATORY SITE PROFILE AND SEC

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FRIDAY, APRIL 17, 2009

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The meeting convened at 10:00 a.m.
in the Zurich Room of the Cincinnati Airport
Marriott Hotel, Hebron, Kentucky, Michael
Gibson, Chairman, presiding.

PRESENT:

MICHAEL H. GIBSON, Chairman
JOSIE M. BEACH, Member
WANDA I. MUNN, Member
PHILLIP M. SCHOFIELD, Member

THEODORE M. KATZ, Acting Designated Federal
Official

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IDENTIFIED PARTICIPANTS:

NANCY ADAMS, NIOSH Contractor*
TERRIE BARRIE, ANWAG*
HANS BEHLING, SC&A*
GREG BERONJA, SC&A
LIZ BRACKETT, ORAU*
RAY CLARK, ORAU*
JACK FIX, ORAU*
ELIZABETH HOMOKI-TITUS, HHS*
EMILY HOWELL, HHS
LARA HUGHES, NIOSH
BONNIE KLEA, Petitioner*
ROY LLOYD, HHS*
JOHN MAURO, SC&A
ROBERT MORRIS, ORAU*
JIM NETON, NIOSH
GENE POTTER, ORAU*
ADAM SALKIN, Public*
JOHN STIVER, SC&A
ELYSE THOMAS, ORAU

*Participating via telephone

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TABLE OF CONTENTS

	<u>PAGE</u>
Introductions	4
Review of Site Profile Issues Matrix	11
SC&A Action Items	12
NIOSH Action Items	50
Review of SC&A SEC Petition and Evaluation Report and Issues Matrix	112
Action Items and Path Forward	169

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P R O C E E D I N G S

(9:57 a.m.)

1
2
3 MR. KATZ: Good morning. This is
4 Ted Katz, the Advisory Board on Radiation and
5 Worker Health, and this is the Santa Susana
6 Working Group, and we're just coming on line
7 now.

8 Let me just check the phone lines
9 and see. Do we have any Board members on the
10 phone?

11 (No verbal response.)

12 MR. KATZ: Okay. So Mark was
13 possibly going to call in. No Mark, and then
14 we have the rest of our Board members here.
15 So we're going to start right away beginning
16 with roll call, and for everybody in roll
17 call, government and contractors and so on,
18 please also state your conflict of interest
19 situation.

20 So beginning in the room with Board
21 members. Mike.

22 CHAIRMAN GIBSON: Mike Gibson,

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1 Chair of the work group. No conflict.

2 MEMBER SCHOFIELD: Philip
3 Schofield, Board member. No conflict.

4 MEMBER BEACH: Josie Beach, Board
5 member. No conflict.

6 MR. KATZ: Wanda.

7 MEMBER MUNN: Wanda Munn, Board
8 member. No conflict.

9 MR. KATZ: All right, and I think
10 on the line we don't have Mark right now who
11 is the alternate for this, and there are no
12 other Board members on the phone; is that
13 correct?

14 (No verbal response.)

15 MR. KATZ: Okay. But in the room,
16 the NIOSH ORAU team, please.

17 MR. NETON: Jim Neton, OCAS. No
18 conflict.

19 DR. HUGHES: Lara Hughes, OCAS. No
20 conflict.

21 MR. KATZ: And are there any NIOSH
22 ORAU team on the line?

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1 MR. MORRIS: Robert Morris, ORAU
2 team. No conflict.

3 MR. KATZ: That's Robert Morris.

4 MS. BRACKETT: Liz Brackett, ORAU
5 team. No conflict.

6 MR. KATZ: Welcome, Liz.

7 MR. POTTER: Gene Potter, ORAU
8 team. No conflicts.

9 MR. KATZ: Okay. Then how about
10 SC&A in the room?

11 DR. MAURO: John Mauro, SC&A. No
12 conflict.

13 MR. BERONJA: Greg Beronja, SC&A.
14 No conflict.

15 MR. STIVER: John Stiver, SC&A. No
16 conflict.

17 MR. KATZ: Are there any other SC&A
18 on the line?

19 (No verbal response.)

20 DR. MAURO: Not yet.

21 MR. KATZ: Okay. You're expecting
22 some then. Great. Okay.

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1 And then we have?

2 MS. THOMAS: I'm Elyse Thomas, and
3 I'm with the ORAU team.

4 MR. KATZ: Did I just skip you
5 somehow?

6 MS. THOMAS: Yes, kind of went
7 right on to the next group, but that's fine.

8 MR. KATZ: Oh, I'm sorry.

9 MS. THOMAS: And I have no
10 conflict.

11 MR. KATZ: You've got to get your
12 word in quickly. Sorry, Elyse.

13 MS. THOMAS: No problem.

14 MR. KATZ: Okay, and then we will
15 have in the room, but we don't right now one
16 HHS employee, but we can get her to identify
17 when she comes in.

18 On the line do we have anybody from
19 HHS or other federal employees?

20 MR. LLOYD: Roy Lloyd. No
21 conflict.

22 MR. KATZ: Welcome, Roy.

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1 Okay. Then how about petitioners?

2 Do we have any petitioners on the line?

3 MS. KLEA: Bonnie Klea, petitioner.

4 MR. KATZ: Welcome, Bonnie.

5 MS. KLEA: Thank you.

6 MR. KATZ: And any other members of
7 the public or staff from congressional
8 offices?

9 MR. SALKIN: I'm from the public.
10 Adam Salkin.

11 MR. KATZ: Adam Salkin?

12 MR. SALKIN: Yes.

13 MR. KATZ: Okay. Thank you.
14 Welcome.

15 MS. BARRIE: This is Terrie Barrie
16 with ANWAG.

17 MR. KATZ: Oh, welcome, Terrie.

18 MS. BARRIE: Good morning.

19 MR. KATZ: Okay. Anyone else from
20 the public?

21 (No verbal response.)

22 MR. KATZ: Okay. Then that covers

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1 roll call.

2 MS. ADAMS: Ted, it's Nancy.

3 MR. KATZ: Oh, Nancy. Sorry. I
4 should have said contractors, too, I guess.
5 Welcome, Nancy. Nancy Adams, contractor to
6 NIOSH.

7 MS. ADAMS: NIOSH.

8 MR. CLARK: Ray Clark with ORAU is
9 here.

10 MR. KATZ: Oh, okay, another. Ray
11 Clark. Thank you.

12 MR. FIX: Jack Fix, ORD.

13 MR. KATZ: Jack Fix. We have quite
14 a cast.

15 Any others?

16 (No verbal response.)

17 MR. KATZ: Okay. Then for everyone
18 on the phone, just to remind you, please,
19 please, mute your phones except when you're
20 speaking. Star-six if you don't actually have
21 a mute button, and please do not put the call
22 on hold. If you need to go somewhere, just

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1 disconnect and call back in because the hold
2 will mess up the line for everybody.

3 Thank you.

4 I'm sorry. The mute is star, the
5 star sign on your phone and then six. It will
6 mute your phone.

7 Mike.

8 CHAIRMAN GIBSON: Okay. The agenda
9 we've got set up for today is to review the
10 site profile issues matrix. That's kind of
11 like a little bit of history of where we've
12 been since the last time we met.

13 The Board assigned SC&A to do an
14 SEC petition evaluation. So that will be the
15 second item on the agenda.

16 And then once we cover that
17 information and probably after lunch some time
18 early this afternoon, then if there's any
19 claimants or advocates on the line that feel
20 we may have missed some things that they feel
21 are important, they can raise the issues at
22 that time and then we'll take them under

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1 consideration.

2 And then finally the action items
3 and path forward to close out the day.

4 So with that, I'll turn it over to
5 SC&A for the site profile issues matrix.

6 MR. KATZ: And let me just note
7 Emily Howell from HHS has joined us.

8 MR. BERONJA: Good morning. This
9 is Greg Beronja. Again, I'm with SC&A, and as
10 Mike said, the first thing I'm going to do is
11 go through the site profile review. We have
12 an issues matrix for that, and what I'm going
13 to do is there's a number of these issues
14 which are more editorial in nature and we'll
15 pretty much kind of skip over those. There's
16 a couple issues where I think it will be
17 better to discuss during the SEC discussion,
18 and then there's a few where there are NIOSH
19 action items, and then we can talk about those
20 maybe in this context.

21 So I'm going to go through. I
22 guess folks on the phone, I apologize if you

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1 don't have this. I'll try and make sure that
2 you understand the issue and ask questions if
3 you have trouble following from the phone.

4 Yes, go ahead.

5 DR. NETON: I've got a question
6 about process here. We're going to do the
7 site profile and go over the issues and then
8 decide which ones are SEC issues?

9 I mean, to me right now we have an
10 SEC evaluation form on the table that has a
11 class that's already proposed to be added, and
12 I don't know that we want to go back and
13 tackle profile issues right now sort of
14 secondary to that.

15 Well, certainly it's Mike's, the
16 Chair's, prerogative, but I'm just sort of
17 wondering.

18 MR. BERONJA: I think the intent
19 really was to not really go over any, quote/
20 unquote, site profile issues.

21 DR. NETON: Okay.

22 MR. BERONJA: I think there were

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1 some issues here that naturally go into the
2 SEC where there were maybe action items on
3 NIOSH's part that will play a part in the SEC.

4 DR. NETON: Okay.

5 MR. BERONJA: So if there's
6 anything where you think I'm going into too
7 much detail --

8 DR. NETON: No, that's fine. I
9 just didn't want to get engaged in some
10 detailed discussions of some secondary set
11 profile issues that would take up most of the
12 day --

13 MR. BERONJA: No.

14 DR. NETON: -- and then we'd not
15 really get into the SEC issues.

16 CHAIRMAN GIBSON: That's mainly
17 just historical --

18 DR. NETON: Okay.

19 CHAIRMAN GIBSON: -- just to get us
20 all back up.

21 DR. NETON: That's fine.

22 MR. BERONJA: And my hope, although

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1 I haven't done many of these, is that we can
2 get through this in less than an hour at the
3 most, maybe even a little bit quicker, and I'm
4 going to go through these just by the issue
5 number and hopefully everybody in the room has
6 these.

7 Issue 4.1-1 was just the discussion
8 about the inconsistency of the presentation of
9 dates in the operation, and this is somewhat
10 of an editorial issue and somewhat of an SEC
11 issue that we will discuss in the SEC
12 discussion.

13 The same thing is true on 4.1-2,
14 which are names used to reference the site in
15 the document are not consistent. Again, it's
16 an editorial issue that I think when NIOSH has
17 time they're going to go back and address.

18 I'm going to move through these
19 pretty quickly. So if anybody has any
20 questions.

21 4.2-1, there's a discussion about
22 the sodium reactor experiment. Again, I think

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1 I'm going to skip this right now because this
2 is covered also in the site profile where
3 there's a NIOSH action item.

4 4.2-2 is a discussion about just
5 the composition of the work force, which I
6 think is being adequately handled. So I don't
7 want to really go into this, whether it's the
8 co-worker models that are being worked on or
9 other things.

10 4.2-3 is a lack of sufficient
11 detail to assess potential exposures to
12 workers. This is covered in more detail.
13 It's more specific responses in the SEC or
14 later on.

15 4.2-4 references an incomplete
16 listing of radionuclides, and I think there
17 this again is going to be covered in some of
18 the SEC issues, and I think NIOSH has said
19 that they're going to revise some of the
20 sections and tables of the SEC profile related
21 to this.

22 4.2-5 is a discrepancies in dates

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1 presented, and again, it's editorial that I
2 think will be fixed when NIOSH does some
3 revisions to the documents.

4 Again, 4.2-6 is a presentation of
5 the owners and operators, which was a little
6 bit confusing in the document, again,
7 editorial, and it will be addressed later.

8 Then we move to 4.3-1, is
9 insufficient guidance in TBD-3 to perform dose
10 reconstructions, and in going through these
11 things, I don't think that there's anything
12 that we need to discuss here. I think actions
13 as far as resolving some of these things or
14 how these things will factor and the SEC will
15 be discussed at that time.

16 4.3-2 talks about Table 3-2 in the
17 site profile that needs to be revised, and
18 again, this is an editorial thing that I think
19 NIOSH is going to address when they have a
20 chance. It was more of a clarification
21 related to the presentation of medical
22 exposures, but was discussed in 4.3-2.

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1 4.4-1 and 4.4-2 is improper use of
2 surrogate data for environmental exposure.
3 Again, the environmental exposure issue is
4 talked about in the SEC and we'll cover that
5 there.

6 4.4-3 development of breathing zone
7 air concentrations, I think NIOSH is going to
8 describe the basis for the factors used in
9 doing this in the next revision of TBD-4, and
10 this, again, will be covered maybe to some
11 small extent during the SEC discussion.

12 4.4-4 is justification for
13 assignment of external dose estimates is not
14 provided, and the NIOSH response to this was
15 it's being reviewed and will be described in
16 the next revisions of TBD-4.

17 Again, we have an SEC issue that
18 deals with some of the internal dosimetry that
19 we'll discuss during the SEC as well as there
20 are issues related to the external doses, and
21 I'd rather cover those there, but otherwise
22 some of these things will be revised

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1 editorially in the next revision of the TBD.

2 4.4-5 talks about consumption of
3 potable water. Again, we'll cover this in the
4 SEC. There is some information that SC&A had
5 noticed in some later documents that we think
6 should be factored in in looking at this, but
7 I think this is probably more of a dose
8 reconstruction issue than an SEC issue, but it
9 will be discussed later on.

10 4.4-6 talks about the sodium burn
11 pit and some other areas as radiation sources,
12 and again, this and the sodium reactor
13 experiment and a few other incidents will be
14 discussed during our discussion of the SEC.

15 4.5-1 internal monitoring was not
16 complete or well documented. Again, we've got
17 a discussion on internal monitoring in the SEC
18 review.

19 4.5-2 is the same thing, related to
20 internal dosimetry, and in fact, I think quite
21 a few of the next issues -- 4.5-3, missing
22 radionuclides is also addressed later. Four,

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1 point, five, dash, two talks about co-worker
2 model, and I think maybe we can just hold off
3 and talk about that as we get to the SEC, too.

4 4.5-5 is a very specific. It's the
5 real chronic intake should be used in
6 evaluating bioassay results, and I think NIOSH
7 is taking -- I think they've drafted OTIB-0068
8 to address some of the correction factors that
9 were noted in the site profile.

10 I guess that's -- is that final or
11 not?

12 DR. NETON: I'm not 100 percent
13 certain.

14 MR. BERONJA: Okay.

15 DR. NETON: I can look.

16 4.5-6 talks about inconsistencies
17 between MVA values described in the text and
18 the ones reported in a table. Again, I think
19 this is more of an editorial issue that will
20 be cleaned up when the TBD is revised.

21 4.5-7 talks about clarification of
22 the MVA related to testing methodology. I

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1 think the response here talked about some of
2 the analytical methods used for uranium, as
3 well as some of the other analytical methods
4 used from '75 to '88 are going to be
5 investigated by NIOSH to determine whether the
6 fluorometric and radiometric methods were used
7 for uranium samples as well as potentials for
8 exposure.

9 So I think that we can talk about
10 that more in relation to the SEC.

11 4.5-8 is, again, just a
12 presentation of dates that's going to be
13 fixed. Again, a somewhat minor issue.

14 4.5-9 talks about neptunium and
15 depleted uranium not included in the table,
16 which again will be revised the next time
17 around. I'm just looking at some of the
18 specific responses here.

19 I think this one is okay. We'll
20 talk about that related to the SEC, too.

21 And then there's the specific issue
22 of 4.5-10 on the inappropriate solubility type

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1 for lung cancer. I think here OTIB-71 was
2 developed to cover uranium aluminide, and so I
3 think we do have coverage there as far as the
4 specific approach to doing that.

5 I don't know, John. Is there
6 anything else related to that?

7 DR. MAURO: From a perspective,
8 you'll notice that at the bottom of each of
9 these briefings on the status of these issues
10 related to site profile there is a
11 characterization as to whether we consider it
12 to be an SEC or non-SEC, and I think it's
13 important that everyone start here, and
14 everyone is looking at the SEC when we get to
15 that point.

16 We realize that it's really not our
17 call of what is and what is not an SEC issue,
18 but we do give our opinion where it starts to
19 lean toward.

20 So I think it's helpful to start
21 with the site profile of all, all the issues,
22 and then quickly triage down to the places

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1 where, you know, at least we felt represent
2 SEC issues, and then we'll go into those
3 later, but I would not want to preclude the
4 work group from looking at this and saying,
5 "Well, wait a minute. I think maybe this
6 should be an SEC issue." It's important that
7 that be done. Okay?

8 MR. BERONJA: Thanks, John.

9 I'm going to move on to 4.5-11.
10 Again, this talks about elements presented in
11 TBD-2, which provided a background of the
12 site, are not addressed in TBD-5. Again, this
13 is more of an editorial issue, although it
14 does plug into the internal dosimetry and were
15 the proper radionuclides being monitored. So
16 it will factor into that discussion later on.

17 4.5-12 talks about value reported
18 by the contract laboratory. Again, I think we
19 determined last time around that this was not
20 a significant issue. So we'll move on from
21 there.

22 4.5-13, the evaluation of uranium

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1 bioassay data, again, we've kind of already
2 talked about this, and I apologize. I think
3 this was noted in the last time around. There
4 are a few issues here. We were following the
5 TBDs, you know, kind of one through six. So
6 we had issues associated with them, and some
7 of them were kind of repeats or overlapping.
8 So I apologize for that.

9 4.5-14, personnel exposure records
10 do not appear to be complete or of good
11 quality, and, you know, I think in going
12 through the SEC review we've tried to go
13 through and look at a lot of the information
14 and pull out if we thought there was
15 sufficient information to be able to do dose
16 reconstructions or, in general, is there
17 sufficient information that you could
18 determine if there's enough information there
19 to do anything.

20 So I think we've done that
21 analysis, and that will come through in our
22 discussion of the SEC review.

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1 4.5-15 talks about site survey data
2 source term cannot be regarded as useful
3 surrogate data for bioassay data and the dose
4 reconstruction.

5 I think this is going to link into
6 NIOSH's progress related to some co-worker
7 models and internal dose co-worker models. So
8 maybe we can hold off. I think early on in
9 our SEC discussion maybe you guys can talk
10 about the status of those couple of efforts
11 which will address a number of questions.

12 I think that same thing holds for
13 4.5-16. Potential unmonitored internal
14 exposures associated with radiation incidents
15 are not addressed.

16 4.5-1 is no co-worker model on the
17 external side, and we'll get to that.

18 4.6-2 is workers were unlikely to
19 have been monitored for thermal neutrons, and
20 I think we need to have a discussion about you
21 guys were going to look at the whole neutron
22 issue related to Santa Susana.

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1 That neutron issue is also 4.6-3
2 and 4.6-4, and then really on 4.6-5 the
3 dosimeter response for low energy photons.

4 Let's see. I guess, this one,
5 John, you have that issue. So maybe if you
6 could.

7 DR. MAURO: Yes. We've identified
8 this as not an SEC issue because usually there
9 are ways of doing correction factors for
10 dealing with responsiveness to low energy
11 photons. So I see this as a side profile
12 issue. Whether or not the working group sees
13 it the same way, certainly, but like I said
14 before, I just want to alert you. This is
15 sort of the rock we started with and the full
16 breadth of issues that were raised. Many of
17 them are in the process of being resolved
18 because there has been a round of discussion
19 related to the site profile issues, and some
20 of them are really clearly SEC issues.

21 So I think the reason we're going
22 through this is we needed a jumping off point

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1 so that we're all on the same page, knowing
2 where we began, and it has been quite some
3 time.

4 MR. BERONJA: It has been since
5 August.

6 DR. MAURO: So please bear with us.
7 We thought it would be good to get a baseline
8 and then we move from there, and then we'll
9 quickly move into the SEC issues.

10 MR. BERONJA: Right.

11 MEMBER MUNN: Well, we did touch on
12 this in August, did we not?

13 MR. BERONJA: Yes.

14 MEMBER MUNN: I think we discussed
15 this.

16 MR. BERONJA: We did, and Lara and
17 I went back and forth a little bit on making
18 sure that we properly got NIOSH's responses in
19 here.

20 The other reason to go through
21 this, and I'm combining things a little bit,
22 is there are some action items that were

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1 identified in here that we wanted to follow
2 upon. I think we're going to hear about those
3 during the discussion of the SEC just to keep
4 this concise, and then depending on the status
5 of that, we can go back to this site profile
6 and decide if there's anything else that we
7 need to address here, given the action items
8 that they had out of this.

9 MEMBER MUNN: My comment was based
10 solely on this particular item.

11 MR. BERONJA: Right, okay.

12 MEMBER MUNN: I think this
13 particular item was discussed earlier.

14 MR. BERONJA: Oh, right.

15 MEMBER MUNN: And it was agreed.

16 DR. MAURO: And it was agreed, yes,
17 and it might be closed.

18 MR. BERONJA: Right.

19 MEMBER MUNN: Yes.

20 MR. BERONJA: 4.6-6, again, talks
21 about the surrogate time periods. Let me just
22 look at them specifically.

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1 Okay. This one was repeated from
2 an earlier one. So we don't need to talk
3 about that.

4 And then 4.6-7 talked about Area 1,
5 which is not -- I think it is stated it's not
6 part of the covered areas.

7 So anyway, that's that. In fact,
8 we did it a lot faster than I thought we
9 would.

10 I guess in going through that, like
11 I said, there are a number of action items.
12 In fact, as we go through the SEC discussion
13 if there's something from the site profile
14 that we don't hit on, I'll come back and make
15 sure that we address that just to finish off
16 the site profile, but I think we should be
17 able to get enough information during the
18 discussion of the SEC review to be able to, to
19 the extent that we need to, kind of close out
20 this issues matrix here.

21 So any questions on that before we
22 jump into the heart of the discussion here?

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1 MEMBER MUNN: I don't have any
2 questions. I have a request. The working
3 draft was a document that was sent to all of
4 us at one juncture, and I have suffered a
5 catastrophic failure of database with my
6 system. If we have an electronic copy
7 available on anybody's computer currently who
8 could send me another copy of that.

9 MEMBER BEACH: I have it on my
10 flash drive. You can pull it off if you want.

11 MEMBER MUNN: Good. I'll pull it
12 off.

13 MEMBER BEACH: Do you want to do it
14 now?

15 MEMBER MUNN: I'll do it later.
16 We're not going to be discussing it
17 specifically.

18 Thanks.

19 MR. BERONJA: All right. I guess
20 just a little bit of background, in
21 particular, for the folks on the phone as well
22 as people here.

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1 And let me just go back and
2 describe a little bit to kind of set the stage
3 for where we are right now. I think as most
4 of you know, SC&A was told to go ahead and do
5 the SEC review in September of 2008 at the
6 Redondo Beach meeting.

7 At that time, SC&A's contract, I
8 think, maybe only had just two or three months
9 maybe. I know there were some extensions, but
10 the life of the contract was uncertain.

11 So what was decided at that time
12 was to do what we call the paper study review
13 of the SEC. So we went ahead and did that.
14 That was actually published in January of 2009
15 and is posted on the Website. So if any of
16 you don't have it or want to have access to
17 it, it is on the Website under the Advisory
18 Board under Area 4. You should be able to
19 find it.

20 Since then, in the December work
21 group meeting, we were approved contingent on
22 us getting the contract and finishing off the

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1 SEC review, and we were successful in getting
2 the new contract. And then we went ahead and
3 finalized our SEC review.

4 Quite honestly, I think we were
5 able to do about 90 or 95 percent of our work
6 in that paper study. We were able to gather
7 the information that we needed to come to some
8 conclusion, and so, again, so what is included
9 in what is publicly available in that January
10 2009 report really has the essence of our
11 conclusions.

12 Since then we have finalized the
13 report, as well as an issues matrix, and they
14 both went to DOE for review on Wednesday of
15 this past week. They were both passed through
16 DOE review. They have not been Privacy Act
17 cleared at this point. So they are not
18 publicly available.

19 But I think folks in the work group
20 have actually received copies of both of those
21 things. So for those folks on the phone,
22 unfortunately, you know, unless you are part

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1 of the group that's able to receive that, you
2 don't have these documents. You know, you can
3 reference the paper study that we have where
4 most of these things are presented, and I'll
5 try and, to the extent that there's any
6 confusion, go through those.

7 So what I'm going to do is I'm
8 going to go through the issues matrix that has
9 been cleared by DOE, has not been Privacy Act
10 reviewed, and I'll be careful about any
11 specific information I reference.

12 I guess maybe just in preface, and
13 I don't know if this is the right thing to do
14 or not, but as a preface, there's going to be
15 about five or so major points that we're going
16 to cover in this discussion. Some of them I
17 think we're going to present. We've pulled
18 some information to get in. Quite honestly I
19 think we're going to shift the issues over to
20 NIOSH and to DOE to deal with, and then if
21 there's anything that we can do to follow up,
22 we can.

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1 And those issues are related to
2 what specific areas are covered by the SEC
3 petition, and the way the petition is
4 currently set up is it applies to Area 4 of
5 the Santa Susana Field Laboratory. However,
6 there is some conflicting information out
7 there both, I think, in the data base that
8 talks about the covered areas and so some
9 other documentation that we've got documented
10 both in the paper study, as well as the final
11 review and the issues matrix.

12 And I think that that issue needs
13 to be put to bed, and kind of linked into that
14 issue of what areas, you know, should be
15 covered are the data of operation. There was
16 some uncertainty there. I think the way
17 things -- and I think 1955, for instance, was
18 the date for Area 4. I think that's to some
19 extent in stone right now. However, there is
20 some conflicting information about when
21 operations started. Some information dates
22 back to 1953.

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1 In our issues matrix, this issue is
2 talked about in our issue number one, as well
3 as there's some discussion up front about
4 this. So I think looking at whether to be a
5 little bit more specific, whether some of the
6 outlying facilities need to be covered, you
7 know, they were addressed to a large extent in
8 the site profile. We need to do that.

9 So I don't know if the folks from
10 NIOSH or our DOE representative have any
11 thoughts. This might be a good time just to
12 talk about that, and then we can talk about
13 any more specifics if folks want.

14 So that's really the first issue
15 that I threw out.

16 DR. HUGHES: Just to clarify, this
17 is number nine on the issues matrix, right?
18 Just to make sure.

19 MR. BERONJA: It is. I think it's
20 our nine -- Yes.

21 DR. HUGHES: Sorry.

22 MR. BERONJA: It's number nine and

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1 it's our first, SC&A's first issue.

2 DR. HUGHES: Okay. I see.

3 MR. BERONJA: So, yes, it talks
4 about specifically as we look at it, you know.

5 Canoga Park and De Soto and Downey and
6 whether there's any other areas within the
7 Santa Susana Field Laboratory.

8 DR. HUGHES: But DOE got treated as
9 four separate sites. So would the SEC
10 petition -- the petitioner submits a petition
11 for a site, and this is clarified in the
12 consult call, for which site the petitioner
13 wants to petition, and that's the site that
14 the SEC report is issued for.

15 Now, the technical basis documents
16 can be combined for several sites if the sites
17 are related, as for example these four sites
18 are somewhat related in that they were
19 supervised by the same health physics
20 department, which was located at Santa Susana,
21 which was the largest site of those four.

22 As to the coverage states, DOE

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1 typically does some research into not
2 necessarily when the sites start operations,
3 but when nuclear operations start at a given
4 site. So I looked at some reports that sort
5 of outline what buildings were operating, and
6 I haven't really been able to pinpoint
7 anything that was in operating shape before
8 1955.

9 So, I mean, if you see any
10 information regarding that, if you could pass
11 it along, but as I said, we don't really look
12 at that. That's typically done by DOE who
13 determines which periods should be covered.

14 MR. BERONJA: Now, just a couple
15 references, and what I might do especially for
16 folks on the phone, and I apologize, you know,
17 for the documents, but if you look at one of
18 the things just on this particular issue, on
19 the coverage dates, in 4.2.2 and the paper
20 studies at page 25, there's a couple
21 references. I would just cite that as just
22 the information. You know, here it talks

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1 about nuclear R&D activities in Area 4
2 increased rapidly from 1953 into the late
3 1960, and then there's a number of statements
4 like this, you know. Either the site profile
5 needs to be cleaned up to not talk about
6 nuclear activities increasing from '53 to --

7 DR. HUGHES: What they were doing,
8 they were building the reactor facilities and
9 they were building facilities because there
10 was nothing there, as I understand, before.
11 So, I mean, the company was operating, but
12 they weren't actually running the reactors or
13 producing the fuel. So I think that's what
14 typically classifies the starting date.

15 MR. BERONJA: I guess as long as
16 that can be clarified maybe some of the
17 wording there, you know, it says nuclear R&D
18 activities increased rapidly. I mean,
19 activities, you don't know what kind of
20 activities they really were and whether what
21 you're saying is true, whether it was just
22 construction going on in '53 and '54 and the

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1 verbiage just wasn't very good. You know, as
2 long as we have that, but there really was no
3 fuel sources or whatever therein that time
4 frame or other potential exposures. I think
5 that would help.

6 I guess the other comment that I
7 wanted to make is that -- and I don't know how
8 this happened, and I guess maybe just for the
9 petitioner's sake -- I think when the original
10 petition was done, the original petition
11 included De Soto, and then when there was an
12 update to the petition, De Soto was taken out.

13 I think they also in the original
14 petition referenced the burn pit, and I think
15 that was ultimately all narrowed down to Area
16 4.

17 MS. KLEA: This is Bonnie. Can I
18 comment on that?

19 MR. KATZ: Yes, go ahead, Bonnie.

20 MS. KLEA: Okay. That reference to
21 De Soto was an accident. The first form I
22 filled out I thought they wanted my work

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1 history. So I put Area 4 and De Soto, and you
2 have mistakenly interpreted that as including
3 De Soto on my petition, which I did correct.

4 MR. KATZ: Okay.

5 MS. KLEA: I've never ever
6 petitioned for De Soto. I petitioned for Area
7 4 because I knew you could only do one area at
8 a time, and it was my mistake in just filling
9 out those forms.

10 MR. KATZ: Okay, okay.

11 MS. KLEA: So if I could just
12 correct that.

13 MR. KATZ: Thank you, Bonnie.
14 That's helpful.

15 MR. BERONJA: So there was no
16 intent, Bonnie, or desire on your part at the
17 time to do anything beyond Area 4.

18 MS. KLEA: That's exactly right
19 because that was the rule, and I was told that
20 it would be disqualified if I included
21 anything other than Area 4.

22 MR. BERONJA: Okay.

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1 MR. KATZ: The ground rules are you
2 can't --

3 MS. KLEA: That was a mistake on
4 filling out the form.

5 MR. KATZ: Bonnie, just to be clear
6 about what the rules are is a single petition
7 can only cover a single facility. You could,
8 of course, submit a separate petition for
9 another location, another facility.

10 MS. KLEA: Exactly, and who's
11 speaking?

12 MR. KATZ: I'm sorry. This is Ted
13 Katz.

14 MS. KLEA: Hi. Okay. No, I knew
15 the rules very well. It's just that the forms
16 were very confusing on submitting my petition,
17 and I thought that the form wanted my personal
18 work history, and that's what I put.

19 MR. KATZ: Thank you.

20 MS. KLEA: Okay.

21 MR. BERONJA: All right. Thanks.

22 In fact, I was just looking back at

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1 it and maybe, I guess, just given what Bonnie
2 has said as far as that clarification, that
3 helps a lot. The only other thing I'd say,
4 and I'm wondering if I have the specifics
5 here. I'm actually looking at 4.2.1 in the
6 paper study. It would be the same section,
7 should be in the same section in the final.

8 DOE in actually identifying the
9 covered sites has a database, and then also
10 things are listed in the Federal Register.
11 The last Federal Register notice that I had
12 showing the covered areas was August 23rd,
13 2004. I don't know if that's the most recent
14 one or not, but if you compared the database
15 in that Federal Register notice, they were not
16 consistent, and so maybe just for the future
17 so that there's no confusion, I think that
18 needs to be addressed, but maybe other than
19 that, I think this issue, other than maybe,
20 you know, on that date issue this thing can be
21 put to bed.

22 DR. NETON: I just want to be

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1 clear. You're saying that the Federal Register
2 notice was earlier than the --

3 MR. BERONJA: No, this is a
4 location issue.

5 DR. NETON: Oh, location.

6 MR. BERONJA: Yes, the covered
7 areas. The covered areas addressed in the
8 Federal Register notice was not consistent
9 with how it was presented in the DOE database.

10 DR. NETON: Okay.

11 MS. HOWELL: That's a DOL concern,
12 right?

13 MR. BERONJA: What's that?

14 MS. HOWELL: The Federal Register
15 notice, I mean, that would be a DOL-DOE
16 concern.

17 DR. NETON: Yes, yes, absolutely.
18 But our technical evaluation needs to be
19 consistent with what the most current
20 definition of facilities is. I mean, I
21 understand that. We certainly need to go back
22 and make sure that we're addressing the most

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1 current definition of facility.

2 There was a lot of issues early on
3 with what parts of those facilities were DOE
4 versus commercial, and I remember, you know,
5 four or five years ago there was a lot of
6 debate as to who was really covered at that
7 facility, and I think they finally
8 straightened it out, and that was the genesis
9 of those Federal Register notices.

10 We'll certainly go back and make
11 sure that we look at the most recent Federal
12 Register notice.

13 MR. BERONJA: Right, yes. I guess
14 maybe to close out these one or two issues,
15 however we want to describe these, is that --
16 and maybe, Lara, you can tell me if this is
17 okay -- if you guys can maybe just provide the
18 Board and use with information to document
19 that there were no source materials or other
20 things going on with '53 and '54 time frame,
21 then we can kind of say, okay, '55 really was
22 the first time that there was potential

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1 exposure.

2 I think as long as we have that as
3 an action item coming out of that, that should
4 close this out.

5 DR. NETON: Well, I think we would
6 have to go back and petition or submit that
7 information if there were materials to the
8 Department of Energy, and they would make the
9 determination that it was covered. We can't
10 ad hoc start covering exposure to --

11 MR. BERONJA: Oh, no. I don't mean
12 covering. I mean looking into maybe in more
13 detail whether there are activities going on,
14 and if there were activities, if there was
15 potential exposure in '53 or '54, then I would
16 think that we would go to DOE or DOL and --

17 DR. NETON: Yes, we would always do
18 that.

19 MR. BERONJA: Okay.

20 DR. NETON: Absolutely. That's our
21 normal mode of operation.

22 MR. BERONJA: So is that something

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1 you guys can do or do we --

2 DR. NETON: Yes, we'll certain take
3 that up. I guess I would suggest that this
4 shouldn't hold up the process here because
5 sometimes even if you identify additional
6 exposure, it takes the DOE or DOL quite some
7 time to come to resolution with those issues,
8 and so we could move forward with the
9 recognition that there may be some change in
10 the early period.

11 You know, we've already established
12 that we're recommending to add a class
13 starting in '55 already.

14 MR. BERONJA: Right.

15 DR. NETON: So it would merely just
16 be more than likely probably just retroactive,
17 go back and move it back to '53 if that indeed
18 were the case.

19 MR. BERONJA: Okay.

20 MR. MORRIS: This is Bob Morris.

21 MR. KATZ: Yes, Bob.

22 MR. MORRIS: Did I hear the action

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1 that's being -- will provide documentation
2 proving that there was no nuclear activity in
3 '53 and '54?

4 I don't know how we're going to
5 find documentation about something that didn't
6 happen.

7 DR. NETON: Well, yes. We need to
8 look at that, Bob, and see what actually did
9 occur, and in fact, if it's not covered by
10 Department of Energy prior to '55, yes, then
11 there's nothing more we can do.

12 MR. BERONJA: Oh, I agree.

13 DR. NETON: We're not required to
14 prove that nothing happened.

15 MR. BERONJA: No, no, no. It's
16 just due diligence to see if there's any
17 further information that something might have
18 happened.

19 DR. MAURO: Well, a lot of those
20 dates, the only reason why it came up is you
21 ran into some minor language --

22 MR. BERONJA: That language

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1 would --

2 DR. MAURO: -- that would pose that
3 question.

4 MR. BERONJA: Right.

5 DR. MAURO: By way of ground rules,
6 when we look at these documents, for example,
7 you're going to hear in a moment the
8 definition of the class itself. It should
9 have been monitored versus all workers and how
10 we have an issue related to date. When we see
11 something that catches our attention, it may
12 very well catch our attention, but it may not
13 be. It may be beyond the mandate of what
14 we're trying to do. We're certainly receptive
15 to let us know.

16 For example when we pick up
17 something that doesn't seem to ring true, we
18 think we have an obligation to pass it on
19 through that group and then, of course, the
20 work group at that point in time could
21 consider what they're going to do about it.

22 So you're going to hear another one

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1 in a minute related to the definition of the
2 class, I believe.

3 MR. BERONJA: Yes, maybe we can
4 talk about that right now.

5 DR. NETON: Another type of this
6 kind of issue. Why don't you go ahead?

7 MR. BERONJA: Yes. No, I think it
8 was our -- I think the language that was
9 included in the evaluation report talked about
10 all workers who were monitored. I think it's
11 our understanding that when the Board right
12 now is issuing a class, it's being applied to
13 all workers. There's no discussion about --

14 DR. NETON: It's sort of backwards.
15 I mean, NIOSH made a recommendation as to
16 what that class is, and typically the Board
17 would go along with an all worker definition,
18 and that's mostly in the context of the
19 Department of Labor being able to administer
20 the class.

21 In other words, you know, can we
22 provide them a class that they can actually

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1 address administratively? You can't start
2 getting down to specific occupational codes
3 because those, frankly, don't exist.

4 DR. MAURO: It's a little more
5 general. One of the things we both realize is
6 that when we saw the language, the class was
7 defined as all workers that were monitored or
8 should have been monitored, and it immediately
9 struck me that I think in general when the
10 language is put together, that parsing is not
11 made.

12 DR. NETON: I mean, if you look at
13 the Lawrence Livermore, I think, --

14 DR. MAURO: We did look at that
15 one.

16 DR. NETON: -- that definition, I
17 think the workers were monitored.

18 DR. MAURO: Okay.

19 DR. NETON: In a sense, if we have
20 very concrete evidence that anyone who entered
21 an area where radiological sources were
22 present, had a batch, I mean, they were

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1 monitored. Then that is essentially a
2 surrogate for workers who were exposed. We
3 could use that.

4 We thought that this was the case
5 at Santa Susana. In looking at this in some
6 more detail, we're starting to think that that
7 might not necessarily have been the case. And
8 given that, we're reconsidering that
9 definition.

10 DR. MAURO: Okay, but is this a
11 place for us? I mean, in other words, the
12 very fact that we brought something like this
13 up in our report, is this something that I
14 would say, well, really that's not within the
15 purview of SC&A?

16 This is the first time it came up.

17 DR. NETON: -- report on that, but
18 I think certainly you can bring up anything.

19 DR. MAURO: Sure.

20 MR. BERONJA: But what I'm hearing
21 you say, Jim, is that that's something that
22 you're reconsidering.

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1 DR. NETON: Yes. We thought we had
2 very solid evidence that anyone who entered
3 essentially the administrative area was going
4 to be wearing a badge and, therefore, we could
5 use that as an essentially surrogate for
6 people who are exposed, and those would be the
7 ones who would potentially receive more than
8 100 millirem, which is what that definition
9 was, or should have been monitored, but that
10 might not be the case; in fact, probably not.

11 DR. MAURO: Well, when we see
12 something that for better or worse we say,
13 "This doesn't seem to ring true," we'll bring
14 it to the attention of the Board, and then, of
15 course, we dispose of it.

16 DR. NETON: Right.

17 DR. MAURO: In fact, we won't put
18 any self-constraints.

19 DR. NETON: We've seen a shift in
20 some more recent SEC's where we don't even say
21 should have been monitored. We just say
22 all --

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1 DR. MAURO: That's what I'm talking
2 about. That was me. You know, Red brought it
3 to my attention, and I said, "Hum, I seem to
4 recall the language we're using now," you
5 know.

6 DR. NETON: Well, there's really no
7 hard and fast rule there. It's just a matter
8 of we use the data we have, and if there are
9 situations where we can conclusively guarantee
10 that everybody had a badge that entered RELAP,
11 we'd reserve the right to use that, but more
12 often than not that's not going to happen.

13 MEMBER BEACH: So we should see
14 that definition changing in the near future?

15 DR. NETON: I don't want to be so
16 concrete on that. I think we're considering
17 it, and it's more than likely to change, but
18 I'd like the folks, you know, the SEC team --

19 MS. KLEA: This is Bonnie.

20 Can I ask who's considering
21 changing that wording?

22 DR. NETON: That's NIOSH.

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1 This is Jim Neton speaking.

2 MS. KLEA: Okay, and who entered
3 that term? Because I do don't believe I had
4 that on my petition. I had all workers. I
5 didn't specifically say --

6 DR. NETON: That's correct.

7 MS. KLEA: -- only the monitored
8 workers.

9 DR. NETON: Right, and you're
10 right. And we modified that definition based
11 on some information we had at the time we did
12 the evaluation because we believed it to be
13 appropriate. In looking at it more closely,
14 it may not be the right way to go, and I'm not
15 saying --

16 MS. KLEA: Remember, Jim, you
17 specified that Boeing told you that
18 information.

19 DR. NETON: Right, right.

20 MS. KLEA: I remember that from
21 Redondo.

22 DR. NETON: Exactly, and you know,

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1 we certainly reserve the right to change our
2 mind when new information comes forward, and
3 that seems to be where we're at right now.

4 MS. KLEA: Well, I'm certainly a
5 witnessed. I was not monitored, and I had
6 free access to every building.

7 DR. NETON: Right.

8 MR. BERONJA: Jim, I'm curious how
9 you guys have done your evaluation part.
10 Administratively how does that happen and if
11 you guys change your mind? Is that something
12 that as you go to the full Board meeting --?

13 DR. NETON: We would issue an
14 amendment to the evaluation report and say
15 this is our current. This happens I won't
16 call it routinely, but it's not uncommon in
17 these deliberations and discussions for us to
18 change some of our positions and, in fact, add
19 more time or a different class of workers, and
20 we would enter, you know, a severely amended
21 evaluation to present to the Board for their
22 consideration.

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1 Usually we wait until the full
2 deliberations are over, although I'm a little
3 concerned on this one because we are holding
4 up the addition of a class for five years or
5 so, '52 to '58. So, you know, this is a
6 little different than the other ones where
7 NIOSH said, "Well, we can do all year," and
8 then, okay, we can go and deliver it. Right
9 now nothing is going to happen for this class
10 between '52 and '58 until we can do something.

11 DR. MAURO: The fact that right now
12 -- you bring up a very important point there.

13 DR. NETON: That's just a concern I
14 have.

15 DR. MAURO: And I think everyone
16 is. You'll see as we go through this we
17 concur with your finding regarding up to '58.
18 You'll see that we had some issues, and this
19 is going to really become the heart of this
20 discussion shortly, post '58, is are we in a
21 situation where until we resolve the post '58,
22 the out to '58 is --

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1 DR. NETON: No.

2 DR. MAURO: Good. That's important
3 to know because, you know --

4 DR. NETON: I think it's up to
5 Mike, the Chair, or the working group to bring
6 back to the Board an opinion that if it was
7 his opinion that we are more comfortable to
8 move forward, they might be changing the
9 definition of the covered worker. So we move
10 that issue.

11 DR. MAURO: Yes.

12 DR. NETON: And then we could re-
13 add an amendment, addendum and deal with the
14 first piece, get that voted on, and then have
15 this piece move on. But, again, that's a
16 process issue that the working group and Chair
17 can deal with.

18 DR. MAURO: Sure.

19 MR. BERONJA: Maybe just to
20 summarize kind of where we are, we talked
21 really about, I guess, three issues: the
22 areas covered, the dates, and now kind of the

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1 definition of the class.

2 So I think it sounds like at least
3 the areas right now is going to be Area 4.
4 The dates NIOSH is going to look at any other
5 and make sure there's nothing else that would
6 say that there were activities, nuclear
7 activities or potential exposure in the '53 or
8 '54 time frame, and then as far as class
9 that's in NIOSH's court as far as potentially
10 looking at the re-definitions.

11 So I guess with that I'm going to
12 now formally go through each of these issues
13 and the issues matrix, and for those folks,
14 you know, on the phone that don't have this,
15 what we're going to do is there were issues
16 that were raised by the petitioner that NIOSH
17 then responded to, and there were eight issues
18 in total there. We'll go through those
19 issues, and there were some issues that SC&A
20 raised, actually five issues, and we'll go
21 through each of those. Some of them actually
22 are overlapping.

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1 The first issue that was raised in
2 the petition and addressed through the
3 evaluation report was the sodium reactor
4 experiment incident. You know, NIOSH
5 presented in the site profile that they felt
6 they had sufficient information and that they
7 felt everybody that maybe would have been in
8 that area would have been properly monitored.

9 I guess when SC&A looked at that
10 information, we came across a couple of
11 reports that weren't referenced in the site
12 profile that we thought had some valid
13 information that should be considered and
14 which showed some of the potential at least
15 source terms and areas.

16 And I guess maybe with that I'd
17 just put it back to you guys. I don't know if
18 you were looking at the idea of developing a
19 model or some other further way to analyze the
20 potential exposures that occurred as a result
21 of that incident.

22 This incident is actually pretty

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1 important in the context of the SEC things
2 that occurred in 1959. So it occurred post
3 '58 SEC, you know, approved time frame from
4 NIOSH right now.

5 DR. HUGHES: Okay. To address your
6 first concern with these reports, we actually
7 have -- what NIOSH does is called due
8 diligence and data capture. So we look at all
9 of our available data source, and these
10 reports that you referenced were actually
11 reviewed, including a bunch, a large number of
12 other reports and memos. Pretty much anything
13 that was out there in the literature was
14 looked at.

15 It wasn't cited in the evaluation
16 report. It probably should have been cited,
17 but this particular section talked about the
18 releases that were to all these reports. They
19 talk about the different estimates of the
20 releases from the incident, and that's the
21 reports that were cited.

22 So this can certainly be corrected.

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1 Now, to your actually much more
2 important issue is you're concerned about the
3 monitoring situation in 1955. So we're
4 looking into that. Fifty-nine. I'm sorry.

5 And we're currently looking at some
6 -- since there is no consensus of the
7 releases, we're looking into having an
8 independent expert looking into the estimates
9 and come up with the most scientifically
10 defensible estimate an exposure model as a
11 result of that that could be used for workers
12 that -- the non-radiological workers that
13 might have been on site if there was an
14 exposure potential.

15 Another issue goes back to the
16 internal monitoring. So I don't know if you
17 want to discuss it here or if you want to
18 discuss it when you go with internal
19 monitoring.

20 MR. BERONJA: Maybe let's wait.
21 Let's wait.

22 DR. MAURO: For my benefit, you

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1 know, I've been tracking this. So the sodium
2 reactor experiment was an incident that
3 occurred post -- we'll define it as the
4 covered period for the purposes of this
5 discussion. So it becomes important.

6 Could you give us a little bit
7 conceptually what was the nature of the
8 incident and up until the review of this new
9 material, what did you have in mind as to how
10 you were going to deal with that and now how
11 is that possibly changing?

12 DR. HUGHES: Okay. The incident,
13 this was a fairly -- it's a 20 megawatt
14 experimental reactor that was sodium cooled.
15 The reactor cooled was underground and covered
16 with liquid sodium, and what happened, the
17 coolant got contaminated with an organic
18 material that caused the sodium flow to
19 interrupt in the fuel channels, and it caused
20 overheating, and actually the fuel cladding,
21 which I believe was -- do you know? Was it
22 aluminum? -- melted, and the fuel was solid

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1 uranium metal. So --

2 MS. KLEA: I'm having a hard time
3 hearing. Is that Lara Hughes?

4 DR. HUGHES: Yes. I'm sorry.

5 MS. KLEA: You're cutting out. I
6 can only hear half of what you're saying.

7 DR. HUGHES: Okay.

8 MS. KLEA: If you need to get
9 closer to the mic.

10 MR. KATZ: Yes, she's doing that.

11 DR. HUGHES: How is this? Is this
12 better?

13 MS. KLEA: Okay and I'm hearing you
14 say the cladding was cracked. Well, you know,
15 we have -- we had full-out meltdown of 13 fuel
16 rods, and I have three new witnesses that were
17 there.

18 DR. HUGHES: Yes. Well, the fuel
19 consisted of the uranium metal, which was
20 covered by cladding. So what happened, the
21 uranium formed -- it overheated and the fuel
22 rod essentially opened up, which you can refer

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1 to as the meltdown, and 13 of the fuel rods
2 were damaged.

3 MS. KLEA: Yes.

4 DR. HUGHES: So the issue is when
5 fission occurs in a nuclear reactor, you
6 produce what's called fission products, which
7 among others consist of iodine and cesium, and
8 the issue here is whether these fission
9 products were contained in the sodium

10 You have to see that the entire
11 reactor was covered with liquid sodium. It's
12 a very dense liquid, or whether these fission
13 products actually went out into the gas phase,
14 brought the reactor -- the reactor was covered
15 with a noble gas, gas blanket, and whether the
16 fission products were then released from the
17 cover gas system.

18 The entire reactor was also covered
19 with a pressurized gas system. So whether or
20 not these fission products escaped not just
21 the fuel and the coolant and the cover gas,
22 but from the cover gas into the atmosphere and

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1 might have exposed workers that were on the
2 site that might not have been radiological
3 workers.

4 If there was a large release, it's
5 absolutely conceivable that anybody that was
6 on site could have been exposed. Now --

7 MS. KLEA: We have a new eyewitness
8 who was there at the time as a reactor
9 trainee, and he's testified on film that they
10 had to bleed the reactor several times until -
11 - this is one of our biggest conflicts with
12 the program and with your point of view, that
13 we have expert testimony of a real meltdown
14 and releases.

15 DR. HUGHES: Yes, it's known that
16 some of these gases were released. The issue
17 is whether what these gases contained. It is
18 known that there were radioactive gases, noble
19 gases in the cover blanket.

20 What happens with this reactor
21 system, these gases are pressurized into a
22 tank where they're held until some of these

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1 fission products are gone. They are
2 radioactively decayed, and after which it's
3 what you referred to as bleeding, I believe,
4 that these gases are released to the
5 atmosphere.

6 But that is not all that unusual.
7 So the issue, what we're looking into is these
8 technical reports to see what could have
9 happened. Is it chemically and physically
10 possible for large amounts of iodine to be
11 released from the sodium into this gas?

12 I think the contention is not so
13 much that some of these gases were released.
14 That's actually fairly well documented. So
15 we're looking into that.

16 And if it turns out to be that
17 large amounts of iodine, for example, were
18 released, then we would come up with a release
19 model that would --

20 DR. MAURO: So I have to look at
21 these and conceptually. So conceptually what
22 we have is we have a containment system.

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1 DR. HUGHES: Yes.

2 DR. MAURO: There are several
3 barriers, plus the system that is containing
4 to the noble gases even if there were some
5 releases and up until, I guess, relatively
6 recently, the sensibility was a containment
7 system and it was unlikely that there was --
8 and you did actually bleed, which is part of
9 the process. All matters were controlled and
10 monitored so we have a degree of control and
11 we will know what's going on.

12 DR. HUGHES: Well, the incident was
13 not a controlled incident.

14 DR. MAURO: Yes, I understand that,
15 but as in any reactor transient, there are
16 design safety features which clearly come out,
17 and eventually there's a protocol by which
18 maybe you would burp. We burped the noble
19 gases from Three Mile Island under controlled
20 conditions.

21 DR. HUGHES: Right.

22 DR. MAURO: But you're saying that

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1 there's some new information or maybe not new
2 information. You're still looking into this
3 confirm that there was some -- that you
4 understand what the releases might have been.

5 DR. HUGHES: Right.

6 DR. MAURO: And whether or not they
7 might have been significant, and that's where
8 we are right now.

9 DR. HUGHES: That is correct, yes.

10 DR. MAURO: Okay, good. That helps
11 me.

12 DR. HUGHES: Did you want to add
13 anything?

14 DR. NETON: Well, it seems to me I
15 recall looking at this. There are sort of two
16 camps. There is one analysis put out by the
17 company, and then there was some additional
18 analysis that was part of a court proceeding;
19 is that right?

20 DR. HUGHES: That is correct, and
21 there were some like the Advisory Board, I
22 think, the Santa Susana Advisory Board, what

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1 they're called.

2 DR. NETON: So we have two reports
3 out there, section reports sort of on opposite
4 ends of the spectrum, very minimal release and
5 then large meltdown release and exposure of
6 workers. So we've decided to go commission an
7 independent review of both of those reports.

8 DR. MAURO: Excellent.

9 DR. NETON: And said which one
10 appears -- you know, let's let science prevail
11 here and say which one makes the most sense
12 scientifically, and of course, where there are
13 doubts we would probably err on the side of
14 the claimant.

15 That coupled with the fact that we
16 believe there are bioassay monitoring data
17 available to some extent that can cover and
18 bound these exposures, and that's part of
19 another discussion that I think we're going to
20 refer to later, refer to or talk about later,
21 that has to do with the internal co-worker
22 model yet to be developed for various reasons,

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1 and we can get into that.

2 DR. MAURO: That's very helpful.
3 Thank you.

4 MR. BERONJA: So, Jim, have you
5 picked somebody to do this study or is that
6 something you're -- where is the process right
7 now as far as this independent review?

8 DR. NETON: That's a good question.

9 DR. HUGHES: Yes. There's
10 currently like contract negotiations, you
11 know, with this expert.

12 MR. BERONJA: Oh, okay. So
13 somebody has been selected and it's just --

14 DR. HUGHES: Yes.

15 MR. BERONJA: -- negotiated with
16 them.

17 DR. HUGHES: Yes, true.

18 DR. NETON: A contract employee.

19 MR. BERONJA: And any idea how long
20 the study is going to take or when people
21 could expect to see the report? Do you know?

22 DR. NETON: No, I can't comment on

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1 that right now. We'll certainly update you.

2 MS. KLEA: Did you say you have a
3 contractor?

4 DR. NETON: We have a person lined
5 up and there are contract negotiations going
6 on right now.

7 MS. KLEA: When will we know who
8 that person is or what company he represents?

9 DR. NETON: Well, as soon as we get
10 the contract in place. I'm sorry, but I'm
11 not, you know, in that loop right now, but I
12 can assure you as soon as we know we'll make
13 it available to the working group.

14 MS. KLEA: Okay. Who's speaking?

15 DR. NETON: This is Jim Neton.

16 MS. KLEA: Okay. I'm very
17 concerned about a conflict of interest on the
18 person you hire to study it.

19 DR. NETON: Understood.

20 MR. BERONJA: Anything else on the
21 sodium reactor experiment? Otherwise we'll
22 move on.

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1 The second issue or I shouldn't say
2 "second." Another issue that was raised by
3 the petitioner related to radiation badges,
4 and it was based on a Tiger team report
5 indicating inadequate radiation badges.

6 I think NIOSH addressed this just
7 in the context of the state of the art at the
8 time and what was done, and I think in looking
9 at this we concurred with the information and
10 felt it was fine. So I don't think there's
11 any further discussion that's needed there.

12 DR. HUGHES: Okay.

13 MR. BERONJA: The third issue that
14 came up from the petitioner was related to
15 tritium plumes, and this gets back to folks,
16 you know, looking at the potential of exposure
17 pathway, of folks drinking water from the
18 aquifer at the site.

19 One of the things that we noticed
20 was that at least for one of the dose
21 reconstructions and maybe somewhere else that
22 NIOSH did look at this pathway. A very

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1 conservative model was developed. In fact, it
2 was based on water from a monitoring well, not
3 from a drinking water well, and there were
4 other conservative assumptions used.

5 The only issue that we had was that
6 the highest concentration use from the
7 monitoring well may have been from an earlier
8 time with some later information with a much
9 higher concentration, again, in the
10 monitoring well, not in the drinking water
11 well.

12 And, again, I don't necessarily see
13 this as an SEC issue, but as something that
14 needs to be fixed related to any dose
15 reconstruction. You're looking at that
16 particular tab. So I don't know if you guys
17 want to.

18 DR. HUGHES: Okay. We actually
19 have a small report prepared on that. Do you
20 want to talk about it now or when it comes up
21 later?

22 MR. BERONJA: Oh, why don't we talk

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1 about it now?

2 DR. HUGHES: Okay. I think Gene
3 was prepared to present this one. Is he on
4 the line?

5 MR. POTTER: Yes, I am.

6 DR. HUGHES: Okay. Would you like
7 to present it or do you want me to go over?

8 MR. POTTER: I can do it if
9 everyone can hear me okay.

10 MR. KATZ: Yes, we can hear you
11 well. Thanks, Gene.

12 MR. POTTER: Okay. I think you've
13 fairly well covered the background on what we
14 said in ER and so forth. So I'll skip that
15 part.

16 But in SC&A's summary, they mention
17 that NIOSH has proposed a boundless exposure
18 by assuming that workers consumed water from a
19 shallow monitoring well that had the highest
20 tritium concentration.

21 That statement is not correct. We
22 never said we were using it, going to use any

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1 values from the highest concentration, but
2 merely Well, 34A, in which tritium has been
3 consistently detected since 1991.

4 And then the comments where you
5 mentioned the value of 117,000 pico Curies per
6 liter. In fact, we had reviewed those reports
7 that you cited in your comments, the
8 environmental reports from 2003 to 2006, in
9 fact, based the mean value for Well 34A from
10 those reports, and 117,000 pico Curies per
11 liter was cited in actually the 2005 report.
12 That was for a well, which is a newer well
13 drilled much closer to the source, which is
14 assumed to be primarily Building 4010, where a
15 small reactor is operated in an activated the
16 shielding materials and earth around the
17 building.

18 So that was the basis for our
19 choice, not the highest values, and Well 34A
20 is down gradient, but somewhat north of
21 Building 4010, and I prepared some diagrams
22 out of the environmental reports, but I don't

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1 believe you have those unless I'm mistaken
2 because it was determined they had to be sent
3 for classification review.

4 MS. KLEA: Who is speaking?

5 MR. POTTER: Gene Potter.

6 MS. KLEA: Okay. Thank you.

7 MR. POTTER: And anyway, so the
8 first point is we did consider those reports
9 that were cited and picked Well, 34A based on
10 its history.

11 Since SC&A's comments were made,
12 the 2007 environmental report has been issued,
13 and so we looked at that for this review in
14 the last month or so, and there are several
15 wells that are in the general direction of the
16 supply well that was in Area 4, RD17, 27, 30,
17 63, 85, and 86, and other than Well, 34A,
18 which we used, there was only one other well
19 with a positive result, and that was RD63 on
20 February 16th, 2006, at 350 pico Curies per
21 liter, which is a value far smaller than what
22 we were using.

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1 And then it was followed at that
2 well with two samples in 2007 which were below
3 the detection level.

4 So in conclusion, I feel we've
5 addressed SC&A's comments to look at this
6 newer information, and we stick by our earlier
7 decision as the choice of a mean value for
8 Well, 34A adjusted for 40 years of radioactive
9 decay as being a conservative, yet somewhat
10 reasonable approach for bounding that dose.

11 That's all I have.

12 MEMBER MUNN: It's difficult to see
13 how one can tie with any degree of accuracy
14 measurements from this century with the time
15 element that's involved with this particular
16 SEC unless no activities occurred anywhere in
17 the area that would feed that aquifer, that
18 had anything to do with nuclear processes
19 following the period of the SEC.

20 MS. KLEA: Wanda, you're cutting
21 out. Can you get closer to the mic?

22 MEMBER MUNN: That's because I'm

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1 nowhere near a mic. Hold on.

2 MS. KLEA: Oh, okay.

3 MEMBER MUNN: It isn't reasonable
4 to assume that there were no activities
5 following the given SEC period, and if there
6 were activities following the SEC period, then
7 measurements that are made 50, 40, 30 years
8 later may have little direct bearing on events
9 that occurred during the five or six year
10 period that's being considered in the 1950s.

11 It may speak to general activities
12 on the site in whole, but it would seem those
13 higher values that were seen in the 2004,
14 five, six, whenever those measurements were
15 made would be very difficult to associate
16 solely with the SEC period. Is that not
17 correct?

18 MS. KLEA: I'm not understanding
19 what you're saying. No one really knows when
20 that tritium plume was released into the
21 ground. We're assuming it was from reactor
22 SNAP-8ER, which failed in 1964.

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1 MEMBER MUNN: Which is much later
2 than this period that we're speaking of here
3 today.

4 MS. KLEA: Right.

5 MEMBER MUNN: That's essentially
6 what I'm saying, Bonnie.

7 MS. KLEA: Right. Okay.

8 MR. POTTER: Let me just clarify.
9 I don't believe I agree with Bonnie's
10 statement that the source of this tritium had
11 anything to do with the failure of a reactor.

12 Its activation of the shielding materials,
13 concrete and so forth and the earth surround
14 from rather high neutron levels.

15 MS. KLEA: Wouldn't that come from
16 a reactor operation at that building?

17 MR. POTTER: Right, but you
18 mentioned a failure of some kind.

19 MS. KLEA: Well, it did. It was
20 shut down in 1964, and they lost 80 percent of
21 the cladding on the fuel rods.

22 MR. POTTER: But tritium is

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1 produced by a neutron activation of the
2 surrounding soil.

3 MEMBER MUNN: Yes, yes. Loss of
4 cladding doesn't necessarily translate to what
5 we're discussing here.

6 MS. KLEA: Well, actually no one
7 really knows exactly where that plume came
8 from because it was close to all of the
9 reactor buildings. They were all in one area,
10 and so the source point has not been found.

11 MEMBER MUNN: My comment was simply
12 on the timing more than anything else.

13 MS. KLEA: Okay.

14 DR. MAURO: Could I try something
15 out? So we do agree that some measurements of
16 groundwater were taken at some point in time
17 where we saw 117,000 pico Curies per liter.
18 Now, that might have been in some locations
19 which was isolated from sources of drinking
20 water. I'm not sure of the date when that was
21 collected, but the way I, again, visualize
22 what I'm hearing is that, yes, there are

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1 mechanisms whereby groundwater could have
2 become contaminated and may have been a
3 superficial aquifer in the immediate vicinity
4 of the aquifer that could have become
5 contaminated through a variety of mechanisms,
6 and in fact, obviously was because you don't
7 see that kind of level. I mean, I think you
8 just don't see that kind of level unless
9 there's a contaminating event.

10 And I think that the discussion
11 we're having now is that, okay, what do we do
12 about people who are drinking water from an
13 aquifer in the vicinity of this facility.
14 Perhaps it was not the aquifer that was
15 contaminated. Maybe it was an aquifer that's
16 clearly an unambiguously isolate or an aquifer
17 from that source of water.

18 And there is good reason to believe
19 that there's no way the tritium from this
20 source could have ever gotten to the real
21 drinking water source. I haven't heard that.

22 I guess that's what I was looking for.

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1 MR. POTTER: Well, that is, in
2 fact, the conclusion that one would come to if
3 you look at the monitoring wells which are all
4 fairly modern data, that, in fact, the tritium
5 from the vicinity of Building 4010 -- and
6 there may have been other buildings, as Bonnie
7 said, involved in this as well. The SNAP
8 reactor buildings are kind of in a cluster
9 there -- but the data would tell you that, in
10 fact, the tritium in the shallow monitoring
11 wells has only migrated a matter of a few
12 hundred feet in 40 years, and the one supply
13 well in Area 4, WS17, was somewhat up gradient
14 from the location of these buildings, and it
15 was a minor source of drinking water.

16 And since it has been sampled,
17 which is all fairly modern sampling, there's
18 no evidence of tritium contamination in that
19 supply well, and it is no longer used as a
20 well and hasn't been for years as a supply
21 well. I believe that ended in the early '60s
22 or mid-'60s, that it was even a source of any

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1 kind of drinking water for the site.

2 So one reasonable conclusion would
3 be that, you know, there was never any
4 contamination. However, since we don't have
5 sampling from 40 years ago, 50 years ago, this
6 is the approach that was selected.

7 MR. BERONJA: And have you
8 developed a paper or an issues paper or
9 developed diagrams on this then?

10 MR. POTTER: Yes. That was, as I
11 mentioned, it was determined. I thought this
12 was going to be able to go to the working
13 group, but it was determined that we should
14 send this for classification review even
15 though the source of this information is all
16 from publicly available documents.

17 MR. BERONJA: And I guess as part
18 of that report or maybe building on what John
19 said, maybe there's at least a demonstration
20 of the aquifers that are being monitored, as
21 well as the aquifers that are used for
22 drinking water, as well as any hydrogeologic

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1 aspects of this environment as far as
2 groundwater flow direction potentially
3 changing because of new populations or
4 anything else, just to kind of put this thing
5 to bed to say based on all of that -- I mean,
6 part of the problem might be that the model
7 was way more conservative than it needed to
8 be, but yet we saw some information, you know,
9 just maybe because we didn't look closely
10 enough that said, well, if you're going to do
11 this, then you should use this value.

12 But anyway, think that if what your
13 report shows is that, you know, the
14 groundwater flow direction has unlikely
15 changed, that there is a separation between
16 the monitoring of this aquifer and the other
17 aquifer, then you know maybe that hopefully
18 should put everything to rest here as far as
19 this being an issue.

20 MS. KLEA: Well, could I add
21 something? This is Bonnie.

22 We used wells in the other areas

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1 for supply wells, and they were known by OSHA
2 and Rocketdyne to be contaminated with
3 chemicals, and I have those records from the
4 Department of Health.

5 And also I found out that all of
6 the water runoff and waste water from Area 4
7 was piped into the other areas, and it went
8 into their water system. So all of the water
9 from Area 4 was used to spray the rocket
10 engine test when they fired. So anything in
11 that water would have been then re-suspended
12 in the air and would have gone into the
13 aquifer in other areas.

14 MR. BERONJA: I guess the one thing
15 is unfortunately we can't look at the
16 chemicals in this particular work, Bonnie.

17 MS. KLEA: Well, I understand that,
18 but the chemicals is an indication that the
19 contaminants have gotten into the wells, and
20 the fact is that the company never tested for
21 radionuclides in the drinking water ever until
22 EPA told them to, and that was in the late

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1 '90s when the tritium was discovered.

2 So they just didn't monitor. That
3 doesn't means it wasn't there.

4 MR. BERONJA: Yes, and probably the
5 best we can do right now is look at the
6 modeling that they're doing right now to say
7 whether it's likely given the monitoring
8 results that we have and the groundwater flow
9 direction and everything else to see whether
10 it's, you know, at all possible.

11 DR. HUGHES: Yes, if you look at
12 the maps of the site where the plume is
13 located, I mean, where the sampling was, to
14 narrow down the location of the plume is
15 fairly well out of line. I know the TCE
16 concern was because the other areas use TCE as
17 a degreasing agent of the chemical contaminant
18 that Bonnie refers to.

19 So it would have been a much larger
20 exposure source, I think, for that, but as you
21 said, there are reports out there that outline
22 the sampling that took place and where the

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1 plume is actually located and what the levels
2 are.

3 We haven't gone into any
4 hydrogeological discussion.

5 MS. KLEA: And Area 4 had its own
6 plumes.

7 CHAIRMAN GIBSON: I think what
8 Bonnie might be saying is you could use the
9 chemical as a tracer for the water being taken
10 somewhere else and then getting back into the
11 system.

12 MS. KLEA: Exactly.

13 DR. HUGHES: That's chemically very
14 --

15 DR. NETON: That's pretty dicey.
16 It's an analogy that I'm not sure holds very
17 well for a radionuclide versus an organic.

18 MEMBER SCHOFIELD: I've got a
19 question.

20 MEMBER MUNN: The reverse is true.

21 MEMBER SCHOFIELD: If during the
22 time frame when these reactors are going, were

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1 there samples done on supply well for
2 activated sodium? I realize this has got a
3 very short half-life, but my concern is, is
4 this supply well when they're run a source or
5 not, or was there any testing done for that at
6 all?

7 DR. HUGHES: They did not test the
8 water supply for radionuclides as far as I
9 know. They did not.

10 MR. BERONJA: Well, maybe the next
11 step on this, you know, if the Board would
12 want, if NIOSH can prepare a report on this,
13 if the Board wanted we could take a look at
14 this report.

15 DR. MAURO: I think the modus
16 operandi always is white paper issued by you
17 folks. If the Board wants us to look at it,
18 if the work group wants to look at it, we'll
19 look at it.

20 Certainly I think that the issues
21 raised here is that there may have been more
22 than one way in which tritium could find its

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1 way to drinking water supplies, is what I'm
2 just hearing. One way, the little model I had
3 in my head was somehow there might be a
4 connection between the superficial aquifer,
5 perhaps a deeper aquifer where the drinking
6 water is obtained from.

7 But it sounds like that you've got
8 arguments, strong arguments that that just
9 didn't happen, but now we're hearing that,
10 well, maybe there was some other way. The
11 drinking water aquifer might have been
12 contaminated.

13 I don't know, but in any event what
14 you have to do is sort of convince yourself.
15 Listen. You just can't conceive of a way in
16 which tritium could have gotten into the
17 drinking water supplies back in the late '50s,
18 early '60s, and that's a story that needs to
19 be told and we'd be happy to look at it.

20 MEMBER MUNN: And we do need to, I
21 think, limit ourselves pretty much to tritium
22 with respect to the specific radionuclide that

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1 Phil brought up earlier. You need to remember
2 that that particular radionuclide, whether
3 you're talking about activated sodium or non-
4 activated sodium, you're talking about one of
5 the most reactive chemical compounds that
6 exists, and sodium is not going to go
7 anywhere. It's going to react with water,
8 with air, with anything you can possibly
9 imagine. It's not going to become an aerosol
10 and be transferred into the water supply. As
11 soon as it touches water it turns into
12 something other than an activated compound.
13 It's going to stop.

14 MEMBER SCHOFIELD: Well, we do know
15 from Hanford though that some of the workers,
16 the water they were drinking did have
17 activated sodium in it. That's a proven fact
18 there at Hanford.

19 That's why I'm asking is it
20 possible the supply well during the operation
21 of the reactors, would this be a problem? I
22 realize it's going to only be a problem during

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1 the time the reactors are operating, but you
2 know, you have to look at this from an
3 internal exposure standpoint.

4 DR. HUGHES: It takes a while for a
5 chemical to get all the way down to the
6 groundwater, but you know.

7 DR. NETON: It can migrate through.
8 I don't know. We can look at this. I think
9 sodium was an issue raised somewhere else in
10 this review.

11 DR. HUGHES: It was raised as an
12 internal --

13 DR. NETON: An internal exposure
14 issue.

15 One thing I'd like to point out to
16 sort of bound this a little bit though is that
17 I don't think we're talking about a major dose
18 exposure pathway.

19 DR. MAURO: Well, the MCLs of
20 tritium are -- I'm trying to think of the
21 drinking water standards. You know, they're
22 pretty high, but I mean this number certainly

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1 is, you know, well above that. But I'm just
2 saying that --

3 DR. NETON: But the dose metrically
4 is --

5 DR. MAURO: Well, if it's 900, it's
6 four millirem per year. I'm drawing on my
7 memory of the drinking water standards, for
8 EPA, which didn't come out until 1976, but
9 somehow the number that sticks in my head is
10 four millirem per year associated with about
11 800 pico Curies per year.

12 DR. NETON: For continuous use.

13 DR. MAURO: Continuous, two liters
14 a day.

15 DR. NETON: This is work
16 environment, probably a little lower. So
17 anyway --

18 DR. MAURO: I was just trying to
19 set --

20 DR. NETON: Yes, and there's
21 certainly a dose that would need to be
22 considered in a dose reconstruction, but as

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1 far as assignment of dose, it's going to be
2 one of the more minor components.

3 DR. HUGHES: I think part of the
4 drinking water source was bottled water, but
5 part of it was also just groundwater. So I
6 think the workers were provided drinking water
7 that was shipped in from outside, but there
8 were also taps and coffee makers and things
9 like that.

10 MS. KLEA: I'd like to add a
11 comment here. This is Bonnie.

12 Lara said that it would take a long
13 time for anything to percolate down to the
14 aquifer. Well, that's not true because we had
15 two major fault lines that ran through that
16 property down into our local reservoir, and
17 that whole site was riddled with fractures and
18 fault lines, and we have early memos from 1954
19 that the company was planning to build a big
20 pit and dump all of the radioactive waste into
21 that pit.

22 I'm working with DTFC, and we're

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1 doing a follow-up to see if they actually did
2 that, and I know it was common in that time
3 period to dump everything into the ground.

4 DR. NETON: Right. Bonnie, this is
5 Jim Neton.

6 We were talking about Sodium-24, I
7 think, in that context, and it has a fairly
8 short half-life. I forget how many.

9 DR. HUGHES: Fifteen hours.

10 DR. NETON: Fifteen hours? So, you
11 know, in sort of groundwater migration time,
12 the 15 hour half-life is pretty short compared
13 to how far things migrate in the groundwater,
14 unless it's still suggesting that some kind of
15 equilibrium could be built up or it's just
16 continuously being infused, but even so, I
17 think --

18 MEMBER SCHOFIELD: But that would
19 only be a problem during the time that they
20 are running the reactors. Effectively there
21 is no problem when they're shut down.

22 MR. BERONJA: All right. So I

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1 guess the report is going to be generated, and
2 John said if we need to review it or whoever
3 would like us to review it, we can take a look
4 at it, but I think as Jim said, too, I think
5 this is a fairly minor issue. It's not an SEC
6 issue. It's more dose related to doing dose
7 reconstruction -- I'm sorry. Site profile.
8 Thank you.

9 MR. MORRIS: This is Bob Morris.

10 MR. KATZ: Yes, Bob.

11 MR. MORRIS: My recollection of the
12 EPA drinking water standard is that four
13 millirem per year for continuous -- as the
14 only source of drinking water comes from
15 drinking 20,000 pico Curies per liter.

16 DR. MAURO: It's 20,000. Okay.
17 Thank you for correcting me.

18 MR. MORRIS: Twenty thousand.

19 DR. MAURO: It's that high. Okay.

20 I stand corrected. I know where the 900 came
21 from. I stand corrected.

22 MR. MORRIS: And so I think the

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1 conclusion you can come to just at face value
2 is that dosimetricly the number will be small.

3 DR. NETON: Whether it's 30,000 or
4 100,000, you're in the ballpark of around ten,
5 12 millirem per year maximum. So these are
6 small doses to consider, although necessary to
7 be included.

8 MR. BERONJA: Okay, all right.
9 Moving on, the next issue related to uranium
10 fires where the petitioner referred to
11 numerous uranium fires and cites a couple of
12 incidents of sodium explosion and concern
13 about the monitoring, NIOSH concluded that
14 there was data available for the various
15 uranium fires that would allow dose estimates
16 to be bounded. We actually reviewed quite a
17 few different studies related to this and
18 really came to the same conclusion that NIOSH
19 did on this. So I don't think there's really
20 any further discussion that's needed on that.

21 Issue number five talks about air
22 monitoring. Again, this was a petitioner

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1 issue that, you know, sufficient air
2 monitoring or air monitoring was insufficient
3 related to, you know, determining exposures.

4 I think NIOSH concluded that there
5 was a concern prior to 1958 about this. You
6 know, I think we concurred with NIOSH's
7 conclusion about that prior to 1958. You
8 know, we did have some questions about post
9 1958, and I think that's going to probably all
10 get wrapped up in some of the other
11 discussions that we have with the other
12 issues. So we can talk about those there.

13 The next issue is the sodium
14 disposal facility or sodium burn pit. The
15 facility was not adequately monitored and/or
16 records are missing. NIOSH had a number of
17 statements that they made where they said that
18 they didn't really feel this was a significant
19 issue just given some of the safety issues
20 associated with going out to the facility,
21 given some of the levels of radionuclides'
22 present at the site.

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1 And you know, I think in general we
2 still had some concern just about, you know, I
3 don't think there's still very good
4 information on when some of this contamination
5 took place or some of the incidental exposure.

6 You know, I think probably still in general
7 are feeling as probably the exposures that
8 folks would have gotten would have been
9 relatively minor, associated with walking by
10 this facility.

11 I guess the only things I don't
12 know if you guys have looked at any other
13 information related to the sodium burn pit or
14 any kind of modeling or anything else, Lara.

15 DR. HUGHES: What we looked into is
16 more we have actually been in the context of
17 some of the other issues into looking and
18 producing co-worker models. So anybody who
19 might have gone out there that may have not
20 been monitored, you know, those could
21 conceivably be bounded with the co-worker
22 model, considering this was an intermittent

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1 operation.

2 So you would not have a worker at
3 the burn pit eight hours a day seven days a
4 week. Yes, so actually looking into the co-
5 worker model covering this exposure.

6 MS. KLEA: I have eyewitnesses on
7 that situation, and I certainly don't agree
8 that only the workers at the burn pit would
9 have been contaminated. They would have
10 released airborne radionuclides, would have
11 covered the whole site.

12 MEMBER BEACH: And this is Josie
13 Beach. I have a question.

14 It says contamination was
15 discovered in '78. Do you guys have any
16 records of when it was monitored prior to '78,
17 when the last --

18 DR. HUGHES: It was not monitored
19 prior to '78 because it was not intended to be
20 a radionuclide disposal facility.

21 MEMBER BEACH: Right.

22 DR. HUGHES: It was a sodium

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1 disposal facility. So I think when they
2 started -- I'm not exactly sure what triggered
3 the monitoring. I think it was the thought of
4 clean-up or --

5 MEMBER BEACH: It said they had
6 intermittent modeling done or not modeling,
7 but intermittent --

8 DR. HUGHES: Disposal, like they
9 were disposing sodium, like a pump that had
10 sodium in it, and they would douse it with
11 water, submerge it in water to react to sodium
12 to make it -- essentially remove the sodium
13 hazard that Wanda had pointed out because
14 sodium is so reactive.

15 MEMBER BEACH: So there's no
16 previous monitoring data available until '78?

17 DR. HUGHES: No, because they did
18 not intend for it to become contaminated. It
19 did become contaminated, but again, if you
20 look at the reports, this environment, those
21 levels are fairly low; they are in the pico
22 Curie range of cesium. So it's not -- there's

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1 no indication that this was a major disposal
2 operation of radioactive --

3 MS. KLEA: No, actually it was, and
4 I have a witness who before he died went on
5 record and on videotape that he was ordered to
6 do releases over the side of the hill, and you
7 may or may not know it did go down the hill
8 and got into Brandeis-Bardin Institute.

9 So the story the company is telling
10 isn't true at all. This was a major, major
11 clean-up pit, and the workers were ordered
12 without any protective clothing to pump it.
13 They had to pump it out over the side of the
14 hill.

15 MEMBER MUNN: Pump what out?

16 MS. KLEA: The liquid.

17 MEMBER MUNN: What liquid?

18 MS. KLEA: These were pits. These
19 were earthen pits.

20 MEMBER MUNN: Yes, but we were
21 talking about the burn pits, weren't we?

22 MS. KLEA: Yes, the burn pits.

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1 MEMBER MUNN: And so --

2 MS. KLEA: They would wash the
3 contaminated parts to get the sodium off, and
4 it was great fun for the workers to see the
5 explosions.

6 MEMBER MUNN: Yes, it's a very
7 spectacular reaction.

8 MS. KLEA: Yes.

9 MEMBER MUNN: And when it's over,
10 it's over, but --

11 MS. KLEA: Anyway, the area was
12 contaminated with cesium, strontium, and
13 plutonium, and the workers had to pump the
14 liquid out that were in these pits over the
15 side of the hill, contaminating all of the
16 property below in Simi Valley.

17 DR. MAURO: So I'm visualizing two
18 concerns here. One is it's a burn pit and
19 things are burning.

20 DR. HUGHES: It's the sodium
21 reaction with water.

22 DR. MAURO: Sodium is reacting. So

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1 you have a very exothermic process, steam
2 coming off there.

3 DR. HUGHES: Just hydrogen.

4 DR. MAURO: Sodium is being
5 oxidized. Water is steaming off, and you've
6 got some kind of convective movement of air up
7 and out with water vapor, and in the pit there
8 is some cesium, perhaps some strontium,
9 whatever, now so that the key issues then
10 become, okay, what type of concentrations of
11 what radionuclides might have been in the pit
12 when.

13 DR. HUGHES: Exactly.

14 DR. MAURO: And second, when you do
15 this kind of thing, there are many models out
16 there that are run. It's like burning oil and
17 what comes up. You could sort of say -- okay.

18 I'm not saying you should do this, but if I
19 was trying to convince myself, okay, how do I
20 convince myself that the amount of airborne
21 radionuclides because of the burning process
22 is relatively small, and what contribution

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1 could have to the dose is relatively small.
2 There are probably ways of doing it, a
3 bounding analysis.

4 Is that something that you folks
5 have done or are looking at or basically
6 you're basically using more heuristic
7 arguments why this is not an important
8 contributor?

9 DR. HUGHES: Well, we're looking at
10 in general workers handling radiological
11 materials and workers handling sodium reactor
12 components we presumed were monitored or at
13 least I would assume that a larger part of the
14 workers that would have gone out there were
15 monitored.

16 DR. MAURO: Okay.

17 DR. HUGHES: So we're looking into
18 the whole internal and external monitoring
19 data from the site in the form of a co-worker
20 model to bound doses to workers.

21 DR. MAURO: So the argument being
22 that the bioassay data that you have for

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1 workers would have captured that. Whatever
2 contribution to intake, what might have
3 occurred while they were working with or in
4 the vicinity of the burn pit, the bioassay
5 data would capture those intakes and you
6 could, you know, along with other intakes that
7 you might have experienced from handling
8 material.

9 I just want to understand what the
10 line of argument is.

11 DR. HUGHES: Yes.

12 DR. NETON: The primary emphasis is
13 on the bioassay.

14 DR. MAURO: I have to say that
15 these kinds of transfer models are your last
16 resort.

17 DR. NETON: But keep in mind that
18 the concentrations are fairly low in these
19 materials, the pico Curie per gram.

20 DR. MAURO: Yes, and that's
21 important, and that's well established.

22 DR. NETON: And so they're

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1 measurements.

2 DR. MAURO: Somebody measured it
3 and so you know it's in there.

4 DR. NETON: So when you have pico
5 Curies per gram, the cancer per exposure is
6 pretty low. You just can't entail enough
7 material to get a significant dose, but
8 nonetheless, we would propose to capture with
9 a co-worker model.

10 DR. MAURO: Okay. Is that all part
11 of the evaluation design profile or just
12 something that is coming out in the white
13 paper?

14 DR. HUGHES: Yes, it's the white
15 paper.

16 DR. NETON: The co-worker model is
17 yet to be developed.

18 DR. MAURO: Okay.

19 MS. KLEA: I'd like to add. This
20 is Bonnie.

21 I'd like to add that we had similar
22 pits behind the SRE in the early days of

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1 operation, and I have a new witness that can
2 confirm this, and it's also written in
3 reports. They had ponds that they filled,
4 open ponds behind the SRE, and they used those
5 to wash the contaminated parts that had sodium
6 on them behind the SRE, and then those opened
7 dams broke, and all that liquid was released
8 down the hill, and then they put in piping
9 along the road to take the waste water from
10 the SRE over the Silvernale Pond, which was in
11 Area, I believe, Area 3.

12 So I don't remember if you have
13 information on the SRE pits.

14 DR. HUGHES: Bonnie, this is Lara.

15 I do believe we do, but if you want
16 to make sure, if you could forward any reports
17 that you have to us, if you want to make sure,
18 that would be fine.

19 MS. KLEA: I don't know that I have
20 anything that I haven't forwarded to you.

21 DR. HUGHES: Okay.

22 MS. KLEA: I think it's from that

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1 historic --

2 DR. HUGHES: I do remember.

3 MS. KLEA: -- data.

4 DR. HUGHES: Yes, I do remember
5 reading about this.

6 MS. KLEA: Right, and I have, like
7 I said, a new witness that was there at the
8 time, and he can testify as to what they did
9 in those pits, and then it's on record that
10 those earthen pits broke and everything ran
11 off the side of the hill.

12 MR. BERONJA: Well, again, I guess
13 on this one with the issues paper or the white
14 paper, co-worker model, we can take a look at
15 that if the Board wants, but otherwise I think
16 we can move on unless there's anything else.

17 Let's see. The seventh issue,
18 again, came through the petitioner. It was
19 identification of workers with blank radiation
20 exposure record sheets in their file, and I
21 guess that NIOSH had discovered through an
22 interview with current folks at Santa Susana

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1 that all individuals were issued a blank
2 record sheet in their file called a blue card,
3 and if an individual entered into a controlled
4 area, they were required to have a film badge,
5 and any exposure was entered into their file,
6 and that this practice was corroborated by
7 NIOSH through random personnel record reviews
8 and other reviews.

9 SC&A was able to pretty much
10 acknowledge this practice of these particular
11 cards, these blue cards, and of course, I
12 don't think we had the same level of
13 information probably that NIOSH did in
14 corroborating as far as just people entering
15 controlled areas, that they all had film
16 badges and everything, but I think hopefully,
17 you know, the co-worker models and other
18 things that are being looked at would address
19 this also.

20 MS. KLEA: Well, I know that that
21 was not required until 1968. We had free
22 access to everything when I was there.

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1 DR. HUGHES: I think the
2 terminology is more people that routinely
3 worked in this area. It is possible somebody
4 had access to facilities. So we're looking
5 into that with the co-worker model.

6 MS. KLEA: Right, and like I say, I
7 read that those requirements were not enforced
8 until 1968.

9 DR. HUGHES: Okay.

10 MR. BERONJA: Okay. The next issue
11 is monitoring of firemen from other sites who
12 were involved with fires or other events at
13 Santa Susana, and NIOSH mentions that firemen
14 wore film badges when working in areas with
15 the potential for radiologic exposures, and
16 one person interviewed mentioned that the
17 firemen consistently wore badges. However,
18 one fireman did not have monitoring records in
19 their file. You know, I think there is still
20 some question there.

21 Again, hopefully issues like this
22 would be addressed, you know, through the co-

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1 worker models, I assume. I don't know if
2 there's anything else that you want to add on?
3 I mean, I think we had discovered the same
4 things as far as there being some
5 inconsistency as far as the firm and having
6 badges or not having badges.

7 If there's nothing, let's see.
8 That's it as far as the petitioner issues.
9 What we'll do, unless folks want to take a
10 break, we could keep going and move into the
11 issues that SC&A had. Some of these actually
12 will have been covered already.

13 The first issue -- I'm sorry?

14 MR. KATZ: Bob?

15 MR. MORRIS: Yes.

16 MR. KATZ: Yes?

17 MR. MORRIS: The last conversation
18 on the blue cards, I think I heard SC&A say
19 that they agreed with the NIOSH position, but
20 then the topic changed sort of midstream.
21 Could you confirm that that's exactly what you
22 said?

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1 MR. BERONJA: I think we concurred
2 with what NIOSH had found. I think the
3 conclusion was, what Bonnie was saying, is
4 that this practice actually started in 1968,
5 and what NIOSH was talking about as far as
6 workers being badged was workers routinely
7 working in specific areas.

8 Otherwise people maybe who were not
9 routinely working may not have been badged,
10 and that the co-worker model would hopefully
11 address these particular incidents is I think
12 what was stated.

13 MR. MORRIS: But I'm not quite
14 following. I think this is exactly my
15 problem, is that the issue was unfilled blue
16 cards; is that right?

17 MR. BERONJA: I'm sorry. Could you
18 say that again?

19 MR. MORRIS: The issue was blue
20 cards with no data on them; is that right?

21 MR. BERONJA: Right.

22 MR. MORRIS: And you confirmed that

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1 that was an appropriate expectation
2 considering the common practice of business
3 through those years.

4 MR. BERONJA: Right.

5 MR. MORRIS: Okay, and then the
6 conversation shifted and it was some other
7 topic came in, and I'm not sure that I got
8 that.

9 Is it a new issue that has been
10 brought up or not?

11 MR. BERONJA: No, I think it was
12 what Bonnie stated, that this practice began
13 in 1968.

14 MR. MORRIS: But I think we know
15 that that practice of blue card being in the
16 files was before '68, wasn't it?

17 MR. BERONJA: I don't remember
18 offhand.

19 DR. HUGHES: Yes, that's correct.
20 I think Bonnie was referring to it being
21 enforced, that workers that were not monitored
22 were not able to access radiological areas,

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1 whereas before that it was possible for them
2 to access these areas if they wanted to.

3 DR. MAURO: So we have workers in
4 earlier years that may have gotten access,
5 received some exposure.

6 DR. HUGHES: They might have had
7 access in --

8 MR. STIVER: Or would have a blank
9 blue card.

10 DR. HUGHES: They would have a
11 blank blue card. They were not monitored.

12 DR. MAURO: And in theory, if you
13 have enough data, with good data from the blue
14 cards, somehow that could be used to build a
15 co-worker model for those workers who did not
16 have records.

17 DR. HUGHES: That is correct.

18 MR. BERONJA: And may have been
19 exposed.

20 MS. KLEA: This is Bonnie.

21 I have plenty of workers and worker
22 families who say there has been some more

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1 monitored, and there are no records found or
2 there are big, huge data gaps in the records.

3 DR. MAURO: For the benefit of the
4 work group, this issue is regarding
5 limitations in the data set for worker
6 exposures, whether it's external or internal,
7 more so I am assuming external. This would be
8 helpful, is when there are missing data,
9 incomplete data, but there is a body of real
10 data. What the question becomes is: is the
11 body of data representative enough in time and
12 location and job category that when you
13 collect that data -- let's say you start to
14 try to build a co-worker model with it where
15 you assign some distribution and try to, say,
16 pick off an upper 95th percentile that some
17 workers might have gotten -- the question
18 always is: are there subpopulations of people
19 because of their job categories or in time,
20 which usually turns up to be even more
21 important?

22 For example, if your data is

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1 limited to post some year but you're worried
2 about people in an earlier year, building a
3 bridge over time is a challenge. I know in
4 the past we've seen this where an effort is
5 made to show why the data collected post --
6 I'm going to use 1965 -- should be applied to
7 workers earlier and almost in a way really
8 there's a burden of proof here. You have to
9 feel pretty confident that because of the
10 nature of the operations, your understanding
11 of process knowledge, what took place, that
12 you could make that extrapolation.

13 That's not always easy to do.

14 DR. NETON: I'd like to know we've
15 done that.

16 DR. MAURO: In time? Okay. Do we
17 have one here?

18 DR. NETON: We've tried to go back
19 in time, but we've never been successful in
20 convincing the --

21 DR. MAURO: It sounds like you
22 might have that here.

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1 DR. HUGHES: No.

2 DR. MAURO: You don't?

3 DR. HUGHES: No.

4 DR. MAURO: I misunderstood then.

5 DR. HUGHES: Okay. I'm sorry.

6 DR. MAURO: So basically you're
7 saying in time there are just some workers for
8 some reason that just didn't get picked up.

9 DR. HUGHES: No. This whole issue
10 was something that I actually brought up when
11 I looked through the record because for each
12 claimant we get records from the site, and
13 sometimes this record would include an empty
14 health physics record or what they refer to as
15 a blue card, and they would say, "Oh, this
16 worker was, for example, a janitor and was not
17 monitored." That was just an example.

18 Now, some other records came back
19 and say we don't have any health physics
20 record for this worker. Therefore, he was not
21 a radiological worker, and there was a
22 discrepancy, and that's why we looked into

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1 this, and it turns out that the site, Area 4,
2 had different operators. That's this whole
3 confusion about the different operators.

4 You had Rocketdyne workers, and you
5 had Atomics International, and forgive me if I
6 get this wrong again. So the workers that
7 worked for Atomics International, anybody
8 would be issued this health physics card
9 because they were under health physics
10 supervision, and other workers who worked for
11 Rocketdyne were not working with the nuclear
12 operations, but they were working on Area 4.
13 So they are covered under this program. They
14 can file claims and we do a dose
15 reconstruction.

16 So that's the source of these two
17 different sets of records. Because I was
18 confused when I looked at it. It was like,
19 well, do we have missing data here or do we
20 not, and I was concerned. So that's why we
21 looked into this, and that's actually this
22 whole issue.

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1 DR. MAURO: Thank you.

2 MR. BERONJA: Anything else on
3 this?

4 Otherwise we're going to move into
5 the issues that SC&A have, and the first one
6 that we had was on the --

7 DR. NETON: Could we possibly take
8 a ten-minute break?

9 MR. BERONJA: Sure.

10 MR. KATZ: Okay.

11 DR. NETON: Before we move into the
12 SC&A issues.

13 MR. BERONJA: Yes.

14 MR. KATZ: So we're going to take a
15 ten-minute break. I'm just going to put the
16 phone on mute, but it will not cut the line.

17 (Whereupon, the above-entitled matter went off
18 the record at 11:43 a.m. and
19 resumed at 11:54 a.m.)

20 MR. KATZ: Okay. This is the Santa
21 Susana Work Group, and we just were on a break
22 for about five minutes or so, and we're going

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1 to start up a little again, and then we'll
2 have a lunch break.

3 CHAIRMAN GIBSON: Before we go back
4 to you, Greg, just as far as planning, do we
5 want to go another hour or so and have lunch
6 or what do we want to do? I know some people
7 have flights out of here at four, 4:30.

8 MEMBER BEACH: Mine is at six now.
9 They just changed it.

10 MR. KATZ: Josie has more time
11 here. What time do you have to leave?

12 DR. MAURO: I'm 4:30. I guess if
13 it keeps going I can sneak out. Do you think
14 we might be able to finish up? How much more?

15 MR. BERONJA: I don't see us --
16 even if we have lunch, I can't imagine us
17 going past three o'clock.

18 MR. KATZ: Even if we have lunch?

19 (Laughter.)

20 MEMBER MUNN: Skipping lunch is not
21 an option. No.

22 MR. BERONJA: Even if we have a

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1 regular lunch, it should.

2 MEMBER BEACH: So you're asking
3 another half hour, another hour? Is that what
4 you asked, Mike?

5 CHAIRMAN GIBSON: Yes. Maybe go
6 until 12:30 and then break for lunch?

7 MEMBER MUNN: Why don't we break at
8 12:30?

9 MEMBER BEACH: That's fine.

10 MR. KATZ: And we can try to do a
11 quicker lunch and get back.

12 CHAIRMAN GIBSON: Okay.

13 MR. BERONJA: Back into it, we're
14 going to start in now with the issues that
15 SC&A had related to the SEC, and the first one
16 actually we've already addressed. This is the
17 issue of which areas should be considered. So
18 I think it looks like all parties have agreed
19 and are comfortable with the fact that this is
20 focused on Area 4. So we don't need to
21 discuss that anymore.

22 I think as part of that, the dates

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1 were included, and NIOSH is going to be just
2 going back and looking at '53 and '54 to make
3 sure there's no other information that would
4 indicate or information that would indicate
5 that there were actually nuclear activities
6 going on at that time.

7 The second issue that we have is on
8 the adequacy of the internal monitoring
9 program pre and post January 1st, 1959, and
10 this thing is actually -- well, it's not quite
11 as long as I thought it was. Maybe we have
12 some longer ones. I think the crux of this
13 particular one is that -- and maybe just a
14 little bit of background.

15 First of all, we concur with NIOSH
16 that the pre-1959 information is really not
17 sufficient, and I think that we concur that
18 the SEC should be considered for that
19 particular time period.

20 Post 1958, what we did is we
21 actually went through and looked at the claims
22 that were filed related to Santa Susana, and

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1 if I remember right, I think that this was
2 100-plus claims that we looked at. Yes, maybe
3 at the time that we did it I think it was
4 close to 200. I don't know if that had --

5 DR. HUGHES: We have had well over
6 200 claims for over a year.

7 MR. BERONJA: So it was right
8 around 200, I guess, that we looked at. What
9 we did in looking at those was we looked at
10 those claims and, in particular, the periods
11 that the workers worked at the site, and then
12 we looked at what percentage of the workers
13 actually had internal dosimetry work, and then
14 we plotted that.

15 Actually in Section 4.3.1.1 of both
16 reports, and I think maybe just for a little
17 bit of background here, we originally had
18 multiple graphs presented in this section. We
19 had a graph that showed from the early period
20 all the way through '65 the percentage of
21 workers that were internally monitored, and
22 then we had the number of workers that were

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1 monitored over this period, and then we had
2 the same two graphs, the percent and the
3 number that were monitored from early on to a
4 much later time frame, and actually the reason
5 we did that was we wanted to focus on this
6 through the '65 time frame.

7 When this document went through DOE
8 review, they were a little bit concerned about
9 us putting the number of workers that were
10 monitored. So we actually pulled that out of
11 that particular report, and while I thought I
12 had lost a little bit of kind of the flavor
13 for the number of people, I don't think it
14 lost kind of the point that we're trying to
15 make.

16 If you look at the graphs, what it
17 shows is as far as the percentage of workers
18 that was internally monitored, there's really
19 nothing really that much that happened before
20 '58, and then it picks up and there's a pretty
21 increasing slope as you get into the '61, '62
22 time frame, and then there's a pretty strong

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1 baseline when you hit that '62-'63 time frame.

2 It then kind of comes down after that.

3 And really this particular
4 information, the sodium reactor experiments --
5 some uncertainty there -- there has been some
6 reports that have shown that there were places
7 that folks didn't think that there were
8 materials, that there were materials. There's
9 one particular memo in '62 related to this.

10 All of this kind of gives us
11 concern that this program was really not fully
12 robust, potential of really going until
13 probably at least about the '62 time frame.
14 We have that concern in the '59, '60, the
15 early '60s time frame.

16 While there are still some issues
17 that we had post '62, '63, '65, I think as far
18 as the program being a stable program and
19 being able to have sufficient information out
20 there to develop a co-worker model or
21 something else, I think, you know, in general
22 we thought it was fine.

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1 But it was this period as, you
2 know, the program was established and getting
3 going that we had some concerns. So that's
4 really kind of the crux of what came out of
5 some of this particular analysis. Again,
6 there's some specifics as far as how the
7 program was developed and some deficiencies,
8 but I guess I'd be curious just about, again,
9 the data set that we looked at was the claims
10 that were filed. We did not look at a bigger
11 data set or anything else that might have
12 said, "No, you guys didn't look at enough or
13 this class of workers."

14 So I'd be curious if NIOSH had any
15 different experience or what they thought
16 about these particular graphs, in particular.

17 DR. HUGHES: I don't particularly
18 understand what your total is. You said a
19 percentage. What is the total again?

20 MR. BERONJA: It's the percentage
21 of workers that were working at that period of
22 time. So those workers that were working, for

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1 instance in 1959, what percent of those
2 workers were internally monitored.

3 DR. HUGHES: But this is solely
4 based on our claim information?

5 MR. BERONJA: The claim
6 information, strictly on a claim information.

7 MEMBER BEACH: So that would be ten
8 percent.

9 DR. HUGHES: Yes, but we have --
10 okay. How did you limit those claims to 130?
11 I mean we have 240. Which ones did you
12 eliminate and what was the basis of that?

13 MR. BERONJA: You know what? I'll
14 go back and look. There were no claims
15 eliminated at all --

16 DR. HUGHES: Okay.

17 MR. BERONJA: -- in what we looked
18 at. I don't know. In some cases there may
19 have been claims where maybe it was outside a
20 certain period.

21 DR. HUGHES: Okay.

22 MR. BERONJA: You know, that we

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1 were looking at.

2 DR. HUGHES: That makes sense, yes.

3 DR. NETON: This may be a moot
4 issue anyway, though, because we're not going
5 to base our co-worker models at all on the
6 claimant's data. There are a large number of
7 internal monitoring data available that we
8 have access to. Unfortunately right now its
9 in de-identified form, and that's the data
10 that were used by Boice and others to do an
11 epi study recently that was released at
12 Rocketdyne.

13 And I'm not totally familiar with
14 the numbers, but there is --

15 DR. HUGHES: I have some numbers to
16 throw at you. The entire work force was
17 46,970 people off the site, and I'm not
18 entirely sure this was only Area 4. It might
19 have consisted of other areas, but the
20 entirety of internally monitored personnel at
21 the site over the entire course of operation
22 was 2,200. Excuse me.

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1 So I do not have the total number
2 of data points. I did not count them, but we
3 do actually have all of this data, all of the
4 internal monitoring data that was scanned and
5 abstracted during this study. It's available
6 in database format.

7 There is currently an issue with
8 some information that the site needs to
9 provide in order to use the entirety of the
10 data, which is in the form of clarification of
11 notation that was used mostly, and currently
12 the site cannot respond to any request because
13 they have funding issues. So this was
14 actually where this was being held up at the
15 moment.

16 MS. KLEA: Say that again, Lara.

17 DR. HUGHES: The sites, Boeing site
18 currently has no funding to cooperate with
19 NIOSH making data available, and this is the
20 current hold-up of the development of the
21 internal co-worker model, and the resolution
22 of questions that we still have on the data.

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1 MS. KLEA: I thought they got
2 funded from NIOSH.

3 DR. NETON: No, I don't think NIOSH
4 funded them. I was wondering if the DOE.

5 DR. HUGHES: It's DOE funding.

6 DR. NETON: DOE funding, and there
7 was some issues with the continuing resolution
8 and budgets and that sort of thing, and I
9 think DOE is working through that, and I
10 suspect that that should be alleviated fairly
11 soon.

12 But there was also an issue about
13 us using -- certain sites have the concept of
14 we should only have access to claimant data,
15 and that's not true. We have access to the
16 full range, and we're working that through.
17 We just need to get the right people talking
18 to each other for them to drop that issue off
19 the table.

20 But literally I think there's
21 hundreds of thousands of bioassay records that
22 have been collected that we'll have access to

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1 develop these co-worker models.

2 Now, the question still remains
3 whether it's a robust data set and were the
4 right people monitored and that sort of thing.

5 DR. MAURO: To put it in -- the way
6 I see it is that when you look at the claimant
7 records that we looked at, for whatever reason
8 we had 138 or something.

9 MR. BERONJA: Well, no, actually I
10 think -- I'll have to double check the
11 numbers. I think there were close to 200 that
12 we looked at.

13 DR. MAURO: Let's use that.

14 MR. BERONJA: Okay.

15 DR. MAURO: We have 200 and we say,
16 "Okay. You know, what percent of them were
17 those 200 claimants?"

18 And we see that there is an elbow
19 in the graph, and we plot it as a function of
20 time. You know, it stays pretty low, and then
21 we would hit under ten percent. You know,
22 it's nothing before 1957. Then it starts to

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1 creep around a little bit, but then you see it
2 takes off, and by 1963, you're up to 35
3 percent.

4 So I mean, it's very simple. We
5 just look at it and say, "hmm." It looks like
6 you might have a deficiency of data based on
7 just looking at those 200 claimants, you know,
8 prior to the '62-'63 time frame.

9 MS. KLEA: Do you think that the
10 DOE is not allowing you to publish the number
11 of the workers doing internal monitoring?

12 DR. NETON: No.

13 MR. BERONJA: Actually I did say
14 that. The DOE in their review had some
15 problem from a -- I'm sorry. Maybe not DOE --
16 on the Privacy Act concern, the Privacy Act
17 review. They had concerns. I couldn't quite
18 figure it out, of presenting the number of
19 workers --

20 DR. NETON: Oh, in work products.

21 MR. BERONJA: Yes.

22 DR. NETON: But the Board has our

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1 work products. You're talking about the
2 Privacy Act cleared --

3 MR. BERONJA: That's right. That's
4 right.

5 MS. KLEA: So that's the workers
6 who had internal monitoring records.

7 MR. BERONJA: That were internally
8 monitored, right, yes.

9 MS. HOMOKI-TITUS: Liz Homoki-
10 Titus.

11 Let me just clarify that for you.
12 The Privacy Act Director for CDC gives us
13 directions on how to get a Privacy Act
14 clearance, and if it's a group of nine or
15 less, and you can determine who that person
16 is, then those numbers need to come out, and
17 that's why they're taken out of the third
18 version that goes to the public, but it is not
19 taken out for the Advisory Board. The
20 Advisory Board has all of the information.

21 MS. KLEA: You're indicating that
22 the internal records are nine or less?

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1 MR. BERONJA: No.

2 MS. KLEA: Are the workers
3 monitored?

4 MS. HOMOKI-TITUS: no, I'm not
5 indicating that. I'm saying that they may
6 have said these three people --

7 MS. KLEA: Oh.

8 MS. HOMOKI-TITUS: -- and then if
9 they were talking about a group of nine or
10 less, then that number would have to come out
11 so that those people cannot be personally
12 identified.

13 I'm not saying anything about how
14 many people may have actually had some type of
15 internal monitoring.

16 MS. KLEA: Okay. Who is speaking?

17 MS. HOMOKI-TITUS: This is Liz
18 Homoki-Titus. I'm an attorney with HHS>

19 MS. KLEA: Okay.

20 MR. BERONJA: Yes, in this
21 particular case, Liz, and I'm not sure if I'm
22 completely understanding you, I mean, this is

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1 a plot just of the number of workers or
2 percentage of workers. There was no way to
3 figure out who these workers -- I mean I don't
4 think there's a way to --

5 MS. HOWELL: We don't need to have
6 this discussion in the middle of this meeting.

7 DR. MAURO: Well, I mean, the point
8 I was simply trying to make is that there's a
9 time period where it looks like there's a
10 paucity of data based on the 200 claims that
11 we looked at. Now, what I'm hearing is for
12 those very same time periods you may have not
13 only the claimant data, but all worker data
14 whereby you have a much more complete data set
15 of bioassay, not only, you know, number of
16 workers or percent of workers, but also the
17 number of samples per worker, what they
18 consisted of, the range of workers.

19 And what I'm getting at is when you
20 start to talk about adequacy, the data
21 adequacy to build the co-worker model or to
22 rebuild your construction, we walked away from

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1 the work that we did, and you got a problem in
2 the early '60s.

3 DR. NETON: Based on the claimant
4 data.

5 DR. MAURO: Based on the claimant
6 data set.

7 DR. NETON: I can understand that
8 conclusion based on that, but like I say,
9 we're in the process of developing --

10 DR. MAURO: This is important.

11 DR. NETON: -- a full data set, and
12 --

13 DR. MAURO: To me this is a big
14 issue.

15 DR. NETON: I would point out that
16 just because there's a paucity in the early
17 years one, of course, has to look at what type
18 of work activities were going on, the type of
19 work, the amount of work, that sort of stuff.
20 That has got to be looked at in context.

21 MR. BERONJA: Yes, I mean, and
22 Larry, you probably know this, I mean the '60s

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1 was a pretty active time for this site.

2 DR. HUGHES: I think somewhat what
3 you see in here is very likely consistent with
4 the operations of the site that they ramped
5 up. You know, they started small in '53,
6 constructed, and then they wound up to mid-
7 '60s, maybe late '60s, when they stopped
8 operating a lot of these facilities, and
9 finally went into decommissioning.

10 DR. NETON: So anyway, at least
11 with this, like John said, you know, we had
12 access to the claims data. We looked at it.
13 You know, we started looking at it, and we saw
14 this and we said, "Well, we'd better look at
15 more of the claims just to get a better
16 represented sample."

17 We did that and we still saw the
18 same thing. So I think, you know, we still
19 have a concern, but if you guys have better
20 information to be able to develop a co-worker
21 model, whatever.

22 DR. NETON: I mean, I wouldn't be

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1 surprised if we see a similar pattern of ramp-
2 up because, in fact, you know, we have a
3 technique where we could use claimant data to
4 develop co-worker models, and it's a valid
5 approach, but again --

6 DR. MAURO: It's mostly heuristic
7 unfortunately. At some point everyone has a
8 judgment. Well, when do I have enough data or
9 enough time periods, enough different types of
10 workers where I'm starting to feel comfortable
11 that I could use that data to build it around.
12 We've been there before.

13 DR. NETON: And of course, a lot of
14 it, the more sparse the data that you have the
15 more claimant favorable you end up tending to
16 be. For instance, we've had very few data
17 points at some sites and said, "Well, we
18 really don't know the distribution, but we're
19 going to take the highest value."

20 I mean, we've done that at several
21 sites, or we'll take the 95th or --

22 DR. MAURO: We're in the middle of

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1 that in a couple of places, and we've had some
2 disagreements on if, in fact, the intent was
3 to monitor the people that had the highest
4 potential for exposure, then that argument
5 starts to hold nicely.

6 But then, again, the burden of
7 proof is to make that case. Yes, these are
8 the people, you know, and we've been through
9 that before. So, in effect, if it turns out
10 that even if you only have -- let's say it
11 turns out you only had ten percent of your
12 workers that have bioassay data. Right now my
13 sense is that's not -- you know, you're
14 missing -- you know, is that good enough to
15 build a co-worker model where you could place
16 a plausible amount down on all workers, which
17 may be so you only have ten percent.

18 But if somehow you could make a
19 case, and we're going to get into this when we
20 talk about the OTIB bond on Y12. If you could
21 make a case that says, no, we could
22 demonstrate that those workers were, in fact,

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1 the workers that are the highest potential,
2 and if we pick the upper 90 percent, even
3 though it's only a small percentage, if we
4 picked up 90 percent of those and we assumed
5 that everyone gets that consistently, I as a
6 health physicist would say that sounds pretty
7 good, but right now we don't have that.

8 DR. NETON: I always like to use
9 the analogy, you know, the percentage of
10 workers monitored is a very poor indicator of
11 how robust the monitoring program was, and I
12 always like to point out that's like saying
13 only two percent of people who work in a
14 hospital are monitored and, therefore, it's a
15 poorly monitored program.

16 In fact, the only people that work
17 in the Radiology Department are the ones that
18 need to be monitored. I mean, so you've
19 really got to look at what's going on.

20 DR. MAURO: But that case has to be
21 made.

22 DR. NETON: Exactly.

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1 DR. MAURO: Really the burden of
2 proof is on you guys.

3 MEMBER BEACH: So this is Josie.

4 What can we expect NIOSH to
5 develop, a white paper or --

6 DR. NETON: A co-worker model
7 using --

8 MEMBER BEACH: For this issue.

9 DR. NETON: -- using the full set
10 of data we have available from this facility.

11 MEMBER BEACH: When it's available.

12 DR. NETON: And we're working very
13 diligently to secure those data.

14 MEMBER BEACH: Right.

15 MR. BERONJA: I guess from a
16 procedural perspective, I mean, and it sounds
17 like you guys have a roadblock right now from
18 doing that, right?

19 DR. NETON: Yes, it's my
20 understanding we actually have the data set,
21 but it's to be identified. So that limited
22 use to do what John has been asking, to just

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1 sort of see where the right people, kind of
2 monitor, that sort of thing.

3 We have the full data set of
4 records for a bioassay that I used. It's
5 better to have identified data to look at if
6 you can match people with what categories,
7 that sort of thing.

8 DR. MAURO: This is, by the way --
9 you know, I've been involved in many SECs,
10 like next week is a big week. This is the
11 recurring theme over and over again.

12 DR. NETON: Now, and this is a big
13 ticket item here, and we talked about a lot of
14 issues with fission products and tritium.
15 This is where the doses are really going to be
16 assigned from particularly the uranium values
17 and how many radionuclides, the big dose
18 items. They're going to drive the
19 compensation CDs in most cases.

20 MR. BERONJA: Yes, I guess as far
21 as post '58 we'll hold off until the work that
22 you guys do. I guess the question you have to

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1 ask is, you know, right now if all of us are
2 saying, yes, through the end of '58 we all
3 agree, then is there a significant change as
4 far as information available in '59 and '60
5 and '61, or what's the difference between
6 those things or is it still, you know, a
7 fairly small level?

8 DR. MAURO: That was part of our
9 original mission, if you recall. If you take
10 a real close look, they draw the line, you
11 know, at the right place, and that's where we
12 zeroed in, in addition to everything else.

13 MR. BERONJA: The next -- I don't
14 think there's anything else there. There's a
15 lot of specifics here, but I think we'll just
16 hold off and wait and see what you guys find
17 in that particular study.

18 The next issue we had, and we've
19 discussed this already, this was an SC&A issue
20 that also was a petitioner issue, and that is
21 related to lack of information, related to the
22 potential exposures with some facility

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1 incidents like the SRE and sodium burn pit,
2 and I think in both cases we've got an
3 independent study that you guys are going to
4 do on the sodium reactor experiment, and I
5 think the model that you're developing on the
6 sodium burn pit or at least another co-worker
7 -- part of the co-worker --

8 DR. HUGHES: Wrapped up in the co-
9 worker analysis.

10 MR. BERONJA: So there's actions
11 being taken related to this.

12 DR. NETON: We're going to sound
13 like a broken record.

14 MR. BERONJA: Yes.

15 DR. NETON: We need to move forward
16 here, but the co-worker models, we've had many
17 discussions about how we handle incidents, and
18 we believe that the co-worker models tend to
19 incorporate many of the incident exposures
20 that would have occurred.

21 The next issue, and we could be
22 finished here before lunch, given the co-

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1 worker model part of this and everything else,
2 but we really just had two more issues, and
3 they are not as important as the internal
4 issue we just talked about.

5 But issue number four is the lack
6 of information on environmental exposures.
7 We've already talked about the drinking water
8 aspect of this. The other, you know, concern
9 that we've had all, although I don't know;
10 probably from an exposure standpoint, and it's
11 not a big one, is just the use of the staff
12 data as far as an environmental exposure. I
13 think what was done there, and this might be
14 contrary to what you were saying, Jim, but you
15 don't typically do is I think they took some
16 information from '71 through '99 and then
17 apply that and actually use some of that
18 through the earlier years.

19 I mean, probably we don't have too
20 much of a concern even -- I know we were
21 talking this morning about the .01 factor that
22 was used and whether that's conservative or

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1 not, but the issue that some of our folks had
2 here was that it was used '71 to '99 when a
3 lot of the heavy activity was going on. Maybe
4 there's more activity going on in the '60s,
5 and is that really a representative time frame
6 or is it really possible to take that time
7 frame and then apply it back to the earlier
8 years?

9 So that's probably the big issue on
10 this. Otherwise we've dealt with the drinking
11 water side.

12 DR. BEHLING: Greg, can I interrupt
13 for a second? This is Hans Behling, SC&A.

14 MR. BERONJA: Sure. Thanks, Hans.

15 DR. BEHLING: This is one that you
16 should rate, and it's really a question of
17 going back to essentially Exhibit 1 in my
18 write-up, but of course, you probably don't
19 have it, but it's a replication of Figure 2-3
20 in the TBD, and if you look at Figure 2-3 and
21 you look at the activities as a function of
22 time from the early operations to the later

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1 ones where we do have environmental
2 monitoring, and you realize that there is a
3 real disconnect here. So much work, and
4 different type of work, was done in the period
5 during which there was absolutely no
6 monitoring.

7 So the real question is can you
8 realistically extrapolate backwards in time
9 from the time period during which
10 environmental monitoring was done and then
11 translate that kind of data into the time
12 period where there was none done and realize
13 that the activities associated with the site
14 were so much different in terms of both
15 quality and quantity.

16 MS. KLEA: Thank you, Hans.

17 MR. BERONJA: Yes, you know, I
18 guess before I forget and end up looking at
19 the specifics in some of these writings, with
20 you on the phone, Hans, I know one other issue
21 we had or there were several issues, Hans,
22 that we had and I think we had kind of

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1 postponed this discussion on the neutron dose.

2 I don't know, Lara, if you guys want to talk
3 about what you're doing with that.

4 DR. NETON: Let's finish up what
5 we're doing with this environmental thing
6 first maybe.

7 I just had a couple of things. One
8 is I wanted clarification. When I was talking
9 about back extrapolation, I was specifically
10 referring to external, occupational external.

11 I think we have in a couple of instances
12 maybe done some back extrapolation using
13 environmental.

14 And so this would only apply to
15 people who would not fit in the co-worker
16 model, correct? I mean, so these are workers
17 who would not be considered radiological
18 workers at all, essentially be judged to have
19 no potential for exposure.

20 So one can sort of envision that
21 their doses would be by nature fairly low and,
22 in fact, some small fraction of what we were

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1 assigned to the workers.

2 So I'm wrestling a little bit with
3 this back extrapolation. I think we're going
4 to have to go back and look at it, I guess.

5 DR. MAURO: So what I'm hearing is
6 that given that there's a problem of back
7 extrapolation, as Hans pointed out, there
8 might be other ways to come at the problem

9 DR. NETON: Yes, there are
10 certainly ways to bound. I'd certainly bound
11 a non-radiological worker though. I don't
12 think it's an SEC issue, but we would have to
13 come forward with some more appropriate
14 approach, I guess.

15 This would be maybe appropriate. I
16 know I haven't looked at this hard enough.

17 DR. MAURO: And again, so
18 everything is linked. Ultimately the linchpin
19 here is those bioassay data, especially in the
20 '56, '57 --

21 DR. NETON: Well, I'm not sure. I
22 mean, the bioassay data are definitely linked

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1 to what we would consider a radiological
2 worker, but there are instances where we would
3 say this person is deemed not to have done
4 radiological work and just by virtue of being
5 present at the site could have breathed some
6 stack emissions and gotten some small amount
7 of gamma dose.

8 You know, I used to think that
9 while certainly giving that person the full
10 occupational dose would be bounding, but you
11 know, you kind of wonder is that really a
12 plausible bounding dose. So then what
13 fraction -- we had to decide what fraction,
14 what's the appropriate fraction of the
15 occupational dose we would assign to
16 essentially non-radiological workers. It
17 looks to me like we need to do a little better
18 job here explaining if what we did is valid
19 or, if not, coming up with a better approach.

20 I'm confident we can do something
21 here. I don't think we've ever had an
22 environmental exposure be the basis for an

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1 SEC. There's always a first, I suppose, but
2 I'm sure there's something we can do.

3 MR. BERONJA: Anything else on
4 environmental?

5 DR. BEHLING: Yes, Greg. This is
6 Hans again.

7 MR. KATZ: Yes.

8 DR. BEHLING: I guess I do have a
9 question regarding you had mentioned
10 previously that you felt comfortable with the
11 reduction factor or the issue of the reduction
12 factor as identified in the TBD of 0.01 was
13 one that you feel has been resolved, and I
14 guess I wasn't aware what was stated in that
15 behalf, but it seems like a single value for
16 the entire site seems to be something of an
17 over generalization, given the size of the
18 site and the potential source terms throughout
19 the site where a person might have been
20 exposed so that one size fits all seems a
21 little bit over generalized.

22 DR. MAURO: Yes, I'm the guilty

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1 party, Hans. What I looked at is typically
2 when I look at environmental exposures from
3 airborne emissions, whether elevated or ground
4 level, is you get the source term in pico
5 Curies per second averaged over the course of
6 a year. You multiply by atmospheric
7 dispersion factor, χ over Q , and that's
8 location specific, and you come up with a
9 concentration at some location off site,
10 average annual concentration at some off site
11 location.

12 In this case they didn't do that.
13 In this case they started with the point that,
14 well, let's say we have a source term. Of
15 course, that's what we're discussing was --

16 DR. BEHLING: Stack emissions.

17 DR. MAURO: Stack emissions. You
18 have stack emissions, and there's certainly a
19 concern there, but .01, and what they're
20 saying in their site profile is if I know the
21 concentrations, the average concentrations
22 going out my stack over the course of a year,

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1 I'm going to assume that the highest exposure
2 anyone could experience walking around the
3 site would be .01 concentration. That is a
4 very conservative assumption because I know
5 what the chi over Q is going to give you.

6 DR. NETON: Worst case it is--

7 DR. MAURO: It is as bad as you can
8 get. Now, I don't especially like that
9 approach because you've never done it before.

10 Looking at all of these cases, you've always
11 used the chi over Q, but you know, if that's
12 what you've elected to do here to place an
13 upper bound, you know, I can't argue that
14 that's not an upper bound. That would be an
15 upper bound.

16 DR. BEHLING: Admittedly, that's
17 the conservative value, and I'm just comparing
18 it to what was done at the Hanford site where
19 we have basically a very real breakdown by
20 location, and I'm not sure whether or not such
21 data is available here, but the second issue
22 that I raised in my write-up was that this

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1 particular value of 0.01 does not incorporate
2 resuspension from contaminated ground service.

3 This is strictly a value that is assigned to
4 point releases, and it does not address
5 potential long-term deposition and
6 resuspension of radioactive materials.

7 DR. MAURO: That's true. You're
8 absolutely right. Quite frankly, I didn't
9 even give that a thought. I was just thinking
10 in terms of the atmospheric dispersion. It
11 would probably be a worthwhile exercise to see
12 if that contribution could change anything. I
13 have not done that.

14 DR. NETON: I'm not an expert
15 environmental modeler, but it would seem to me
16 that would be a very small contribution to the
17 overall dose.

18 DR. MAURO: That would be my
19 intuition, but I hate to leap to those things.
20 I tend to do that too quickly, yes, but it's
21 certainly something I did not consider.

22 DR. NETON: Okay.

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1 MS. KLEA: This is Bonnie. Does
2 anyone look at the types of cancers that were
3 predominant at the different facilities?

4 DR. NETON: Bonnie, This is Jim
5 Neton.

6 We are looking at that sort of as a
7 side project that really is not related to how
8 we go about doing does reconstruction.

9 MS. KLEA: Okay. Well, I've seen,
10 well, the majority, and I've gotten the county
11 from the department. The majority of cancer
12 is lung. The second highest cancer is
13 bladder. So let's assume we all got internal
14 doses, even those of us who were not
15 monitored, and that mirrors the studies done
16 by the BEIR Group, the BEIR 7 report.

17 DR. NETON: I'm not sure what you
18 mean by that.

19 MS. KLEA: Well, the BEIR 7 report
20 found that the two cancers that were
21 statistically higher than they expected was
22 lung and bladder. Now, I know that the

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1 bladder cancers are only being compensated at
2 three percent in the United States. So you're
3 obviously using old data. NIOSH is obviously
4 using old data that says that the bladder is
5 not very radiosensitive, and obviously it is.

6 DR. NETON: I'm not sure that
7 that's a correct characterization of that the
8 BEIR 7 report is saying, but that's a separate
9 issue which is related to our risk modeling
10 and not necessarily related to the ability to
11 do dose reconstruction.

12 MS. KLEA: Okay. Do you look at
13 the statistics on what kinds of cancers are
14 predominant?

15 DR. NETON: We are looking at that,
16 but remember these exposures are multifaceted,
17 and there are many chemicals at these
18 facilities as well, and there's radionuclides.

19 So an association in and of itself would not
20 necessarily point to the radiation being the
21 causative agent. You just can't --

22 MS. KLEA: Okay. Well, that's what

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1 the BEIR study found, and they studied the
2 radiation exposures of the Japanese, and they
3 found that bladder and lung rose statistically
4 higher than they had expected.

5 DR. NETON: Well, we are very
6 engaged in looking at the BEIR 7 report and
7 have draft models for risk assessments using
8 those parameters, and we're carefully
9 evaluating them, and at such time as, you
10 know, we can validate them properly, we are
11 considering updating the version of IREP, but
12 there are a lot of other issues behind the
13 scenes.

14 In some cases the risk goes up. In
15 some cases it goes down depending on what
16 population you're looking at. Some of those
17 data were based on looking at mortality data
18 instead of incidence data, which is what we
19 use in this program. So there's a lot of
20 things to consider in doing this.

21 But the bottom line is we are
22 looking at BEIR 7, and if we believe there's

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1 appropriate parameters to adopt in our risk
2 models we would, and as usual with this
3 program, any time we make a change, we would
4 go back and reevaluate all the cases that had
5 been previously denied to see what effect they
6 might have on their outcome.

7 MS. KLEA: Thank you.

8 And I just wanted to make you aware
9 that I'm a survivor of bladder cancer, and all
10 the new cancers are being diagnosed even with
11 the reactor operators. Everyone had bladder
12 cancer, all of the survivors.

13 DR. NETON: Thank you for that
14 comment.

15 MR. BERONJA: Well, you know what?
16 I guess the only thing I'd say, we might be
17 able to finish this up in the next half an
18 hour unless there's a lot of other issues that
19 people want to keep going and try and do that.
20 I'll leave it up to you all.

21 MEMBER MUNN: We have to go through
22 our little exercise with what next and then

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1 next.

2 MR. BERONJA: Okay, okay.

3 MEMBER MUNN: And we have
4 housekeeping issues to deal with.

5 MR. BERONJA: Okay.

6 MR. KATZ: And we'll need to come
7 up with recommendations for the class that can
8 be recommended to the full Board at the next
9 meeting.

10 MR. BERONJA: Okay.

11 MEMBER MUNN: Lunch.

12 (Laughter.)

13 MS. KLEA: And when did you say the
14 telephone participants would be able to ask
15 questions?

16 MR. KATZ: There is no public
17 comment session, although as you note you've
18 been free to comment all along and you'll be
19 free to comment some more when we reconvene,
20 Bonnie.

21 MS. KLEA: Okay.

22 MR. KATZ: But so it's 12:30 now,

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1 and it will probably be at least 45 minutes
2 for lunch. Is that good? Maybe an hour. So
3 in any event, probably 45, 50 minutes we'll
4 reconnect the phone, okay, for everyone on the
5 phone.

6 MS. KLEA: Thank you.

7 MR. KATZ: And thanks for
8 attending. We'll hear you after lunch.

9 MS. KLEA: Have a nice lunch.

10 MR. KATZ: Thank you. Bye-bye.

11 (Whereupon, the above-entitled
12 matter went off the record at 12:30 p.m. and
13 resumed at 1:30 p.m.)

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1 MS. ADAMS: Ted, Mark hasn't been
2 on the call at all today.

3 MR. KATZ: No, I know that. He
4 thought he might possibly join us for a couple
5 hours, but that's why I was asking.

6 MS. ADAMS: Okay.

7 MR. KATZ: Okay. Mike.

8 CHAIRMAN GIBSON: Okay. Greg, do
9 you want to pick back up where we left off?

10 MR. BERONJA: I am. I think we're
11 really on the final issues that SC&A had
12 related to the SEC petition, and the first one
13 is actually involving external doses, and I
14 guess two issues to discuss, maybe an external
15 co-worker model, as well as just a discussion
16 on the neutron dose. I don't know if you guys
17 want to talk about those.

18 DR. HUGHES: With regards to the
19 external co-worker model, it has actually been
20 completed, and it is currently being reviewed.

21 It has not been issued yet, but it should be
22 issued within the next month, I think.

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1 In order to develop the external
2 co-worker model what was analyzed is over
3 40,000 data points, and the date range is from
4 the beginning of the covered period through
5 1999, and it was determined that there were
6 over 5,000 individuals that were monitored for
7 external radiation exposure over the
8 operational period.

9 MEMBER BEACH: What year did that
10 start? I missed it.

11 DR. HUGHES: The co-worker model is
12 actually based on the epidemiological study
13 data that actually starts in 1948, but it's
14 for all of the four sites.

15 MEMBER BEACH: Okay.

16 DR. HUGHES: So we have '49 to 1999
17 that we have actually co-worker data on for
18 external exposure.

19 MEMBER BEACH: Thanks.

20 MS. KLEA: Is that to worker death
21 study?

22 DR. HUGHES: It's the

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1 epidemiological study by Boice, yes.

2 MS. KLEA: Well, of course, you
3 know that I've objected to using that study
4 when we had the UCLA study.

5 DR. HUGHES: Well, the data that
6 both studies are based on is essentially the
7 same. The only difference is that Boice
8 scanned all of the data into a database, and
9 that is what we used because we don't have to
10 -- we didn't want to go back and scan every
11 record again just because it would take a very
12 long time.

13 MS. KLEA: Okay.

14 MEMBER MUNN: So to clarify, you're
15 using the data, not the Boice study itself.

16 DR. HUGHES: No, we're using the
17 data. That's correct.

18 MEMBER MUNN: Yes.

19 DR. HUGHES: We don't rely on any
20 conclusions they might have drawn or anything.
21 It's just the data that was scanned from the
22 worker files.

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1 MEMBER MUNN: Thank you.

2 MR. BERONJA: Anything else on the
3 neutron dose that you want to do?

4 DR. HUGHES: It's still being
5 reassessed. We don't have anything else to
6 report at the moment, and it will be
7 reassessed during the TBD revision.

8 MR. BERONJA: John, is there
9 anything that you have to add related to that
10 issue?

11 DR. MAURO: Oh, no.

12 MR. BERONJA: I mean just on that.

13 DR. MAURO: With regard to neutron,
14 just for my own information, are you leaning
15 toward utilizing neutron-photon ratios or do
16 you have some kind of calibration of knowing
17 what the neutron energy flux was and,
18 therefore, you can use the NTA film and then
19 make adjustment factors to it based on
20 knowledge of the energy distribution? Which
21 strategy looks like it's unfolding?

22 DR. HUGHES: I don't think we've

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1 gotten to the point where we can say. We
2 brought it up in this evaluation report that
3 we could look into the photon-neutron ratio,
4 but I'm afraid I would have to get back to you
5 on that.

6 DR. MAURO: I just was curious.

7 DR. HUGHES: Yes.

8 DR. NETON: It's an option. It's
9 definitely an option that we have available.

10 DR. BEHLING: This is Hans.

11 I guess one of the things that was
12 raised in one of the findings was the issue of
13 thermal neutrons because the TBD states that
14 people were monitored for both fast and
15 thermal neutrons. Has that been resolved?

16 Because it's my understanding based
17 on the evidence that I've seen that the
18 ability to monitor for thermal neutrons didn't
19 exist.

20 MEMBER MUNN: I think that's what
21 we're discussing right now, Hans. I had
22 thought that's what we were discussing.

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1 Specifically, the workers were unlikely to
2 have been monitored for thermal neutrons was
3 the wording that I think we were addressing,
4 right?

5 MR. BERONJA: Okay. Actually that
6 really covers the issues that we have. I
7 guess maybe just to summarize some of the
8 things, and this might not be a complete list.
9 I'm going to go through this again.

10 As far as action items or things
11 that I think we're going to see coming from
12 NIOSH, kind of to follow up, I have, you know,
13 a re-look at the years 1953 and 1954 to
14 determine if there are any nuclear activities
15 or there could have been some exposure.
16 There's a study that they've actually selected
17 a contractor, are in negotiations on the
18 sodium reactor experiment, and there's going
19 to be an independent study done there. An
20 internal co-worker model is being developed
21 where the sodium burn pit has also been
22 addressed or at least a method of addressing

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1 that.

2 A tritium report is being prepared
3 to just, I think, demonstrate or document the
4 likely exposure there. I think Jim mentioned
5 to take a relook at the environmental
6 exposures, the applications since 1971 through
7 later to earlier periods to determine if
8 that's still the way that they want to go
9 there.

10 And the last thing we have heard is
11 this -- well, a couple of things. The
12 external co-worker model is done, and it is
13 going to be released in about a month, and
14 then also relooking at the neutron dose is
15 being evaluated again.

16 So I think those are the main
17 things that I have as far as potential action
18 items on things that we'll say. Again, I
19 think maybe just in conclusion, you know, from
20 our perspective, you know, I think we concur
21 with NIOSH's thoughts as far as the 1958 and
22 before period, and you know, we think things

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1 are still a little bit soft, and you're
2 welcome to look at other data in '59 and the
3 early '60s.

4 And then I think you are just
5 welcome to look at any other information
6 that's being generated.

7 DR. MAURO: I'm operating under the
8 assumption that we don't have any action items
9 right now. We will wait to hear from the work
10 group and then Ted to confirm when such action
11 items are triggered.

12 MR. BERONJA: Sure.

13 DR. MAURO: But right now we sit
14 and wait.

15 MR. BERONJA: Right.

16 CHAIRMAN GIBSON: Jim, when do you
17 think you guys will have a final decision on
18 whether you're going to modify the definition
19 of co-workers?

20 DR. NETON: That's a good question.
21 I think we can resolve that issue in the next
22 week or so.

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1 CHAIRMAN GIBSON: Because I think
2 as far as me personally -- and it's up to the
3 rest of the work group. I could be
4 outnumbered here -- but at least until we get
5 that I don't think I would recommend anything
6 as far as this SEC as it sits.

7 DR. NETON: I guess what I'd be
8 willing to commit to is that once we do
9 decide, we certainly would let you know and
10 the rest of the working group that that's a
11 change in our position if that's the case.

12 CHAIRMAN GIBSON: I mean, I'm not
13 trying to say that's the only issue that we're
14 concerned about. Obviously potentially --

15 MR. KATZ: If you can draw -- I
16 mean, that's just a question of where the
17 start date begins for that, but you can draw
18 up your recommendations to the full Board
19 without knowing for a week or two what the
20 start date is. I mean, it's not going to
21 change any of the facts on the ground in terms
22 of --

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1 CHAIRMAN GIBSON: Well, see, that's
2 one thing that would at least keep me from
3 making a recommendation, based on what
4 everyone else things, but --

5 MR. BERONJA: I'm sorry. I missed
6 it. When you said date, are you talking about
7 the all workers or are you talking about the
8 date?

9 CHAIRMAN GIBSON: Well, number one,
10 the all workers. That's what I was asking Jim
11 about, and then I clarified that to say that's
12 not the only issue.

13 DR. NETON: I'm just trying to
14 figure out in my mind like let's say that we
15 did decide that it was going to be all worker
16 position. What's the mechanism then forward?

17 How are we entertained to get this thing
18 moving, to get the SEC?

19 I guess we would have to issue an
20 advised addendum to the evaluation. That's
21 what we would do, issue to you, and then the
22 Board through the working group could take it

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1 up at their discretion. Because we have
2 already presented the evaluation before. We
3 did the addendum. I don't want to presume
4 what the Board would do with that. I mean, it
5 would be nice to get this class moving forward
6 if everyone was in agreement that was the
7 case.

8 MEMBER MUNN: It seems a logical
9 approach. The question is one of timing. Is
10 that going to be possible between now and,
11 say, the full Board's meeting in Cincinnati?

12 DR. NETON: Oh, in Cincinnati? I
13 would think so, yes. I thought you were going
14 to say in Amarillo. That would be pretty --

15 MEMBER MUNN: I can't imagine that
16 you could do it between now and Amarillo.

17 DR. NETON: It's possible.

18 MR. BERONJA: Is that the end of
19 May?

20 MEMBER MUNN: That's only three and
21 a half weeks away.

22 DR. NETON: It depends on how

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1 quickly we make this decision, I guess. If we
2 can get this out next week some time, I don't
3 want to speak for others that have to make
4 some decisions in light of what all the other
5 things are going on and prepare for the next
6 Board meeting. I don't want to prejudge, but
7 certainly I think by the Cincinnati meeting.
8 If not, maybe a Board working group call,
9 although I don't think SEC has been really
10 dealt with in a final vote on a Board call.

11 MEMBER MUNN: It's hard to do on a
12 Board call.

13 MR. KATZ: Well, I mean, I think
14 generally they're done face to face unless
15 it's just a complete non-issue.

16 DR. NETON: One of the messier
17 issues, this is a little messier than some of
18 the ones where we've said we want to add this
19 class and are reserving the rest of the
20 period. This would be sort of a carving out
21 of a current evaluation.

22 I'm not sure how we've ever dealt

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1 with that. We must have dealt with it.

2 MR. KATZ: It's not a problem at
3 all for the Board to go forward with a class
4 that's covered. It's done it a number of
5 times where it has gone forward with a
6 recommendation for a portion of the SEC
7 evaluation. It's not a problem at all.

8 I guess I would just suggest that
9 this working group -- I mean, you can sort of
10 -- you understand what the contingency is.
11 OCAS may not get through with this work in
12 time for the Board meeting, but anticipating
13 that it's possible they would, I mean, you
14 could come to a conclusion as to say OCAS
15 comes through with a conclusion that it really
16 should be all workers, but it's for the period
17 up to '58 is a definite go.

18 I mean, this work group could come
19 up with a decision that, well, we support the
20 recommendation up to '58 for all workers. You
21 could come up with that conclusion now for
22 that contingency, and then if this does go

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1 through, you know, like a greased pig and it's
2 there, then when the Board meets in Amarillo,
3 the Board could actually make a decision and
4 at least some of these claimants could get
5 paid, I mean, as opposed to waiting.

6 MS. KLEA: Does anyone know the
7 number we're talking about of claimants?

8 DR. NETON: No. Well, maybe Lara
9 does. I don't know.

10 DR. HUGHES: The current proposed
11 class that we limit it to monitored workers,
12 we're talking about ten claims, and the
13 numbers of claims if we included all workers,
14 we're talking about 37 claims. That would be
15 people with SEC cancers and required work
16 period.

17 DR. NETON: Between '53 and '58,
18 yes.

19 DR. HUGHES: Yes.

20 MR. KATZ: I would just make the
21 point that whether it's ten or 37, it's ten or
22 37 people that get compensated months sooner

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1 if there's Board action.

2 MR. BERONJA: So you're saying I
3 could go ahead and do this proposal even no
4 matter what NIOSH does as far as --

5 MR. KATZ: I mean this would be
6 just a contingent recommendation. If NIOSH
7 determines that it's all workers, then this
8 working group supports that recommendation.

9 DR. MAURO: And would make a move
10 on the front end and then the back would catch
11 up later.

12 MR. KATZ: Right. That's just an
13 option. I'm saying that's an option.

14 CHAIRMAN GIBSON: Some of the rest
15 study, Wanda, Phil, Josie?

16 MEMBER MUNN: This is difficult
17 because SEC is limited in area more than
18 anything else, and it seems to be impossible
19 to limit workers who were assigned to this
20 area as opposed to workers who were present in
21 the area at one time or another.

22 So if you say all workers and

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1 you're talking about all workers encompassing
2 only those whose work site was Area 4, then
3 that's an easy task for us to debate here and
4 deliberate.

5 If you're saying all workers with
6 the assertion that that means all workers who
7 had access or who were likely to have been for
8 brief periods of time in Area 4, then you have
9 another issue entirely.

10 So I'd want to be very clear about
11 exactly what you mean when you say "all
12 workers."

13 DR. NETON: This would have the
14 same caveat or proviso as almost all of our
15 other definitions, which is the requirement
16 for a 250 day work duration in Area 4.

17 MEMBER MUNN: Specifically at Area
18 4. So it --

19 DR. NETON: Or an aggregate with
20 other SECs, but yes.

21 MEMBER MUNN: So anyone who worked
22 in one of the adjacent facilities, even though

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1 they may have far more than 250 work days in
2 the aggregate, if they were not assigned in
3 Area 4, they would not be compensated under
4 this particular SEC.

5 DR. NETON: That's correct.

6 MEMBER MUNN: Correct?

7 CHAIRMAN GIBSON: And are their
8 employment records sufficient enough to
9 document workers who may have had a home base
10 outside Area 4 and was assigned to Area 4?

11 DR. NETON: Well, all I can say
12 there is that we vet these class definitions
13 through the Department of Labor, and they were
14 comfortable with the way we worded it here
15 saying all workers who were monitored for Area
16 4. So somehow they must have felt they were
17 capable to segregate or delineate the area for
18 workers.

19 MEMBER MUNN: However, they were
20 talking about people who were monitored in
21 Area 4. If we're going to say all workers in
22 Area 4, then that's a different question,

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1 right, Mike?

2 DR. NETON: Well, but it still it
3 seems to me to be the same evaluation process.

4 I mean, it's a two step. It has got to be
5 monitored and be an Area 4. Now we're just
6 saying forget the monitoring. You've just got
7 to work in Area 4.

8 MEMBER MUNN: Yes.

9 MEMBER BEACH: Yes, and have proof
10 of working in Area 4.

11 DR. NETON: Well, they had to do
12 that anyway under the original definition.
13 They also had to have proof that they were
14 monitored. So it's a little less restrictive
15 or is less restrictive.

16 MEMBER MUNN: Our terminology was
17 always monitored or should have been
18 monitored.

19 MEMBER BEACH: Should have been,
20 right.

21 MEMBER MUNN: And so I guess my
22 real question is whether the Department of

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1 Labor definition is specific enough to be able
2 to make the Board's usual recommendation in
3 the same way.

4 DR. NETON: Well, we have gone away
5 from monitored or should have been monitored
6 for several SECs now. In fact, it was too
7 difficult for the Department of Labor to
8 determine who was monitored or should have
9 been monitored even with our advice, and so to
10 work around that issue we have decided for
11 most SECs now to drop that designation and
12 just say all workers. It's much more readily
13 implemented by the Department of Labor.

14 MS. KLEA: And who's speaking?

15 DR. NETON: This is Jim Neton.

16 MS. KLEA: Okay. Thank you, Jim.

17 DR. NETON: So I suspect that they
18 would be quite okay with this definition if it
19 were to become -- it's the easiest class for
20 them to administer when they have already
21 decided who is an Area 4 worker because they
22 sent cases to us, and so, in fact, it really

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1 would be just the cases that we have in our
2 possession that are listed as Area 4
3 claimants. It has already been essentially
4 decided now that I think about it.

5 I mean, we have those cases in our
6 possession. We have a pick list in our
7 computer programs on which site did you come
8 from. It's checked.

9 MR. BERONJA: Jim, just to clarify,
10 I think you've did say '53 and '54, but I
11 don't think you really meant that. Did you
12 really mean '55 through '58?

13 DR. NETON: Yes, yes.

14 MR. BERONJA: I just wanted to
15 clarify that.

16 MEMBER MUNN: Yes, that was the
17 other clarification I was looking at.

18 MR. BERONJA: Okay, yes.

19 MEMBER MUNN: As long as we're very
20 specific about what workers are covered when
21 we say "all workers" and as long as we're
22 specific about the time frame that we're going

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1 to place before the Board, I have no objection
2 to our doing it with the caveat that NIOSH
3 will complete the study that's being done, and
4 we're assuming that there will be no
5 unexpected consequences from that that would
6 cause us to change our mind.

7 I have no objection to offering
8 that to the Board.

9 CHAIRMAN GIBSON: Phil? Jim?

10 MEMBER BEACH: I am more
11 comfortable with the definition changing and
12 also bringing that to the Board once we know
13 that the definition has changed. I hesitate
14 to wait because I don't know how long it's
15 going to take to clarify those additional
16 years after '58 till '52 I think is what we
17 were talking about.

18 MR. BERONJA: '53, '54?

19 DR. NETON: Yes. That would take
20 some time because we would --

21 MEMBER BEACH: And I hate to wait.

22 DR. NETON: I mean, we may be able

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1 to decide if we did find additional
2 information. We would have to send that on to
3 the Department of Energy, and they would have
4 to review it and they typically don't just
5 turn it around quickly. They'll do their own
6 investigation.

7 On top of that, also I think it
8 seems to me after our discussions today the
9 exposures after '58 through '59, it's going to
10 take some time for us to flesh out the rest of
11 these technical issues based on what we talked
12 about today, developing a co-worker model
13 where internal is not going to be short term.

14 So I'd be happy to say let's just bump it all
15 together if I felt we could get this done in a
16 month or two, but I suspect that's not going
17 to happen.

18 MEMBER SCHOFIELD: I agree with
19 that Josie said, but once that definition
20 changes, they may. I think that comports with
21 that recommendation.

22 DR. MAURO: Is there agreement that

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1 if that doesn't happen, even the definition
2 from, you know, monitoring, should be
3 monitored, right on the way it's worded, it
4 sounds like that, correct, that you agree
5 that's certainly at a minimum what would be
6 recommended by the working group but may even
7 be expanded beyond that if between that time
8 period you're able to modify the evaluation
9 report and its recommendations to use the
10 language "all workers"? Then, of course, that
11 would expand the definition of the class.

12 But right now at a minimum am I
13 correct there's agreement that at a minimum
14 the recommendation would be for the definition
15 of classes that you have right now.

16 CHAIRMAN GIBSON: One question I --

17 DR. MAURO: I don't know if I heard
18 that.

19 CHAIRMAN GIBSON: What I'm saying
20 right now is personally -- and it's just my
21 opinion -- I would not make that
22 recommendation.

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1 DR. MAURO: You would not. See, I
2 wasn't sure. I was following the
3 conversation, and I wasn't exactly sure what
4 was decided on.

5 CHAIRMAN GIBSON: That's one area
6 that can be fixed it seems like fairly easily
7 if NIOSH decides to do that, and that's one
8 area that's not going to muddy up the water.

9 MR. BERONJA: One question that I
10 have, and I haven't been through these like
11 you guys have, but can the Board go through
12 and say we want it to be all workers no matter
13 what NIOSH has put in the evaluation report?

14 I mean, so you can go forward with
15 that and then if Jim disagrees, you know,
16 after a full Board meeting, I don't know how
17 that works.

18 DR. NETON: It's NIOSH's
19 preference, at least my preference, that we
20 sort of agree on these. If we are in
21 agreement it's much easier, I think. The
22 process is much smoother.

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1 MEMBER MUNN: So clarifying again,
2 one more time, all workers, Area 4, years '55
3 through '58, calendar years '55 through '58,
4 correct? And the caveat will be worded how?

5 MEMBER BEACH: Were monitored or
6 should have been.

7 MEMBER MUNN: No, that's not the
8 caveat. No, the caveat has to do with
9 cleaning up the additional information that
10 NIOSH is putting together. If anything comes
11 out of that.

12 DR. NETON: No, I don't expect that
13 by this Board meeting we would have -- we
14 don't control the time frame for when the
15 additional years might be added.

16 MEMBER MUNN: I understand, but
17 that's what I'm trying to identify. We
18 started off talking about the caveat is if
19 everything that you finish up whenever you
20 finish up does not cause any disagreement with
21 what we've discussed here today and talking
22 making the change, then our recommendation is

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1 go for it.

2 MR. KATZ: Just let me clarify.
3 The contingency that's being talked about here
4 is whether or not it's all workers or just
5 monitored workers. That's the only contingency
6 that Jim is saying possibly could get involved
7 in time for the next Board meeting. The
8 question of whether it's all workers or just
9 monitored workers within the scope of their
10 add recommendation.

11 MEMBER MUNN: Because the current
12 SEC says monitored.

13 MR. KATZ: Because the current, as
14 it's written now, it says monitored, but Jim
15 is indicating that it is possible that would
16 be switched to all workers before this
17 upcoming Board meeting. That's the only thing
18 on the table as a contingency for the upcoming
19 Board meeting.

20 CHAIRMAN GIBSON: The reports and
21 stuff, we just need to know about them in
22 order to schedule our next meeting. Okay. So

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1 that's settled. Glad to see that happen.

2 MR. KATZ: So the settled is then
3 that there is not a recommendation from the
4 work group at this point.

5 CHAIRMAN GIBSON: At this point,
6 correct.

7 MR. KATZ: Okay. Well, then there
8 will not be a work group meeting before the
9 Board meeting.

10 CHAIRMAN GIBSON: No, I understand
11 that, but even through a call between the sub-
12 corporate members, if this language comes out
13 prior to Amarillo, they may have a
14 recommendation for the Board.

15 MR. KATZ: I mean, you have to have
16 a work group meeting to come up with a
17 recommendation.

18 CHAIRMAN GIBSON: Can't you get on
19 the phone?

20 MR. KATZ: Well, if you had a
21 schedule work group meeting, but I mean, given
22 the amount of time that's left, that's --

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1 MEMBER MUNN: We essentially can't
2 do it.

3 MR. KATZ: It will be hard to do.
4 I mean, I guess if you're talking about, you
5 know, a 30 minute call, I guess, or 15 minute
6 call, I guess it's possible.

7 CHAIRMAN GIBSON: Well, yes, that's
8 all I'm talking about, yes.

9 MEMBER MUNN: My understanding was
10 that what Ted had suggested and what I thought
11 we were agreed to as we went around the table
12 was what I was just clarifying, that we would
13 recommend, that our group would recommend to
14 the Board at the Amarillo meeting that the SEC
15 covering all workers at Area 4 from the years
16 1955 through 1958 would be accepted as a
17 special exposure cohort. That's what I
18 thought we were going to say.

19 Given the fact that NIOSH is still
20 looking at other years as possibilities, but
21 our recommendation for those years will be --

22 MR. BERONJA: Well, I think it's

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1 based on Jim relooking at the all workers
2 issue, is the only thing that --

3 DR. NETON: If NIOSH issues a
4 report, I think Ted is suggesting maybe the
5 working group could pre-agree that if that
6 report came out, it would be the
7 recommendation at this meeting.

8 CHAIRMAN GIBSON: Just the change
9 on monitored workers to all workers.

10 MEMBER MUNN: Yes, but if we can
11 agree to that here today, then we can make
12 that recommendation to the Board, and the only
13 thing then that would hold the final
14 completion of that particular SEC would be the
15 release of the NIOSH report. The date the
16 NIOSH report is released, unless it says
17 something contrary to all workers, then it's
18 done.

19 DR. MAURO: One problem we're going
20 to continue to see a recommendation -- and
21 that's what I'm here; it's conditional -- is
22 what does the Board do. If they can't act on

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1 it, then we can say we were granted --

2 DR. NETON: No. If the report
3 comes out, then the working group would have
4 the authority to say --

5 DR. MAURO: Oh, I see. I thought
6 it might come out after the --

7 DR. NETON: No, no.

8 MR. KATZ: It would be a
9 conditional recommendation.

10 DR. MAURO: Got it. Now it works.

11 MR. KATZ: And the one thing I
12 would just say about the idea of having
13 another conference call for 15 minutes or what
14 it would be to wait for this report, it's
15 going to cost us \$5,000 in the transcription
16 fee for that five minute call to say, "Okay.
17 It's out. We agree."

18 I mean, if you make the
19 recommendation conditionally now, it's no
20 different, but it's free because we're already
21 here.

22 Now, I would hate to spend \$5,000

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1 just to wait and see it when there's no new
2 information. I mean, you have all of the
3 information in front of you now to make this
4 judgment, understanding it's conditional, and
5 the record is very clear at this point that
6 it's conditional.

7 MEMBER MUNN: And if the stars
8 align so that that report can, in fact, be
9 available at Amarillo, then it's a moot point.

10 DR. MAURO: Is that what we've got
11 here?

12 MR. KATZ: If the report is
13 available, then your conditional
14 recommendation goes into effect, and the Board
15 has a new report from NIOSH, and it has a
16 recommendation from this working group, and
17 then the Board can take it up and add that
18 small piece of this petition to the cohort if
19 it decides there's a hole, that that's what it
20 should do.

21 DR. NETON: And if it doesn't come
22 out before the Board meeting, then you need no

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1 action.

2 MR. KATZ: It just waits, just as
3 it would now. It would just wait till the
4 next Board meeting.

5 MEMBER MUNN: We are waiting.

6 MR. KATZ: So it just needs
7 confirmation of this work group as to what you
8 want to do.

9 MEMBER MUNN: I would suggest we do
10 that.

11 CHAIRMAN GIBSON: It's done.

12 MEMBER BEACH: I agree.

13 MEMBER SCHOFIELD: I agree.

14 MR. KATZ: Let the record show it's
15 unanimous.

16 DR. NETON: And we'll do our best
17 to get this report out as soon as possible. I
18 can't speak for the people who have to revise
19 it. It seems simple on the surface, which it
20 probably is, but there's a queue for these
21 things to go through.

22 MEMBER MUNN: There's always

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1 somebody in the details.

2 MR. KATZ: Bonnie?

3 MS. KLEA: Yes.

4 MR. KATZ: I just want this to be -
5 - I imagine this is all clear to you at this
6 point. Yes?

7 MS. KLEA: Yes, it is clear to me,
8 and I've seen many other SECs that have the
9 early years passed and then there was
10 continuing work to include, you know, more
11 years.

12 Now, my petition has been approved
13 through 1965, and I would like to see the work
14 go forward on those years also because really
15 from '58 to '59, what really changed? You
16 didn't have records and then you did have
17 records.

18 So I would like to see the early
19 year get passed until Mike knows a reason why
20 it shouldn't, but only if all workers are
21 going to be covered.

22 MR. KATZ: So that is the

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1 recommendation of this work group. It's for
2 all workers, Bonnie, and I just want to make
3 certain this is clear for you because this
4 petition is not actually on the agenda for
5 this upcoming Board meeting. So it's
6 particularly important that you're aware that
7 this could come up at this Board meeting.

8 MS. KLEA: Okay. So are we going
9 to wait until May to have a final decision on
10 this?

11 MR. KATZ: So the Board, yes, the
12 full Board is meeting in May, the 12th and the
13 13th, and you know, I can't tell you where on
14 the agenda this would fall, whether it's on
15 the 12th or the 13th, but it would fall on one
16 of those days. It will only be taken up
17 though if NIOSH gets this report out, this
18 addendum out, and we would certainly get you
19 notification of that as well.

20 MS. KLEA: Okay.

21 MR. KATZ: So you would know.

22 MS. KLEA: All right. So I'll let

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1 Mike, since he's the head of the work group,
2 you know, make the final decision.

3 MR. KATZ: The work group has voted
4 already --

5 MS. KLEA: Oh, okay.

6 MR. KATZ: -- to make this
7 recommendation. So they want to go forward if
8 they can.

9 MS. KLEA: All right. Well, it's
10 something.

11 MR. KATZ: Yes. I think that's
12 good.

13 MR. BERONJA: I imagine there's
14 other SECs being discussed.

15 MR. KATZ: It's dwindling.

16 MR. BERONJA: Oh, is that right?

17 MR. KATZ: There's definitely room
18 on the agenda for this. That's a good thing.

19 MS. KLEA: Okay. As long as you
20 don't forget the rest of the years, you know.

21 MR. KATZ: Absolutely, Bonnie.
22 Everybody here recognizes that there's a lot

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1 of work left to do for the rest of the years.

2 MS. KLEA: And like I said, I have
3 new witnesses here, and I hope that SC&A gets
4 back out here. I have witnesses from the SRE,
5 lots of witnesses. I also have a witness from
6 the Owensmouth facility at Canoga. Now, I
7 know we're working on Area 4, but I submitted
8 evidence to SC&A of a huge nuclear accident
9 there in July of 1958, and all of the workers,
10 45 of them, were put under lifetime secrecy.
11 So that's something else I want to bring up.

12 At the same time we lost a reactor.

13 Okay? They were running a L-47 reactor, and
14 at that same time period when we had this
15 recorded accident, L-47 reactor was never
16 heard of again, and when the NRC came out to
17 find out what happened to it, no one knew
18 where it was or what happened to it.

19 So you know, we have the lifetime
20 secrecy problem of not having data.

21 MEMBER MUNN: It's pretty hard to
22 lose a reactor.

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1 MS. KLEA: Well, this was a small
2 one. It was actually very small, and it's was
3 -- it's gone.

4 MEMBER MUNN: Yes, but whenever a
5 reactor goes away, it's like an old song. The
6 memory remains and so does a very definite
7 signature in terms of radiological leavings,
8 that it's pretty hard to just move a reactor
9 and have it disappear.

10 MS. KLEA: Well, this one was
11 small. It was like a great big, huge popcorn
12 maker. It was a small training reactor, L-47,
13 and when the accident happened at Canoga, the
14 AEC ran in screaming, you know, "We're all
15 crapped up," which was a slang for
16 contaminated, and when they tested the roof of
17 the building and outside in the roads and the
18 dirt, everything was hot, and then the workers
19 were all forced to sign lifetime secrecy. So
20 don't know what happened there.

21 MEMBER MUNN: NRC had them sign
22 secrecy --

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1 MS. KLEA: It was the AEC.

2 MEMBER MUNN: AEC.

3 MS. KLEA: Required lifetime
4 secrecy, and then the NRC came out to find out
5 what happened to the reactor and they could
6 find no records, and the U.S. Army Corps of
7 Engineers found high levels of radiation in
8 the groundwater underneath that Vanowen
9 Building.

10 So, you know, woman's instinct just
11 tells me that there might have been a
12 correlation between that lost small reactor
13 and a large accident at Vanowen in July of
14 1958.

15 MR. KATZ: Bonnie, you know, if you
16 have new information, any new information,
17 interviews, et cetera, that you want to submit
18 the door is always open on that.

19 MS. KLEA: No, I've already
20 submitted the notebook. I have a worker who
21 was at Vanowen when this happened, and he put
22 together a huge notebook, and I copied it all

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1 and I sent it to SC&A. So that's already in
2 your possession.

3 But I have new workers that I've
4 found, and I wish you could come back out and
5 interview them.

6 MR. KATZ: And information that's
7 submitted to SC&A typically gets shared then
8 with OCAS.

9 DR. MAURO: Yes, we would have it.

10 MS. KLEA: Okay. Well, that's the
11 [Identifying Information Redacted] case, and I
12 was on a conference call yesterday with a
13 worker who was in Vanowen at that time, and he
14 died in 1963 of Hodgkin's. So I told that
15 interviewer about that accident, and that was
16 new information, and my question on this
17 interview is why is NIOSH processing claims
18 for cancers that are not covered. Hodgkin's
19 is not a covered cancer. Yet it has gone
20 through the processing. It has gone through
21 dose reconstruction.

22 DR. NETON: Bonnie, this is Jim

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1 Neton.

2 Hodgkin's lymphoma is a covered --
3 all cancers are covered under this program for
4 dose reconstruction with the exception of
5 chronic lymphocytic leukemia. What you might
6 be thinking of is the presumptive cancer list,
7 which Hodgkin's lymphoma is not one of the
8 presumptive cancers.

9 MS. KLEA: So as far as you know,
10 would Hodgkin's disease be covered?

11 DR. NETON: Hodgkin's lymphoma is a
12 covered condition, a covered cancer that we
13 would reconstruct a dose for to develop a
14 probability of causation for the Department of
15 Labor.

16 MR. KATZ: Bonnie, it's covered if
17 you have a dose reconstruction for that
18 individual. It's not covered if the
19 individual is in the special exposure cohort
20 and it would be compensated that way. They
21 would not be compensated as a member of the
22 special exposure cohort with that cancer.

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1 MS. KLEA: Okay. Well, now this
2 claim doesn't show Hodgkin's lymphoma. It
3 says Hodgkin's disease.

4 DR. NETON: Well, that's the same
5 thing.

6 MS. KLEA: Okay. So good. That's
7 good for the family. So you're saying
8 Hodgkin's is covered.

9 DR. NETON: Yes.

10 MR. KATZ: Covered for dose
11 reconstructions.

12 MS. KLEA: Okay, and so he was
13 there at Vanowen when they had that large
14 accident, and I just met with the family last
15 weekend and told them about and showed them
16 the notebook of information I have. So that
17 was new data.

18 MEMBER MUNN: That information
19 needs to be a part of his claim, correct?

20 MS. KLEA: Well, that's exactly
21 what I did on the conference call yesterday,
22 and I told him, I told the interviewer who is

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1 from Cincinnati. I said I've already sent in
2 a witness testimony to SC&A. This man is
3 [Identifying Information Redacted] now, but he
4 put everything in writing. He had names and
5 addresses and phone numbers of all the 45
6 people who had to sign lifetime secrecy, and
7 before he died it was his goal in life that
8 these families should get compensated if their
9 husbands died of cancer.

10 MR. KATZ: Can I just say something
11 at this point about this conversation?

12 MS. KLEA: Excuse me?

13 MR. KATZ: This is Ted again.

14 MS. KLEA: Okay.

15 MR. KATZ: We should be careful. I
16 mean, I know people from the public can say
17 what they want on these calls, but this,
18 you're giving a lot of details. You're
19 getting into more details now about
20 individuals, and we try to protect the privacy
21 of individuals.

22 MS. KLEA: Oh, okay. Exactly. I

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1 shouldn't say any names. Okay.

2 MR. KATZ: So it's fine to talk
3 about the general situation, but --

4 MS. KLEA: Okay. Is this going to
5 be recorded and be on the Internet later?

6 MR. KATZ: Yes, there will be a
7 transcript, yes, of this working group
8 meeting.

9 MS. KLEA: Oh, okay. So you'll
10 probably take that out.

11 MR. KATZ: Yes, we'll certainly
12 redact anything that might lead somebody to
13 identifying an individual, yes.

14 MS. KLEA: Okay. Great.

15 DR. MAURO: Question. The matter
16 of interviews, records of interviews that did
17 not make it into a work product. That's still
18 something that's going through the clearance
19 process. So I think by setting the landscape
20 of the situation, it is that whatever material
21 has been compiled usually is in years, and
22 that always lags behind our work products.

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1 Right now our plan is to continue
2 to finish that up, get it cleared, get a
3 computer clearance, get it into the full Board
4 and NIOSH as the rest of our deliverable as
5 these always lag behind. They just have to.

6 The degree to which the notebook
7 that reference was made to is part of that, I
8 can't speak to that right now.

9 MR. BERONJA: I don't know if it
10 went to Kathy or where it went.

11 MS. KLEA: It went to Kathy.

12 DR. MAURO: It went to Kathy. So
13 then it will be captured there, but right now
14 other than putting out that word product and
15 making an addendum to our report as an
16 attachment, which those are, there is no other
17 action item in this statement.

18 MR. BERONJA: I think that's right.

19 I think my priority would be to wait and see
20 the information that comes from NIOSH for all
21 of this information that we've talked about.
22 If we determine based on any additional stuff

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1 Kathy gets and it makes sense to go out and do
2 interviews to help us come to that, we would,
3 but otherwise we may not just if we have
4 sufficient information.

5 DR. MAURO: But the sequence though
6 is that we do have to finish up the attachment
7 that has to do with interviews.

8 MR. BERONJA: Yes.

9 DR. MAURO: That's moving through.
10 We're doing that without any direction.
11 Anything else over and above that, that might
12 be appropriate and needed, we don't have until
13 we're given direction by the work group.

14 MR. KATZ: Right, but if something
15 new comes to light from the information that
16 Kathy is pulling together --

17 DR. MAURO: Yes.

18 MR. KATZ: -- you would, of course,
19 report that out.

20 DR. MAURO: Oh, sure. We'll report
21 it out, but we won't act on it until we're
22 directed to do so.

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1 MS. KLEA: Do you have a paper
2 review of the SEC that I could get a copy of?

3 MR. BERONJA: What we call a paper
4 study actually is on the Web, the January
5 version of the paper study, Bonnie.

6 MS. KLEA: How many pages is that?

7 MR. BERONJA: It's about 50 pages.

8 MS. KLEA: Oh, dear. Could
9 somebody send me out a hard copy?

10 MR. KATZ: Yes, absolutely, Bonnie.
11 Ordinarily these get sent out automatically
12 to the petitioners, don't they? Or maybe not.

13 Okay. Well, we will certainly get
14 that out to you. I think the final report is
15 in Privacy Act review.

16 MR. BERONJA: That's right. Yes,
17 that's right.

18 DR. MAURO: This is on the paper
19 study.

20 MR. KATZ: Well, I understand. I
21 understand the paper study was already done
22 and it's Privacy Act reviewed. So, Bonnie, we

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1 have the final report that's the sort of full-
2 blown report that SC&A has done. It is going
3 through Privacy Act review, and we can get
4 that to you, which would have everything in it
5 as soon as the Privacy Act review is
6 completed, if that makes sense for you.

7 MS. KLEA: Okay. Well, whatever I
8 don't have I want, and --

9 MR. KATZ: Okay. We'll get you
10 both.

11 MS. KLEA: -- matrix.

12 MR. KATZ: We'll get you both, and
13 I don't know if the matrix is Privacy Act
14 cleared or not. It's not.

15 MS. KLEA: Okay. Well, as soon as
16 anything is available, I'd appreciate it
17 coming in the mail and you don't have to send
18 it overnight or anything like that.

19 MR. KATZ: Okay. We'll get those
20 to you.

21 MS. KLEA: I'd appreciate it.

22 DR. NETON: I have a question about

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1 the material that was sent to SC&A that we
2 might not have. Did I miss something?

3 MEMBER BEACH: The notebook?

4 DR. NETON: No, not the notebook.
5 There was some --

6 DR. HUGHES: The incident -- it's
7 not really related to --

8 DR. NETON: Something about the
9 interview with the claimant that was sent to
10 you. Did I miss something, Bonnie? I thought
11 there was something that SC&A received from
12 you that we might not have a copy of.

13 DR. MAURO: Is that the notebook?

14 MR. BERONJA: Either the notebook
15 or the incident in '58 that --

16 MEMBER BEACH: Yes.

17 MS. KLEA: There was a very large
18 incident at the Vanowen Building in July of
19 1958. I've been unable to get anything from
20 DOE on that, but there were 45 men in the
21 sealed development processing group who were
22 in a conference room, and the AEC from the

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1 Wilshire Division came running in down the
2 hallway screaming that we're all crapped up,
3 and tests were ordered of the roof of the
4 building, outside on the road, across the
5 street on the sidewalk, in the pool, and
6 everything was hot, and the AEC made every
7 single worker sign a lifetime secrecy, and I
8 submitted every one of those names.

9 The person who gave me the notebook
10 is very concerned, that he thinks every one of
11 these workers should automatically be an SEC
12 without going through dose reconstruction, and
13 the person that made the notebook, now, he has
14 been compensated, and he has a dozen different
15 cancers.

16 But I have three witnesses that are
17 still alive that testified to the same thing,
18 the same large accident, and like I say, at
19 that same time, this small training reactor
20 disappeared and was never ever found again.
21 So you can draw your own conclusions.

22 And also, I have eyewitness

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1 testimony that in their fuel laboratory at
2 Vanowen they had accidents that were so
3 terrible that the workers broke through the
4 walls. The walls were drywall and they broke
5 through the drywall just to get out of the
6 laboratory.

7 DR. NETON: Okay. I guess my
8 question is does NIOSH have this workbook or
9 whatever.

10 MS. KLEA: I sent it to SC&A.

11 DR. NETON: Right.

12 MS. KLEA: To Kathy DeMers.

13 DR. MAURO: I do see an action item
14 on our file. We've got to get a status report
15 of where our attachment, the interview
16 attachment, and any other supplemental
17 material that was provided to Kathy, where it
18 is right now in the system, and give you folks
19 an update on where that is and make sure, of
20 course -- it has been our standard.
21 Everything we get you get.

22 DR. NETON: No, I understand.

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1 DR. MAURO: The only reason we have
2 something you don't have, we will get it to
3 you.

4 DR. NETON: That's fine. I just
5 want to make sure. It sounds like it's
6 something we don't have right now.

7 MS. KLEA: I also have a question
8 of missed sites. What about the Atomics
9 International Science Center? I see they're
10 not even listed, you know, as a covered
11 facility, and then we also had Atomics
12 International in Van Nuys in the late '50s.

13 DR. NETON: Well, some of those
14 sites have changed names. I'm not sure.
15 Again, that's a Department of Energy call, not
16 ours, but if you have information that you
17 believe supports the fact that they should be
18 on the list, if you send it to us, we'd be
19 happy to forward it on to the Department of
20 Energy.

21 MS. KLEA: Okay. What would I do,
22 write you a letter?

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1 DR. NETON: Yes, that would be
2 fine.

3 MS. KLEA: And who would I send it
4 to?

5 DR. NETON: You can send it to me.

6 MS. KLEA: And who are you?

7 DR. NETON: Jim Neton.

8 MS. KLEA: Jim Neton.

9 DR. NETON: Yes, N-e-t-o-n.

10 MS. KLEA: Okay. Jim, could you
11 send me an E-mail? Do you have my E-mail?
12 Maybe you could send me the address to send
13 the letter to.

14 DR. NETON: Yes, I can do that,
15 sure.

16 MS. KLEA: Okay. Do you have my E-
17 mail?

18 DR. NETON: I'll get it.

19 MS. KLEA: Okay. Thank you. I'd
20 appreciate that. That way I know exactly
21 where I'm mailing it.

22 I have two other facilities that

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1 were not even ever mentioned. Well, the
2 Science Center, the Atomics International
3 Science Center, operated out of the De Soto
4 facility until they got too big, and then they
5 came over here and rented space from Thompson
6 Ramo Wooldridge actually two blocks from my
7 house, and they operated there for four years,
8 and that site is now -- has their own
9 groundwater, and the whole property is
10 radioactively contaminated.

11 I've never read any mention of the
12 Science Center.

13 MEMBER MUNN: That may have
14 something to do with their private side of
15 their operations.

16 DR. NETON: Well, Bonnie, I'm
17 looking at the DOE Website here, and Atomics
18 International is listed as a covered facility,
19 which includes both Los Angeles and Ventura
20 Counties.

21 MS. KLEA: Oh, well, Ventura County
22 would be the Science Center. Now, it would be

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1 Thousands Oaks. Is that --?

2 DR. NETON: Oh, I'm sorry. For
3 some reason it only covers a beryllium vendor
4 facility.

5 MS. KLEA: Okay. Well, that's not
6 good enough.

7 DR. NETON: Okay. You believe that
8 there was other material. See, they give
9 workers with radioactive materials.

10 MS. KLEA: Yes, the Science Center
11 was at De Soto. Then they came over here in
12 Canoga Park. That would have been on
13 Fallbrook Avenue, and then in 1964, they
14 relocated and built a new facility in Thousand
15 Oaks.

16 DR. NETON: Canoga is listed here
17 for sure. Well, if you send the information,
18 that would be very helpful, if you sent the
19 work with radioactive materials you believe
20 would qualify as a covered facility.

21 MS. KLEA: Well, I wouldn't know.
22 I wouldn't know what they did because we can

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1 get no information whatsoever.

2 DR. NETON: So that's not going to
3 be very helpful then.

4 MS. KLEA: No.

5 DR. NETON: If I can't provide them
6 any additional information, it would just be
7 me sending out a recommendation should be
8 added without any substantiating
9 documentation.

10 MS. KLEA: Well, I don't have it.
11 You can't get substantiating documentation
12 because every workers there also when they
13 left had to sign lifetime secrecy.

14 DR. NETON: Okay. Again, anything
15 that you would have I'd be more than happy to
16 send down, but --

17 MS. KLEA: Okay.

18 DR. NETON: -- it does need to be
19 something that indicates that there was some
20 type of covered activity there under the AEC.

21 MS. KLEA: Okay. Anyway, we'll
22 work on my petition for now.

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1 DR. NETON: Okay.

2 MS. KLEA: You know, it's a step at
3 a time.

4 MR. KATZ: Thank you, Bonnie.

5 MS. KLEA: You're welcome.

6 CHAIRMAN GIBSON: So is there
7 anything else? I don't think right now we're
8 in a position to schedule a future meeting.

9 MR. KATZ: We probably need to get
10 a sense of when all of these co-worker --

11 MS. KLEA: I have one more
12 question. It was mentioned that Boeing
13 doesn't have a budget to produce data. Is
14 this data on worker claims?

15 MS. KLEA: I have one more
16 question. It was mentioned that Boeing
17 doesn't have a budget to produce data. Is
18 this data on worker claims or is this on site
19 description?

20 DR. NETON: This is providing
21 employee monitoring information.

22 MS. KLEA: Oh, my gosh, how can

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1 they do that?

2 DR. NETON: Well, they don't work
3 for free --

4 MS. KLEA: Wow.

5 DR. NETON: -- like most people.

6 MS. KLEA: Okay. What's happening
7 in the other sites? Is DOE paying for the
8 facilities to --?

9 DR. NETON: Well, the DOE pays for
10 DOE facilities to provide information to us,
11 and there has been a sort of sporadic missing
12 funds for a while because of various budgetary
13 issues.

14 There's also an issue most recently
15 with personally identified information,
16 whether DOE has put a hold on sending
17 information until they can get encrypted
18 electronic drives to these sites so that the
19 data are adequately protected for the Privacy
20 Act and such. So there's a number of --

21 MS. KLEA: Okay. Because I have
22 met and been in touch with several old

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1 employees who had cancer maybe, oh, ten years
2 ago, and they're just now filing claims, and
3 so that means that they won't be able to get
4 the records.

5 DR. NETON: Well, I expect this to
6 lift fairly soon. This is not going to be a
7 continuing problem in my estimation.

8 MS. KLEA: Okay.

9 CHAIRMAN GIBSON: Okay. Is there
10 anything else from anyone? If not, I think
11 we're ready to adjourn.

12 MR. KATZ: Thank everybody for all
13 the hard work.

14 MS. KLEA: Thanks, everybody.
15 Bonnie signing off.

16 MR. KATZ: Goodbye, Bonnie.

17 Thanks to everyone else on the
18 line.

19 (Whereupon, the above-entitled
20 matter went off the record at 2:29 p.m.)

21

22

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