

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

+ + + + +

ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

+ + + + +

URANIUM REFINING ATOMIC WEAPONS EMPLOYERS
WORK GROUP

+ + + + +

MONDAY
MAY 16, 2011

+ + + + +

The Work Group convened in the Frankfurt Room of the Cincinnati Airport Marriott, 2395 Progress Drive, Hebron, Kentucky at 9:00 a.m., Henry Anderson, Chairman, presiding.

PRESENT:

HENRY ANDERSON, Chairman
R. WILLIAM FIELD, Member*

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

ALSO PRESENT:

TED KATZ, Designated Federal Official
DAVE ALLEN, DCAS
BOB BARTON, SC&A
HANS BEHLING, SC&A*
ZAIDA BURGOS, NIOSH*
KAY DREY*
CLARISSA EATON*
MARY GIRARDO*
SAM GLOVER, DCAS
JENNY LIN, HHS*
JOHN MAURO, SC&A*
JIM NETON, DCAS
L. MICHAEL RAFKY, HHS*
JOHN STIVER, SC&A*
BILL THURBER, SC&A*

*Participating via telephone

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

C-O-N-T-E-N-T-S

Call to order	8
Roll Call	8
Hooker Electrochemical	12
Bob Barton	12
Bill Thurber	14, 29
Dave Allen	21
Observation 1	15
Finding 1	28
Finding 2	45
Finding 3	48
Observation 2	52
Finding 4	53
Finding 5	54
Observation 3	56
Finding 6	56
Finding 7	65
Finding 8	66
Finding 9	86
Finding 10	86

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

C-O-N-T-E-N-T-S (CONTINUED)

Hooker Electrochemical Petition Evaluation Report	90
Bob Barton	91
Bill Thurber	92
Finding A	91
Finding B	94
Finding C	95
Finding D	104
Finding E	125
David Allen	112
Finding F	112
Observation A	127
David Allen	127
Surrogate Data Evaluation	132
David Allen	132
Renaming of TBD 6001 Work Group	174
United Nuclear	179
Bill Thurber	179
Finding 1	180
Finding 2	180
Finding 3	181, 182

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

C-O-N-T-E-N-T-S (CONTINUED)

United Nuclear (Continued)	
Bill Thurber (Continued)	
Finding 4	181, 182
Finding 5	186
Finding 6	188
Observation 1	189
Dave Allen	189
Finding 3	189
Finding 4	190
Public Comments	192
Clarissa Eaton	192
Kay Drey	202
Electro Metallurgical	210
Bill Thurber	211
Finding 1	211
Sam Glover	213
Finding 2	216
Sam Glover	216
Finding 3	218
Sam Glover	218

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

C-O-N-T-E-N-T-S (CONTINUED)

Electro Metallurgical (Continued)

Bill Thurber (Continued)

Finding 4	218
Sam Glover	220
Finding 5	223
Sam Glover	223
Finding 6	224
Sam Glover	224
Finding 7	225
Sam Glover	225
Finding 8	226
Sam Glover	226, 229
John Stiver	227
Finding 9	231
Sam Glover	231
Finding 10	231
Sam Glover	232
Finding 11	233
Sam Glover	233
Finding 12	233
Sam Glover	234

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

C-O-N-T-E-N-T-S (CONTINUED)

Electro Metallurgical (Continued)

Bill Thurber (Continued)

Finding 13	235
Finding 14	236
Sam Glover	236
Finding 15	236
Sam Glover	237
Finding 16	238
Sam Glover	238
Finding 17	239
Future Meeting Date and Administrative Matters	244

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

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

2 (9:03 a.m.)

3 MR. KATZ: Good morning, everyone
4 in the room and on the line.

5 This is the Advisory Board on
6 Radiation and Worker Health. This is the
7 TBD-6001 Work Group, and we are just getting
8 started with roll call. Since this is a Work
9 Group that is site-specific, please speak to
10 conflict of interest. We are going to be
11 talking at least briefly about three different
12 sites today, focusing on ElectroMet and
13 Hooker, but we will also just get a status
14 discussion on United Nuclear.

15 So, beginning with Board Members,
16 with the Chair, in the room.

17 CHAIRMAN ANDERSON: Henry
18 Anderson. I don't have any conflicts.

19 MR. KATZ: Thank you.

20 And on the line, Board Members?

21 MEMBER FIELD: Yes, Bill Field.

22 No conflict.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Welcome, Bill.

2 CHAIRMAN ANDERSON: Anyone else?

3 MR. KATZ: Any other Board Member
4 on the line?

5 CHAIRMAN ANDERSON: Is Mark?

6 MR. KATZ: Yes, that's who we were
7 expecting, Mark.

8 CHAIRMAN ANDERSON: Did he tell
9 you --

10 MR. KATZ: Zaida, are you on the
11 line?

12 MS. BURGOS: Yes, I am. He said
13 he will try to call in.

14 MR. KATZ: Okay. Okay. Yes, he
15 has conflicts quite bit with CSB.

16 Thank you.

17 MS. BURGOS: Okay.

18 MR. KATZ: Okay. So, let's go on,
19 then, with NIOSH ORAU team in the room.

20 DR. NETON: Jim Neton, NIOSH. No
21 conflicts.

22 DR. GLOVER: Sam Glover, NIOSH.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 No conflicts.

2 MR. ALLEN: Dave Allen, NIOSH. No
3 conflicts.

4 MR. KATZ: And NIOSH ORAU team on
5 the line?

6 Are you expecting anyone?

7 MR. ALLEN: No.

8 MR. KATZ: Okay. SC&A team in the
9 room?

10 MR. BARTON: Bob Barton, SC&A. No
11 conflict.

12 MR. KATZ: And SC&A on the line?

13 DR. MAURO: John Mauro, SC&A. No
14 conflict.

15 MR. KATZ: Welcome, John.

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

18 DR. BEHLING: Hans Behling, SC&A.
19 No conflict.

20 MR. KATZ: And is Bill Thurber
21 going to be on, too?

22 DR. MAURO: I am expecting him. I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 am sure he will be joining us shortly.

2 MR. KATZ: Okay. Great.

3 MR. THURBER: I had the mute on.

4 MR. KATZ: There you are.

5 MR. THURBER: Bill Thurber. No
6 conflicts.

7 MR. KATZ: Welcome. Thanks, Bill.

8 MR. THURBER: Okay.

9 MR. KATZ: All right, good. And
10 federal officials? There are none in the room
11 other than me. I'm Ted Katz, the Designated
12 Federal Official for the Board.

13 On the line?

14 MS. LIN: Jenny Lin, HHS.

15 MR. RAFKY: Michael Rafky, HHS.
16 No conflict.

17 MR. KATZ: Welcome, Jenny,
18 Michael.

19 Any members of the public on the
20 line? There are none in the room.

21 MS. GIRARDO: Mary Girardo in
22 Niagara Falls, New York.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Oh, welcome, Mary.

2 Okay. That takes care of roll
3 call.

4 Let me remind folks on the phone
5 to mute your phone except when you are
6 speaking to the group. You use *6 to mute it
7 and *6 to come off of mute, if you don't have
8 a mute button.

9 And I can hear someone's
10 breathing. So, someone hasn't muted.

11 (Laughter.)

12 And there's an agenda for the
13 meeting which Andy will go over, but it is
14 online, too. It is on the NIOSH website under
15 the Board.

16 Thank you.

17 CHAIRMAN ANDERSON: The three
18 already mentioned, the three we are going to
19 discuss, we are going to begin with going back
20 over, at the last meeting we spent quite a bit
21 of time going over the issues matrix with
22 Hooker Electrochemical, and there were some

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 unresolved issues. So, we are going to start
2 with Hooker Electrochemical and then go to
3 Electro Metallurgical and then United Nuclear,
4 just for a quick update.

5 So, I guess I would turn it over
6 to -- are you going to --

7 MR. BARTON: Sure, I can kind of
8 introduce things.

9 I guess since the last meeting the
10 Board tasked SC&A with reviewing the
11 Evaluation Report. Since then, we have
12 released findings for that report.

13 Essentially, I think maybe the
14 best way to go about this is we just kind of
15 go one by one through these findings. And I
16 will ask Bill Thurber, since he is on the
17 line, and this is kind of his baby, that he
18 can kind of describe what his findings were
19 and what his thoughts were on that.

20 And then we can probably turn it
21 right over to NIOSH and they can present their
22 new information. Since then, there has been a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Site Profile and two White Papers that we have
2 seen that kind of address a lot of these
3 topics.

4 So, Bill, are you on the line?

5 MR. THURBER: Yes, I am.

6 I can go through the findings. I
7 would ask the Work Group whether it would be
8 more efficient to move directly to NIOSH's new
9 information. And the reason I suggest that is
10 this: that several of our findings were tied
11 in with TBD-6001, and TBD-6001 has been -- it
12 no longer exists, and I know that NIOSH has
13 addressed a number of our concerns in their
14 new standalone Site Profile of Hooker. So,
15 either way, I can go through the findings or
16 we can move on to the new discussion. Maybe
17 we should start with the findings.

18 CHAIRMAN ANDERSON: Yes, why don't
19 we just quickly go through that?

20 MR. THURBER: Yes. Okay. We had
21 one observation and I believe 10 findings,
22 which are all documented in the memo I sent to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 you all earlier or at the beginning of last
2 week.

3 Observation 1 is a point that we
4 have brought up on several occasions, and that
5 is the need to clarify whether
6 photofluorography is used at AWE sites. This
7 has been discussed on numerous occasions, but
8 it is just a loose end that needs to be tidied
9 up.

10 And the first finding dealt with
11 the question of how many barrels a month were
12 dumped by the Hooker people. The context here
13 is that Hooker received the slag from
14 ElectroMet in wooden whiskey barrels. They
15 dumped this material through a screen onto a
16 conveyor belt and conveyed it into a digester
17 tank where the slag, the uranium-bearing slag,
18 was slurried with hydrochloric acid.

19 The information in the
20 documentation that we looked at was unclear as
21 to how many days a month the slag-dumping
22 operation, which is probably the dustiest

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 operation and that which results in the
2 highest internal exposure, would have
3 occurred. And because the information was not
4 very clear to us, we felt that this question
5 needed to be examined in greater depth.

6 The second finding that we had, it
7 was when we read the original documents, it
8 was not clear that NIOSH had included in their
9 inhalation dose not only inhalation exposure
10 during the slag-dumping operations, but also
11 whether they had included inhalation dose for
12 other operations that were involved, that were
13 part of the whole slag-processing operation.

14 The third finding involved the
15 question as to whether some of the inhalation
16 exposures were unrealistically high. This,
17 again, harks back to a frequent discussion
18 that we have had as to what is plausible and
19 what is implausibly high. And obviously, this
20 is a gray area that is subject to considerable
21 technical judgment. But when we reviewed the
22 document, we felt some of the basis for the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 estimates was unrealistic.

2 The second observation here dealt
3 with the fact that it wasn't clear to us how
4 some of the external exposure calculations
5 could be traced clearly back to TBD-6001. Of
6 course, that issue will go away with the new
7 freestanding Site Profile.

8 Finding 4, again, well, no, I'm
9 sorry. Finding 4, there were some errors in
10 the calculations in Table AA3 of Appendix A.
11 And NIOSH had recognized those. I think that
12 David Allen and I had discussed those in the
13 past. This is merely to document that those
14 numbers needed to be corrected.

15 Finding 5, we felt that the
16 approach of trying to get bounding values from
17 Table 7.3 of TBD-6001 was not technically very
18 robust. We suggested that it would be better
19 to try to derive these external exposure
20 values from Microshield or MCNP rather than
21 using some workplace analogs that were perhaps
22 a stretch in the context of Hooker.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 External exposure values,
2 Observation No. 3, this was merely to indicate
3 that the terminology was rather loosely used
4 between TBD-6001 and Appendix AA regarding
5 millirad, millirem, et cetera, et cetera, mR,
6 and that they should be consistent.

7 Finding 6, again, we felt that one
8 could come up with a better estimate of
9 shallow-dose estimates, dose to the skin, by
10 using Microshield or MCNP rather than some of
11 the workplace numbers that came out of
12 TBD-6001. Again, we felt that using these
13 kinds of calculations would be technically
14 more robust than using some of the analogues
15 from TBD-6001.

16 Finding 7, there was an inhalation
17 intake of 1 picocurie per calendar day quoted.

18 It was a number that we had difficulty
19 tracing and suggested that it would be quite
20 helpful if the basis for that number was more
21 transparent.

22 Finding 8, again, a recurring

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 theme in all of these discussions, that is,
2 the basis for using a resuspension factor of 1
3 times 10 to the minus 6 should be fully
4 justified in the context of the operations at
5 Hooker. And we have discussed on numerous
6 occasions that the resuspension factor is
7 site-specific. You just can't always use 1
8 times 10 to the minus 6. We felt that the use
9 of that factor at Hooker needed to be more
10 stringently justified.

11 Finding 9 had to do with the
12 approach taken to calculating the inhalation
13 exposures in the residual period. We felt
14 that the approach did not adequately reflect
15 some of the criticisms that we had made in the
16 past on OTIB-0070.

17 Particularly, again, this in part
18 ties in with the resuspension factor and that
19 the resuspension factor and the decay rate
20 need to be consistent with one another. And
21 if you use 1 percent per day, that is not
22 consistent with the resuspension factor of 10

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 to the minus 6.

2 And finally, the calculation for
3 the external exposure and residual period
4 needed to be corrected because it reflected
5 the same error that was involved in one of the
6 earlier findings, in Finding 4, I believe.

7 So, that briefly summarizes the
8 comments that we had made and the findings
9 that we had uncovered. I don't see it here,
10 but I guess in subsequent conversations we
11 cited some information that suggested that
12 some of the slag might have remained at the
13 site after the beginning of the residual
14 period, and that was an item that needed
15 further investigation.

16 MR. BARTON: Yes, Bill, that
17 finding came out of the Evaluation Report
18 listed as Finding F.

19 MR. THURBER: Right. Yes.
20 Thanks, Bob.

21 So, I think that pretty much
22 summarizes it.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: Okay. Do we want to
2 go over these? Do we want to go over the DR
3 review?

4 CHAIRMAN ANDERSON: Let's go over
5 these first because I think we can maybe
6 either agree to disagree or --

7 MR. ALLEN: Okay.

8 CHAIRMAN ANDERSON: -- finish them
9 up.

10 MR. ALLEN: Observation 1 is about
11 clarifying the X-rays.

12 CHAIRMAN ANDERSON: We talked
13 about that last time.

14 MR. ALLEN: We talked about it
15 last time. I did put a sentence in the new
16 TBD that says PA chest X-ray.

17 CHAIRMAN ANDERSON: Okay. Yes.

18 MR. ALLEN: But whether that is
19 clear enough or not, I don't know.

20 CHAIRMAN ANDERSON: Yes, yes.

21 MR. ALLEN: But the root documents
22 will be revised here eventually.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. MAURO: This is John Mauro.

2 Regarding this question of
3 fluoroscopic examinations at AWE facilities, I
4 know that this has come up a number of times.

5 And I think I understand the policy that
6 would apply across the board to all AWE
7 facilities. It wouldn't hurt really for me
8 for a reminder, it is my understanding now
9 that the language in OTIB-6 that talks about
10 when you use or assume fluoroscopic, and I
11 believe it is something like if it is before
12 1960 or 1970 -- I forgot the exact date -- it
13 is automatically assumed that was used.

14 I think the intent -- and this is
15 where I am looking for some clarification --
16 was that was really meant for DOE facilities.

17 For AWE facilities, it was clarified and
18 corrected for us, for SC&A, that that doesn't
19 necessarily apply to AWEs. In AWEs, you would
20 only use fluoroscopic if there is evidence,
21 either in the contract itself between the
22 Atomic Energy Commission and the AWE that,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 yes, you shall do this or there was evidence
2 that it was there. So, you don't
3 automatically default to fluoroscopic, as you
4 do with DOE. It has to be an affirmative
5 statement that would drive you toward using
6 fluoroscopic when it comes to AWEs. Is that
7 understanding correct?

8 MR. ALLEN: Yes, that is correct.

9 I mean I would say that any information we
10 have, then we go away from defaults and use
11 that information, whether that is saying they
12 did have PFGs or did not have them or did have
13 a particular type of chest X-ray or something.

14 So, the defaults only apply when we have no
15 information on the particulars, say.

16 DR. MAURO: Well, no, but when it
17 comes to an AWE, though, unlike DOE where you
18 default to fluoroscopic examination, AWEs you
19 don't. You default to X-ray, unless there is
20 affirmative statement that, in fact,
21 fluoroscopic was used.

22 So, there is a fundamental

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 difference, which may very well be justified.

2 Don't get me wrong. I am not being critical.

3 I am trying to find like the one-size-fits-
4 all answer. So, when we don't see
5 fluoroscopic assumptions at an AWE facility,
6 there is good reason. There was no provision
7 for it in the contract, and there was no
8 evidence of its use at the facility.

9 Because if that is the case, then
10 in one fell sweep we do away with a whole
11 bunch of comments related to this matter at
12 AWE facilities. And I just wanted to get, I
13 guess, a statement made, perhaps on the
14 record, if that is, in fact, the case, or if
15 it is not, there's still more to the story,
16 that is okay, too. But that is where I am
17 right now. In fact, I have been discussing
18 this matter with our people, that that should
19 be our new position when we do AWE reviews.

20 DR. NETON: John, this is Jim.

21 I think you have got it right. I
22 mean this goes back a while now, but the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 concept, I believe, is that photofluorography
2 was used more in mass screening operations.
3 It was an efficient way to push through a
4 large number of people without -- well, it was
5 just more expeditious.

6 And many of these AWEs, you know,
7 smaller mom and pop type operations, there
8 would have been just no real reason to have
9 that type of procedure in place.

10 DR. MAURO: Yes, that was my
11 understanding, and that's fine because it was
12 just an open item that just kept recurring.

13 MR. THURBER: I would add one
14 other comment that was clarified to me, and I
15 think to some of the rest of us at SC&A in a
16 recent conversation. And that is that you
17 only consider X-rays if they are done onsite.

18 If the workers were sent offsite to a
19 hospital or a clinic or a physician's office,
20 those exposures are not included.

21 DR. NETON: Correct. That is the
22 language, the interpretation of the statute.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. BARTON: If I could ask a
2 question -- this is Bob Barton. Have we found
3 to date an AWE site that actually did have
4 this type of X-ray onsite that they used for
5 their workers?

6 MR. ALLEN: I don't remember any
7 photofluorography, but we did find one that
8 used fluorography, which is even worse. That
9 was Linde early on, up through mid-`44, I
10 think, or something like that.

11 MR. BARTON: Okay. So, there are
12 some sites where --

13 MR. ALLEN: There's other sites
14 where we have information where they went to a
15 local hospital for their X-rays, et cetera.

16 CHAIRMAN ANDERSON: But if it is
17 offsite, I mean we discussed it wouldn't be
18 covered, but I thought the assumption was --

19 MR. ALLEN: Yes, the default
20 assumption is they had X-rays --

21 CHAIRMAN ANDERSON: The default is
22 that it was.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: -- onsite annually,
2 standard PA chest X-rays.

3 DR. NETON: Linde was a DOE
4 facility at one point in that operation.

5 MR. ALLEN: That's true, but we
6 had information about their X-rays, and
7 defaults don't apply after that.

8 DR. NETON: Right. Once you have
9 got some information about what they did, we
10 would use that to the extent we could.

11 MR. BARTON: So, if you had
12 information that they definitely weren't
13 getting X-rays onsite, then we wouldn't
14 include it.

15 MR. ALLEN: Right.

16 MR. BARTON: But if you had no
17 information, then you would just default.
18 Okay.

19 MR. ALLEN: Yes.

20 MR. BARTON: I get it. Thank you.

21 MR. ALLEN: Okay. I think that is
22 it for that topic, right?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Finding 1 was essentially a
2 disagreement. I wouldn't say a disagreement,
3 but two interpretations of the 10 tons per
4 month on one report, whether that was the
5 input or the output. And I think we agree it
6 is not that clear or we did agree.

7 In the Technical Basis Document,
8 we went into more detail on that to try to
9 describe that it could be either one. And we
10 looked at, since this was very early on, this
11 is still during World War II, we could look at
12 how much uranium metal was produced by the
13 whole Manhattan Engineering District and how
14 much magnesium fluoride would be produced by
15 that.

16 And it turns out to where
17 Mallinckrodt made most of the uranium metal.
18 ElectroMet made the rest. I didn't have handy
19 as far as how much each one did. But even
20 assuming they were equal, they would not have
21 produced enough magnesium fluoride for that to
22 be the output, is basically what it came down

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 to in the evaluation they did in the Technical
2 Basis Document.

3 And I don't think Bill has weighed
4 in on the TBD, or if he has had a chance to
5 look at it close enough or not. Did you want
6 to weigh-in on that, Bill?

7 MR. THURBER: I don't care to
8 weigh-in.

9 (Laughter.)

10 But I did look at the new Site
11 Profile, the new TBD. And I did look at the
12 additional information that you provided in
13 there, which you have just described,
14 basically, the relative quantities of slag
15 that might have been produced at Mallinckrodt
16 as compared to ElectroMet and, therefore,
17 available to be processed at Hooker.

18 And there's no question that this
19 is ambiguous. A couple of things that bother
20 me, they don't bother me deeply, but the
21 couple of things that bother are these:

22 One, it has never been clear to me

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 why Hooker would have built a facility with as
2 much capacity as they built knowing that they
3 only had a certain amount of hydrochloric acid
4 to use, which was a byproduct from some other
5 chemistry that they were practicing. And they
6 had enough capacity to process, I forget what
7 I estimated, but 10 or 15 times the amount
8 that they apparently actually processed. That
9 puzzled me a little bit.

10 The other thing that bothers me a
11 little bit is that the documentation said,
12 well, the uranium content was increased from
13 one pound to five to ten pounds. The
14 inference is that it was one pound to five to
15 ten pounds per 500 pounds because 500 pounds
16 was the content of a slag barrel. Now I don't
17 know whether in local usage that it could have
18 been one pound per 100 pounds, which is common
19 parlance at the operation. So, that is a
20 little fuzzy.

21 But, on balance, I think that new
22 documentation favors the approach taken by

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 NIOSH.

2 MR. ALLEN: Okay. I don't know
3 how you want to run this. Do you want to try
4 to close out findings or just go through them
5 all?

6 CHAIRMAN ANDERSON: Well, if we
7 could close it, I mean, is there --

8 MR. ALLEN: I am not sure what
9 SC&A's --

10 CHAIRMAN ANDERSON: If we can
11 close it all, I would like to. I mean I don't
12 know what more --

13 MR. ALLEN: SC&A has only had
14 about 30 days or so since they have gotten
15 that TBD. I don't know if they have reached
16 -- I don't know if Bill is talking like an
17 official --

18 MR. THURBER: We haven't even been
19 formally tasked to review it, I don't think.

20 MR. ALLEN: Okay.

21 MR. THURBER: Have we, John?

22 DR. MAURO: No. We were just

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 asked to read it to the extent that it would
2 be helpful for the purpose of this meeting,
3 but not to actually perform a formal review of
4 the revised TBD and write a report.

5 So, really, this is not unlike
6 other circumstances where we will read it, and
7 very often just giving it a read to see if, in
8 fact, it deals with the issue appropriately,
9 that does go a long way.

10 Bill, from what you read, do you
11 think that the business of one day per month,
12 isn't this the 5 percent number?

13 MR. THURBER: Yes. Yes.

14 DR. MAURO: And I remember that
15 you had a concern with the 5 percent number,
16 not only because of quantity, but also because
17 of the physical work, unloading the trains and
18 loading it and unloading it, and dumping it.

19 I remember the original review.
20 So, it went more not only to perhaps the
21 quantity of slag that was shipped, but, also,
22 the actual operation and how much time a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 worker might really spend in --

2 MR. THURBER: Well, but they were
3 tied, they were actually linked, John.

4 DR. MAURO: Right. Right.

5 MR. THURBER: If they were really
6 processing only 10 tons a month, then the
7 NIOSH assumption of one day per month or 5
8 percent of the time was solid. If they were
9 processing more, then it was an
10 underestimation.

11 Obviously, another choice is to
12 opt for the more conservative number.

13 DR. MAURO: From what you have
14 read, what I just heard is that in the new TBD
15 the sense that quantities were appropriate and
16 that, everything taken into consideration,
17 exposure to airborne dust from the handling of
18 5 percent of the time or I guess one day per
19 month seems to be reasonable.

20 But I know originally you did have
21 a concern that --

22 MR. THURBER: Yes. Well, indeed,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 because there was a lot of ambiguity in the
2 original documents, and there still is. Now
3 what NIOSH has done is they have looked a
4 little further afield to estimate how much
5 slag might have been available within the
6 weapons complex in total --

7 DR. MAURO: I see.

8 MR. THURBER: -- and what fraction
9 of that on the upside might have been produced
10 at ElectroMet. That number that could have
11 been produced at ElectroMet does not jibe with
12 the high-side production that could have
13 occurred at Hooker.

14 DR. MAURO: Okay.

15 MR. THURBER: That is, of course,
16 their position.

17 DR. MAURO: Okay. So, good. The
18 new information, you say the weight of
19 evidence, of course, not absolute, seems to be
20 driving it toward the one day per month as
21 being a pretty reasonable number.

22 MR. THURBER: Yes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 DR. MAURO: Well, you know, I know
2 Bob and John, Bob Barton and John Stiver have
3 looked at this a bit in getting ready for this
4 meeting. Is there anything about that that
5 you feel that might still be problematic, or
6 should we let this one go?

7 MR. BARTON: Well, I do have --
8 this is Bob Barton -- I do have one question.
9 I am looking at the TBD right now, Section
10 3.2, which kind of deals with this issue. You
11 cite a War Department memo that indicates 152
12 tons of slag essentially during the operating
13 period, July 1944 to January 1946. But the
14 memo you cite is dated March of 1945.

15 So, I mean, does that include
16 projections for how much they were planning to
17 process at the site? Because, how would they
18 know? Or maybe that date is just --

19 MR. ALLEN: I think that date is
20 an error, honestly. I think I have that
21 somewhere on my drive here.

22 CHAIRMAN ANDERSON: So, it would

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 have been in the middle of the period.

2 MR. ALLEN: It was a medical
3 clearance. It was a memo for medical
4 clearance that they did in the War Department.

5 The contract is over; we want to clear this
6 out type of thing.

7 So, it was definitely after the
8 process, and it was the P-45 process which the
9 hydrochloric acid was a byproduct of that,
10 that they used for the digestion. The mag
11 fluoride digestion was a supplement to that
12 contract or amendment or some term.

13 But let me dig up that memo. I am
14 not sure --

15 DR. NETON: While Dave is looking
16 for that, I just have a process question. We
17 are going through these findings on the TBD,
18 but, also, do we not have an Evaluation Report
19 hanging in the balance as well?

20 MR. ALLEN: Yes.

21 DR. NETON: Right. So, it seems
22 to me that the SEC Evaluation Report would be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 a higher priority to close out than these
2 individual findings, and some of these
3 findings that we are talking about here right
4 now are, I think we might agree they are not
5 really -- they are Site Profile issues, but
6 they are not necessarily going to relate to
7 our ability to bound doses during the SEC
8 period. So, I don't know. Maybe --

9 CHAIRMAN ANDERSON: See, I thought
10 this would. I thought that the assumption
11 that it is only one day a month during the SEC
12 period versus if it might have been that the
13 maximum could have been five days a month
14 would make a difference, wouldn't it?

15 DR. NETON: Well, it would make a
16 difference, but whether we adopt one number or
17 the other, we could agree at some point on one
18 of those numbers. It is a matter of which is
19 the one we are going to use, not can we put an
20 upper limit on it at all.

21 MR. KATZ: But if we can put some
22 of these to bed, I mean because they are

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 relatively simple and there's not more digging
2 to do, we might as well, right?

3 DR. NETON: Yes, that is fine,
4 but, then, we are going to have to go back
5 again when we do the ER analysis. Yes, I
6 don't know.

7 MR. KATZ: I mean we are doing the
8 ER right now. This is part of that.

9 DR. NETON: No, this is the Site
10 Profile.

11 These have to be taken in the
12 context of the ER, which I think would be the
13 best thing, the most important thing to close
14 out first.

15 But we can go through this. Maybe
16 we should just all keep in mind --

17 CHAIRMAN ANDERSON: Yes, I guess I
18 was just looking at this one particularly as
19 an uncertainty, you know, that the ability to
20 dose reconstruct, if we really don't know how
21 much was processed and how frequently, yes,
22 you can take the amount of acid that was

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealgross.com

1 generated there and say they couldn't have
2 processed more than that, and how much would
3 it take to do that, to do an upper bound. But
4 all of that, again, it is back to the old you
5 can bound anything. The question is, how much
6 do we really know about this?

7 DR. NETON: Okay. That's fine.

8 CHAIRMAN ANDERSON: But I don't
9 want to go on forever on this, but --

10 DR. NETON: We can go through it.
11 I just want to make sure --

12 CHAIRMAN ANDERSON: Yes. But this
13 one I thought was probably more important than
14 the others, some of the others. Now maybe I
15 am wrong on those, too.

16 MR. ALLEN: I think some of the
17 issues from the Evaluation Report review are
18 also here in the Appendix review. So, I think
19 if we get through this and, then, go to the ER
20 review --

21 DR. NETON: Okay. That's fine. I
22 just wanted to make sure I wasn't off base

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 with my thinking on the ER being --

2 CHAIRMAN ANDERSON: Yes. No, I
3 would agree with you on that.

4 DR. NETON: Okay.

5 DR. MAURO: This is John.

6 One more, to throw a little more
7 into the pot. As we go through these, my
8 sense is if we are able to resolve the issues
9 here, as we are looking at them, will that
10 resolve them? Whether they are ER or they are
11 Site Profile issues, they are resolved.

12 If it turns out, though, that
13 there is still a little ambiguity, like we are
14 talking about right now, it wouldn't hurt to
15 say whether there is agreement by the Work
16 Group. Whether we are dealing with an SEC or
17 a Site Profile issue, it helps to sort of get
18 the process clearing the slate a little bit.
19 So, it means that, okay, we have cleared it as
20 an SEC issue, but it may still remain as an ER
21 issue.

22 I would agree that this business

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 of number of days per month, the ambiguity
2 that is there, what I am hearing is that, yes,
3 there may be a little -- what I am hearing is
4 that it is more or less resolved, except for
5 that one question that Bob Barton just brought
6 up. And that would resolve it both as an SEC
7 and a Site Profile issue.

8 MR. BARTON: The other thing I
9 would add to that, John -- this is Bob again
10 -- is there is a pretty compelling argument
11 made in the Site Profile that is sort of some
12 scoping calculations that, for lack of a
13 better word, is sort of the material balance
14 between these sites. And if we have that
15 quoted number from this War Department memo of
16 152 tons of slag process, and it also says
17 that a lot of it also went over to Lake
18 Ontario Ordnance Works, I mean I don't know,
19 is that information available at Lake Ontario
20 as to how much they processed? Because that
21 would kind of round out that sort of material
22 balance argument, saying they processed this

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 much, so it is not even possible that that
2 much could have been sent to Hooker.

3 MR. ALLEN: I think in, like 1949,
4 we know how much slag they had at Lake
5 Ontario. I just don't know if I have the
6 number --

7 MR. BARTON: It really closes the
8 thing out?

9 MR. ALLEN: I don't have that
10 number right now handy.

11 MR. BARTON: Obviously.

12 MR. ALLEN: Actually, the War
13 Department memo you are talking about I do
14 have handy. It is right here. And that is a
15 typo in the TBD. It is March 8th, 1946.

16 CHAIRMAN ANDERSON: Well, that's
17 good.

18 MR. ALLEN: That makes a lot more
19 sense.

20 CHAIRMAN ANDERSON: Yes.

21 MR. BARTON: Well, especially
22 under the determination, you know.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Yes, yes.

2 Well, that ought to be a pretty --

3 MR. ALLEN: I was thinking it was
4 an error in the memo, but it is not. It is an
5 error in the TBD. Yes, it's not the only one.

6 (Laughter.)

7 DR. NETON: Yes, there is one more
8 we know of.

9 CHAIRMAN ANDERSON: Yes.

10 MR. ALLEN: Two more.

11 CHAIRMAN ANDERSON: Two more?
12 Okay.

13 MR. KATZ: So, just a last
14 question, for all of these, I mean in this
15 case, the question with Lake Ontario, is that
16 something that needs to be buttoned up? Or is
17 this put to bed in terms of materials balance?

18 DR. MAURO: This is John, just to
19 help out a little bit.

20 It sounds like the discussion
21 really was between Bob Barton and Bill. Bill,
22 your sense is you are ready to put this one to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 bed.

2 Bob, in light of what you just
3 heard, are you ready to put this to bed?

4 MR. BARTON: I'm pretty
5 comfortable with that. I was just making the
6 suggestion that it would really kind of knock
7 this thing out of the park, to the point
8 where, obviously, you couldn't have more than
9 that 10 tons coming in. I mean everything
10 else, I mean the new information provided in
11 the TBD and all that looks kosher to me.

12 DR. MAURO: Also, to take an SC&A
13 stand here, I think we put this to bed. We
14 recommend to the Work Group that we close this
15 issue as an SEC and as a Site Profile issue.

16 CHAIRMAN ANDERSON: Okay. Bill,
17 do you have any comments?

18 MR. THURBER: No. That's fine.
19 That's fine.

20 CHAIRMAN ANDERSON: Bill? The
21 other Bill, yes.

22 MEMBER FIELD: No, it's fine with

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 me as well.

2 CHAIRMAN ANDERSON: Okay. So, for
3 the record --

4 MR. KATZ: It's closed.

5 CHAIRMAN ANDERSON: -- closed,
6 this one is. And one day a month seems to be
7 a reasonable process figure.

8 Okay. Good. Are you happy?

9 (Laughter.)

10 Okay. I didn't want to chew on it
11 all morning, though. Yes, I agree with you on
12 that.

13 MR. ALLEN: Well, the next one
14 might be a little faster. That was, if I get
15 this right --

16 MR. KATZ: The next one is about
17 inhalation for operations other than --

18 MR. ALLEN: Finding 2 was the time
19 for dumping the material, whether that could
20 be done in one day or not. And I think that
21 was, honestly, related to, if there was 10
22 times the throughput, no, it couldn't be done

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 in a day.

2 MR. THURBER: No, no. No, finding
3 2 was related to --

4 MR. ALLEN: I'm wrong on this?

5 MR. THURBER: -- our concern that
6 in your --

7 MR. ALLEN: I'm sorry. You're
8 right.

9 MR. THURBER: -- inhalation
10 calculation you only looked at the inhalation
11 exposures during the slag dumping and not what
12 the workers did the other 29 days, what
13 exposure they received the other 29 days in
14 the month. That was what finding 2 was about.

15 And as I recall, David, you and I
16 discussed this, and you pointed out to me
17 that, while it was not apparent in Appendix AA
18 or not easily discernible in Appendix AA that
19 you had, indeed, included in the calculation
20 exposures during the rest of the month, that
21 they were, indeed, very small, and so they
22 almost showed up as a rounding error.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: Yes, you are right.
2 That is the finding. I was messed up there.

3 Well, it is kind of a moot point
4 now with the TBD. Now it is a different
5 method in there now. Hopefully, I have it
6 described well enough.

7 I think you pointed out one item
8 in there where I didn't mention that we are
9 using 95th. But, other than that, hopefully,
10 the description in there is adequate to come
11 up with where the number came from, and it is
12 accounting for 100 percent of the time.

13 Anything you want to add on that
14 one, Bill?

15 MR. THURBER: No. No, I think
16 that, again, based on my quick review of the
17 new TBD, that it is adequately covered. It
18 would help the reader if a sentence or so was
19 added to indicate that while in the document,
20 the TBD document, you suggest several options,
21 you actually took the more conservative option
22 and used the 95th percentile. That point was

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 not crystal-clear in the TBD. But my
2 understanding of what you did is conservative,
3 is appropriately bounding.

4 MR. ALLEN: Yes, and John Mauro
5 and Bill did find another error in the
6 existing TBD that we are going to make a quick
7 revision to correct. So, in doing that, I
8 will specify the 95th, which, apparently, I
9 left out of that. And now I have got a date
10 on a memo to correct, too.

11 Is that it for finding 2?

12 MR. THURBER: Yes, I'm satisfied.

13 MR. KATZ: Okay, closed.

14 CHAIRMAN ANDERSON: Three.

15 MR. ALLEN: Okay. Finding 3 was a
16 discussion on whether the airborne was
17 unrealistically high. And it is kind of a
18 moot point now that the current TBD is not
19 using the old TBD-6001 values.

20 And at the last Work Group
21 meeting, I think the answer was for SC&A to
22 review the Evaluation Report, which I am not

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 sure that helps.

2 CHAIRMAN ANDERSON: I mean this
3 really is an issue for the ER, which we will
4 probably --

5 MR. ALLEN: Yes, and I did include
6 a surrogate data justification in the
7 documentation I sent to the Work Group.
8 Again, I don't know what has been reviewed and
9 what hasn't, how much time is needed.

10 I don't know if we want to close
11 this one, hold it over for the ER talk, or
12 what. I guess we hold onto this one?

13 CHAIRMAN ANDERSON: Yes.

14 MR. BARTON: Well, is it really
15 even a finding anymore since --

16 CHAIRMAN ANDERSON: Yes, I mean I
17 think it is generically part of the ER
18 discussion, but not specifically.

19 MR. BARTON: I think if that came
20 up as a problem in the ER review up here in
21 the --

22 CHAIRMAN ANDERSON: Yes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. BARTON: -- in the Review
2 report --

3 CHAIRMAN ANDERSON: Yes, yes.

4 MR. BARTON: To be honest, I am
5 looking through it. I don't quite see
6 anything where we say the method is
7 unrealistically high. But I don't know if
8 that is something we really attack under a
9 Site Profile review --

10 CHAIRMAN ANDERSON: Yes.

11 MR. BARTON: -- instead of an
12 Evaluation Report.

13 MR. KATZ: So, this can be closed
14 here?

15 DR. MAURO: This is John.

16 This is for my edification. So,
17 in Finding 3, the concern had to do with using
18 surrogate data in TBD-6001 as perhaps being
19 unrealistically high. Is that where we are?

20 MR. THURBER: That is what the
21 finding was.

22 DR. MAURO: Right, but TBD-6001

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 now is defunct.

2 MR. THURBER: Right.

3 DR. MAURO: So, they are using now
4 actual data for Hooker?

5 MR. THURBER: No, they are using
6 surrogate data from other places that were
7 handling slag.

8 DR. MAURO: Okay, got it.

9 MR. THURBER: Mallinckrodt and
10 Fernald.

11 DR. MAURO: All right. And, Bill,
12 I remember you were looking at this
13 originally. Was it your sense that the slag
14 approach for Mallinckrodt now, as opposed to
15 the default values that were originally in
16 TBD-6000 falls within the realm of
17 scientifically-sound and sufficiently-
18 accurate?

19 MR. THURBER: Yes.

20 DR. MAURO: Oh, okay. So, this is
21 not something we have to look at further?

22 MR. KATZ: Something you do not

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 have to look at further?

2 DR. MAURO: Yes, that's what I
3 mean. Is this something we do not or is there
4 still some action --

5 CHAIRMAN ANDERSON: This was more
6 generic than what is currently proposed for
7 the use of surrogate data. So, I think we can
8 close this.

9 DR. MAURO: Okay.

10 MR. KATZ: Bill Field, is that
11 good with you, closing it here?

12 MEMBER FIELD: Yes, I think that
13 is fine.

14 MR. ALLEN: Okay, moving on,
15 Observation 2 was a math error in the external
16 dose. It was kind of a small error that is
17 not there anymore. I mean it is not relevant
18 to the new TBD.

19 CHAIRMAN ANDERSON: Yes, that's
20 closed.

21 MR. ALLEN: Yes, if you can close
22 observations. I'm not sure.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Yes. So, it
2 has been addressed.

3 MR. ALLEN: It has been addressed.
4 Yes, that particular error was 350 days in a
5 calendar year instead of 365.

6 CHAIRMAN ANDERSON: Yes. Yes.

7 MR. ALLEN: I don't know who put
8 that one in there.

9 (Laughter.)

10 CHAIRMAN ANDERSON: Those gremlins
11 creep in.

12 MR. ALLEN: That is one of those
13 that --

14 CHAIRMAN ANDERSON: Well, we found
15 them. That's the good.

16 MR. ALLEN: There's no arguing
17 with that kind. It is real obvious. You
18 just fix them.

19 CHAIRMAN ANDERSON: Even in 1946
20 we had 365 days. Okay.

21 (Laughter.)

22 MR. ALLEN: Finding 4 was another

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 error in the external calculation, and that
2 one was TBD-6001. Again, it is no longer
3 relevant. External doses are calculated very
4 differently now.

5 CHAIRMAN ANDERSON: Yes. Okay.
6 That's closed.

7 MR. ALLEN: Finding 5 was, again,
8 values pulled from 6001 were not realistic.
9 The Appendix review recommended using MCNP,
10 and that is what was done in the TBD. The new
11 TBD was an MCNP run.

12 CHAIRMAN ANDERSON: Okay.

13 DR. NETON: There was an error in
14 that calculation?

15 MR. ALLEN: Yes, there was a
16 factor of a hundred error that crept into
17 there. It was external dose from
18 contamination. And it might not have been the
19 most obvious on Finding 5, but, then, the same
20 factor crept into Finding 10, which ended up
21 being the primary external dose during the
22 residual period.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Okay.

2 DR. MAURO: Is this the matter
3 that I think was cleared up over the last
4 couple of weeks?

5 MR. THURBER: Yes.

6 DR. MAURO: Very good. Yes. So,
7 Bill, you had a chance to look at that, and
8 you're okay now?

9 MR. THURBER: Yes, I'm okay with
10 that.

11 DR. MAURO: Okay. Great.

12 MR. THURBER: I mean I am okay
13 with the corrected number. I mean I haven't
14 seen the corrected number, but I understand
15 where it is going to be, and I'm okay with it.

16 MR. ALLEN: Okay, we move on to
17 Observation --

18 MR. KATZ: Closed. I'm sorry.
19 Closed, right?

20 CHAIRMAN ANDERSON: Well, it's
21 closed, yes.

22 MR. KATZ: Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

MR. ALLEN: Observation 3, again, is there were some millirem doses used in TBD-6001, and they were cited as milliroentgen, I think. I don't remember the details, but there was interchanging of mR and millirem, and trying to pay a little more attention to that.

Finding 6 --

CHAIRMAN ANDERSON: So, that --

MR. ALLEN: I'm sorry.

CHAIRMAN ANDERSON: That's fixed.

MR. ALLEN: Finding 6 was beta dose extrapolated from uranium. They thought it was not, and probably rightfully so, felt it wasn't -- I don't know how you would say it -- a valid approach to that. I believe the review recommended MCNP calculation, and that is what was done in the new TBD. There is a whole new external dose calculation in the new TBD.

DR. MAURO: So, the new TBD has

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 the correct value, or is that something that
2 is a commitment?

3 MR. ALLEN: The new TBD has an
4 MCNP run that used a -- I'm sorry -- it used
5 MCNP to come up with new values. So, this
6 particular finding, the issue is gone really.

7 DR. MAURO: Okay.

8 MR. ALLEN: Whether a new issue
9 creeps up is a different story.

10 DR. MAURO: Right, right.

11 MR. ALLEN: But, as I mentioned,
12 there was another error in the TBD that I need
13 to correct here. That's what John and Bill
14 pointed out to me, and that was in the beta as
15 well as gamma dose rates from the barrels. It
16 was another spreadsheet math error in there,
17 and that is going to be corrected here soon.

18 Is that what you are talking
19 about?

20 MR. THURBER: David, this is Bill.

21 On the beta dose issue, it wasn't
22 clear to me where the dose to the skin other

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 than the hands and arms came from in the new
2 TBD.

3 MR. ALLEN: It came from MCNP-run
4 contact dose rates. Is that -- ?

5 MR. THURBER: Well, I thought you
6 got the dose to the hands and arms from the
7 MCNP run.

8 MR. ALLEN: Yes, we calculated a
9 contact dose rate, a 1-foot dose rate, and I
10 think a 1-meter dose rate.

11 MR. THURBER: Oh, okay. All
12 right. Okay.

13 And so, what did you use, 1 foot
14 or something, for the rest of the skin?

15 MR. ALLEN: I believe it was. It
16 should be specified in there. I am looking at
17 the TBD right now.

18 MR. THURBER: It may be. As I
19 say, I didn't --

20 MR. ALLEN: That is one of those
21 paragraphs that has all kinds of information
22 in it that is just --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. THURBER: Right.

2 MR. ALLEN: -- you know, you toss
3 through it all.

4 MR. THURBER: Yes.

5 MR. ALLEN: And I'm still looking.

6 DR. MAURO: While you're looking,
7 I have a question by way of process. In some
8 Work Groups, an issue is closed after the TBD
9 or procedure or whatever the work product is
10 that NIOSH is preparing has been revised. In
11 this case, it sounds like that there are
12 commitments being made to everyone's
13 satisfaction that, yes, that correction, when
14 made, will solve this problem. But the actual
15 document has not been issued with that
16 revision.

17 This is just really a protocol
18 question, Andy, on how you would like to run
19 this. We certainly could close issues out on
20 these verbal commitments. Or would you prefer
21 to wait until you actually see the revision in
22 the product?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: I don't know if that
2 is the same thing, John. I mean, that is
3 done, I mean, the findings themselves, there
4 has been a TBD written that addresses those
5 findings. And, then, there are additional
6 minor errors -- there is a typo on a date --
7 that is not so much part of the finding as an
8 additional piece of information mentioned in
9 this meeting today that was a question.

10 DR. MAURO: Oh, I misunderstood.
11 I thought there was a couple of these typos --

12 MR. THURBER: Yes, but, John, this
13 is Bill.

14 I think that the point that is
15 being made is that our finding was, we don't
16 like the way you are doing it; you ought to
17 use MCNP.

18 DR. MAURO: Right.

19 MR. THURBER: And NIOSH's response
20 is, we agree; we are using MCNP -- not that we
21 did MCNP right, because there is a subtlety
22 there.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. MAURO: Oh, okay.

2 (Laughter.)

3 MR. ALLEN: That sounds bad when
4 you say it.

5 (Laughter.)

6 CHAIRMAN ANDERSON: So, is the TBD
7 going to be revised or has it been revised?

8 MR. ALLEN: The TBD has been
9 written to replace the Appendix.

10 CHAIRMAN ANDERSON: Right.

11 MR. ALLEN: And I think the TBD,
12 as it stands right now, addresses all the
13 issues, in the process of completely --

14 CHAIRMAN ANDERSON: But we haven't
15 seen that?

16 MR. ALLEN: Yes, that is what I
17 sent April 7th.

18 CHAIRMAN ANDERSON: Okay.

19 MR. ALLEN: But what John is
20 pointing out is there are an error or two in
21 the new TBD, but I don't think they really go
22 towards the issue.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Okay.

2 MR. ALLEN: You know, there is a
3 math error here and a typo there.

4 CHAIRMAN ANDERSON: Yes, okay.
5 Okay. So, we're okay. I mean, I don't want
6 to change --

7 DR. MAURO: Andy, if you're okay,
8 we're okay.

9 CHAIRMAN ANDERSON: Well, I mean,
10 as long as these have been fixed -- I don't
11 have that document here. So, I don't know
12 that it has, but I would rather not completely
13 close it out. I don't know. Maybe we could
14 kind of put it in a holding --

15 MR. KATZ: It's fine. I think it
16 is fine to close it.

17 CHAIRMAN ANDERSON: Yes, yes.

18 MR. KATZ: I mean, these are minor
19 calculational errors that you are going to
20 fix, or whatever. But what John is referring
21 to is, with the Procedures Subcommittee, when
22 there's agreement on an approach, but it

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 hasn't been sort of sorted out --

2 CHAIRMAN ANDERSON: Implemented,
3 yes, yes.

4 MR. KATZ: -- implemented, so that
5 they can actually see the fine details of
6 it --

7 CHAIRMAN ANDERSON: Yes.

8 MR. KATZ: -- it is put in
9 abeyance because there is agreement in the
10 approach --

11 CHAIRMAN ANDERSON: Yes.

12 MR. KATZ: -- but it is not closed
13 until they actually see the approach.

14 CHAIRMAN ANDERSON: Yes.

15 MR. KATZ: Here you already have
16 the approach laid out.

17 CHAIRMAN ANDERSON: Yes.

18 MR. KATZ: There is a
19 calculational error.

20 CHAIRMAN ANDERSON: Yes.

21 MR. KATZ: It's not really --

22 CHAIRMAN ANDERSON: Yes. Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MR. KATZ: You know, it doesn't
2 take anything to fix that, as long as there is
3 intent to fix it.

4 CHAIRMAN ANDERSON: Good. Fine.

5 MR. KATZ: It doesn't take
6 imagination to know that that number will be
7 fixed.

8 CHAIRMAN ANDERSON: Well, I just
9 don't want to have --

10 MR. KATZ: Right.

11 CHAIRMAN ANDERSON: I mean, we are
12 probably not going to go back to these.

13 MR. ALLEN: Yes, we don't want to
14 lose track of something.

15 CHAIRMAN ANDERSON: You lose track
16 of it, and, then, it stays there.

17 MR. KATZ: So, at a future
18 meeting, you can just tick off, you know, that
19 you have corrected these calculational errors.

20 CHAIRMAN ANDERSON: Okay. Sounds
21 good.

22 MR. KATZ: And that will put that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 on the record.

2 CHAIRMAN ANDERSON: Yes.

3 MR. ALLEN: And backtracking to
4 where we were here, Bill, as far as the beta
5 dose and what we used, it is at the top of
6 page 13 of the TBD.

7 MR. THURBER: Yes, I --

8 MR. ALLEN: You found it?

9 MR. THURBER: I just saw that.

10 MR. ALLEN: Okay.

11 MR. THURBER: The other
12 conversation was going on.

13 (Laughter.)

14 And I understand it.

15 MR. ALLEN: Okay. Was that all we
16 had for Finding 6, then?

17 CHAIRMAN ANDERSON: Yes.

18 MR. KATZ: So, that's closed.

19 MR. ALLEN: Okay.

20 MR. KATZ: Is that correct?

21 CHAIRMAN ANDERSON: Yes. Yes.

22 MR. ALLEN: And Finding 7, intake

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 value could not be reproduced. And we agreed
2 that we would add detail, which, it is done
3 very differently now. And I believe the
4 detail is in the TBD, minus that mention of
5 the 95th that we already mentioned today.

6 Do you have anything on that one,
7 Bill?

8 MR. THURBER: No.

9 MR. ALLEN: Okay.

10 CHAIRMAN ANDERSON: So, that
11 sounds done.

12 MR. ALLEN: I believe so.

13 CHAIRMAN ANDERSON: Yes. Okay.

14 MR. ALLEN: Finding 8 is one where
15 we used the resuspension factor of 1 times 10
16 to the minus 6. The conversation, as I recall
17 from the last Work Group meeting, was that --
18 and, John Mauro, feel free to stop me if I say
19 something wrong, but I believe you were
20 saying -- we used an NRC document that uses 1
21 to the minus 6 as an upper bound for the
22 resuspension factor. SC&A has pointed out

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 that that is a screening level for
2 decommissioning facilities. And they say that
3 it is assuming that the area has been washed
4 down.

5 The conversation at the last Work
6 Group meeting was this should be transferred
7 to the Procedures Group, who is dealing with
8 this. And the conversation ended up going
9 towards we could possibly justify that for
10 this particular site.

11 So, in the Technical Basis
12 Document, I pointed out that the majority of
13 the airborne would be from the dumping
14 operation that was reported to have been
15 outside on a concrete pad in upstate New York.

16 And in upstate New York you are going to get
17 a lot of weather, rain, snow, et cetera.
18 Well, the outside area there, that is
19 effectively being washed down very quickly.
20 So, for the residual period, that resuspension
21 factor should apply, if that is the criteria,
22 washing it down.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 And that justification is in the
2 TBD right now.

3 CHAIRMAN ANDERSON: So, this is
4 predominantly or exclusively for the residual
5 period?

6 MR. ALLEN: Yes.

7 CHAIRMAN ANDERSON: Okay.

8 DR. MAURO: Was this material
9 sitting like on a pad? Well, I guess we are
10 outdoors now, and I have to admit that, once
11 you move outdoors, the game plan changes and
12 the Anspaugh equation that we have seen in the
13 past, that brings you very quickly to very low
14 resuspension factors from weathering, and
15 others have published.

16 So, in effect, what you are saying
17 is this one item, this issue No. 8, deals with
18 outdoors and the use of a 10 to the minus 6
19 resuspension factor outdoors?

20 MR. ALLEN: Yes. Well, we used
21 the contamination level derived from the
22 airborne level that was primarily outdoors. I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 mean, there is some potential indoors for some
2 contamination, but it is going into a vat of
3 acid. It is a liquid system. And, then, the
4 only other operation in there really is
5 filtering and drumming to filter it. And that
6 is still going to be a moist material.

7 So, we based it on deposition
8 outdoors, which is going to give us a much
9 higher number than basing it on the deposition
10 from any airborne indoors. So, I think in the
11 case of Hooker, you can essentially say the
12 outdoor contamination would be the greatest,
13 and it was certainly weathered.

14 MR. BARTON: And, Dave, just to
15 make sure I am reading this right, it says you
16 are not considering any removal mechanisms.
17 Does that even include like radioactive decay
18 or being blown off the pad and offsite?

19 MR. ALLEN: No.

20 MR. BARTON: So, what falls there
21 is there for the entire -- so, that is another
22 layer of conservatism.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: Yes.

2 DR. MAURO: And that is outdoors,
3 assuming 10 to the minus 6 outdoors, and it
4 stays constant, is a conservative approach.
5 Because arguments could be made outdoors it
6 could start around 10 to the minus 5, 10 to
7 the minus 6, and rapidly decline to 10 to the
8 minus 9 for outdoors.

9 I am a little confused right now
10 because I haven't looked at all of this
11 material recently. But, in item 8, we are
12 talking solely about outdoor dose
13 reconstruction under item No. 8? Or do we
14 need to parse this between 8, and outdoor and
15 indoor? Maybe that would be a little more
16 productive. Because we do have some pretty
17 strong feelings about how you deal with
18 indoor.

19 MR. ALLEN: Well, what we are
20 talking about is a residual period.

21 DR. MAURO: Right. And it sounds
22 like you have broken the residual period, and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealgross.com

1 you are talking about, well, there is some
2 potential for exposure outdoors during the
3 residual period and there is potential for
4 exposure indoors during the residual period.
5 And what I am hearing is the approach that you
6 are using for outdoor, which is this 10 to the
7 minus 6 number, is certainly reasonable.

8 But I haven't heard a little bit
9 more -- and anyone jump in and help me out --
10 what about indoor during the residual period?

11 MR. ALLEN: Well, what we did for
12 the residual period is assume that that
13 outdoor was deposited for a full year. And,
14 then, we used the 1 to the minus 6 on it. The
15 indoor airborne is quite a bit lower than what
16 the outdoor would be. If you were to
17 calculate a contamination level indoors and
18 apply some higher resuspension factor, I am
19 not sure it is going to be more favorable.

20 DR. MAURO: I hear what you are
21 saying, but has that been done? In other
22 words, on your indoor side of the house now

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 you are saying that the potential for surface
2 contamination becquerels per meter squared is
3 a lot lower indoors than it is outdoors, and
4 that becomes a different starting point? But
5 then, once I am at that point, let's say
6 whatever that starting point is, and it could
7 be quite a bit lower than outdoors, then it
8 becomes a matter of, all right, now we have to
9 talk a little bit about what is a reasonable
10 resuspension factor and/or a reasonable rate
11 at which it goes away, this 1 percent per day
12 business. So, that brings us squarely into
13 the open 70 issue, once you move indoors.

14 MR. ALLEN: Okay. Well, our
15 position is still the 1 to the minus 6 is
16 relevant for indoors, too. So, we went with
17 the higher airborne-causing, which is
18 outdoors.

19 DR. MAURO: Okay.

20 MR. ALLEN: If this is not
21 justification enough for the 1 to the minus 6,
22 we can transfer this to the Procedures Group,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 but this was our attempt at addressing that
2 and closing it out altogether.

3 DR. MAURO: Well, I hear that,
4 basically, you are using a heuristic. You are
5 saying, listen, outdoors was where the action
6 was, and the levels of contamination were much
7 higher on surfaces outdoors. And then you
8 said, okay, we are going to use the same
9 assumption for indoors, because that was
10 intuitively obvious that it was worse for
11 surface contamination.

12 Now here you are indoors during
13 the residual period. You are starting off
14 with the contamination on surfaces indoors,
15 that clearly and unambiguously was
16 conservative because you are assuming it is
17 the same levels as you had outdoors.

18 And I guess the argument, you
19 know, given your argument, that certainly
20 sounds reasonable and bounding. It is moving
21 on from there which is not apparent that you
22 are necessarily going to be bounding for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 indoors; namely, the 10 to the minus 6 and the
2 1 percent per day.

3 It would be good to see a little
4 quantitative analysis of that to support it,
5 because for me it is a bit of a leap of faith
6 to automatically assume that your outdoor
7 treatment is going to be bounding for your
8 indoor.

9 MR. THURBER: This is Bill
10 Thurber.

11 Correct me if I am wrong, David,
12 but, as I understand the data in the TBD, the
13 indoor uranium concentration, if you will, the
14 airborne concentration would have been about
15 40 dpm per cubic meter, which is the number
16 from Christifano & Harris based on digesting
17 uranium concentrates.

18 And the number that you used for
19 the outdoor airborne exposure, as I understand
20 it, was about 800 dpm per cubic meter. So,
21 there is a difference of a factor of 40
22 between the indoor and the outdoor air

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 concentration.

2 MR. ALLEN: It is actually much
3 bigger than that. The 40 is the combination
4 of outdoor and indoor, based on the
5 timeframes.

6 MR. THURBER: But it is also the
7 indoor. I am looking on page 10 of the TBD.

8 Oh, I'm sorry. But that is not
9 adjusted for -- it would be much smaller than
10 that when it is adjusted for the uranium
11 concentration.

12 DR. MAURO: Oh, this is the
13 dolomite. So, it is what, 1 percent or
14 something --

15 MR. THURBER: yes, right.

16 DR. MAURO: Oh, I got you. Okay.

17 MR. ALLEN: Yes, the real number
18 is, like you mentioned, 806. The other number
19 is like around 3 dpm per cubic meter --

20 MR. THURBER: Yes, it is around 3,
21 not 40, because you have got to adjust that
22 downward for the fact that it is only 2

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 percent uranium in the enriched slag at
2 Hooker, if you will.

3 MR. ALLEN: Yes. So, it is a
4 factor of 270 difference between indoor and
5 outdoor.

6 DR. MAURO: Okay. So, is there
7 agreement that the airborne concentration is
8 about a 270-fold difference? Is that what you
9 are saying? I just want to understand
10 conceptually.

11 MR. THURBER: Yes.

12 DR. MAURO: You have to help me
13 out a little bit here.

14 MR. THURBER: Yes.

15 DR. MAURO: You guys are way out
16 in front of me. So, indoor the airborne dust
17 loading, you know, dpm per cubic meter of
18 alpha indoors is lower?

19 MR. THURBER: Yes, it is lower by
20 a factor of nearly 300.

21 DR. MAURO: Three hundred? Okay.
22 Now, given that, then, okay, so you are

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 starting off with a very low number. And that
2 is the stuff that is going to settle out on
3 surfaces, if the operations is over, right? I
4 mean, because, in other words, now the stuff
5 is on surfaces?

6 MR. THURBER: Yes.

7 DR. MAURO: It is the residual
8 period. And that surface level, at least at
9 time zero, is going to be 300 times lower
10 indoors than it is outdoors?

11 MR. THURBER: That is what these
12 numbers say, yes.

13 DR. MAURO: Okay. Good. Now the
14 next step -- I will actually try to work the
15 problem I had right now as we are talking.
16 So, now the resuspension factor there, one
17 would argue, is 300 times lower, but it is
18 going to be resuspending easily at a factor of
19 10 to 100 times higher, if it wasn't cleaned
20 up. In other words, if you just got that now.

21 So, your starting point, so you've
22 sort of -- now it is a push.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. THURBER: It's a push.

2 DR. MAURO: It's a push. So, now
3 really they are equivalent. So, it is going
4 to go down. All right, I'm with you.

5 Now you go down at 1 percent a
6 day. Everything is squared off. So, in other
7 words, what you are really saying is the
8 indoors is going to be just about the same as
9 the outdoors as a function of time? I mean, I
10 am just doing this in my head as we are
11 working through it.

12 MR. THURBER: Yes.

13 DR. MAURO: Because of the
14 difference in the concentration, you have
15 offset the difference in the resuspension
16 factor. Now this clearly is probably not all
17 explained in the report, but what I am hearing
18 is it makes sense.

19 Oh, you are not following it? I'm
20 sorry.

21 MR. THURBER: No, I follow you,
22 John.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealgross.com

1 DR. NETON: This is Jim. I still
2 think -- do we have the 1 percent per day
3 applied to -- we do not? -- the indoors?

4 MR. ALLEN: No. That is the next
5 finding.

6 DR. NETON: Okay.

7 DR. MAURO: Well, you see, that
8 might be okay if effectively you are treating
9 the problem, you're effectively behaving as if
10 you have got a 10 to the minus 4 resuspension
11 factor.

12 I'm not sure. I'm sorry. That
13 was the idea for the blackboard chart.

14 But, in other words, right now,
15 your whole approach is seated in the outdoor.

16 MR. ALLEN: Right.

17 DR. MAURO: With the argument made
18 that the outdoor is going to be bounding, or
19 at least appropriate, as applied to indoor. I
20 am trying to make it okay with me.

21 MR. ALLEN: Yes.

22 DR. MAURO: And I am struggling

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 with it a little bit.

2 MR. BARTON: I might be mixing up
3 sites here, but was Hooker one of the ones
4 that was cleaned up after the operational
5 period?

6 MR. ALLEN: No.

7 MR. BARTON: No? Okay.

8 DR. NETON: But, see, John, there
9 still remains to be a discussion on TBD-70
10 about this 1 times 10 to the minus 6. And we
11 are preparing an approach or maybe a way to
12 deal with this 1 times 10 to the minus 6 issue
13 in TBD-70 or TIB-70.

14 So, this might not be the place to
15 have this discussion.

16 DR. MAURO: A good point. A good
17 point. Let's put this on the --

18 CHAIRMAN ANDERSON: Or should this
19 go to Procedures?

20 DR. NETON: Well, it is part of
21 the generic complex-wide issue with this 1
22 times 10 to the minus 6. I mean, Dave was

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 trying to say, well, you can really put this
2 to bed now. But it sounds to me like there is
3 enough generic issues.

4 CHAIRMAN ANDERSON: It is a
5 generic issue.

6 DR. MAURO: Yes. And I was trying
7 to do the same thing on the fly.

8 DR. NETON: Yes, you don't want to
9 do that.

10 DR. MAURO: We shouldn't rush
11 this.

12 DR. NETON: No.

13 DR. MAURO: We shouldn't rush it.

14 MR. KATZ: So, just for
15 clarification, though, we are not putting this
16 to bed as a generic issue?

17 DR. NETON: No, no.

18 MR. KATZ: That needs to be dealt
19 with in Procedures. But it sounds like in
20 this case you still don't really have a
21 concern because of the overestimating using
22 the external starting point.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: We were trying to make
2 the case that the 1 to the minus 6 would
3 apply, even with what SC&A is saying that we
4 don't necessarily agree with. However, it
5 doesn't sound like we are going to reach any
6 agreement.

7 MR. KATZ: No, I understand that,
8 but --

9 MR. ALLEN: This was an attempt to
10 put it to bed for Hooker only.

11 MR. KATZ: Right.

12 MR. ALLEN: And it doesn't look
13 like it worked.

14 (Laughter.)

15 DR. MAURO: You've got it right.
16 That's exactly what I was just trying to do.

17 DR. NETON: I'm not comfortable
18 saying, okay, well, maybe it is 10 to the
19 minus 4 indoors and --

20 MR. KATZ: So, I know you are not
21 agreeing to that. All I am trying to
22 understand here is it sounded like, from what

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 John and Bill were saying, given that you have
2 this two orders of magnitude difference in the
3 starting point, even if -- you are not
4 agreeing to SC&A's approach to maybe being 10
5 to the minus 4 might be appropriate, but in
6 any even, it is bounded using this approach,
7 because you are starting with two orders of
8 magnitude higher as your base point --

9 DR. NETON: Yes.

10 MR. KATZ: -- for the internal.

11 DR. NETON: Right.

12 MR. KATZ: In other words, two
13 orders of magnitude greater --

14 DR. NETON: But, at some point,
15 this 1-percent-per-day clearance is going to
16 come up, and that is a TBD-70 issue as well.

17 MR. THURBER: This is Bill
18 Thurber.

19 David, help me with -- the TBD
20 does not assume 1-percent-per-day decline
21 during the residual period, does it?

22 MR. ALLEN: No, it does not.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. NETON: Then, maybe we are
2 okay.

3 MR. THURBER: It assumes that it
4 remains constant during the residual period, I
5 believe, is that correct?

6 DR. NETON: You mean the indoor
7 portions?

8 MR. ALLEN: Yes.

9 DR. MAURO: So, in effect --

10 DR. NETON: Then, we're good.

11 DR. MAURO: Oh, yes. Good. So,
12 even though we don't agree on OTIB-70 in this
13 particular case, the way in which you have
14 treated the problem sounds like it is fine.

15 DR. NETON: Yes, it is bounding.
16 We agree it is bounding. The 1 times 10 to
17 the minus 6 is outdoor constant, is a bounding
18 value, I think is what we just said. Yes, it
19 would bound the indoor.

20 MR. ALLEN: Right.

21 DR. MAURO: And that is because of
22 the difference in the reality that the indoor

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 starting point is much lower?

2 DR. NETON: Right.

3 DR. MAURO: That's it. We don't
4 need to talk about --

5 DR. NETON: Right.

6 DR. MAURO: I thought you were
7 using a 1-percent-per-day indoor also, but if
8 you are not, and you are holding it constant,
9 I think that is right. We could put this one
10 to bed.

11 CHAIRMAN ANDERSON: Yes. I mean,
12 to me, and this is really an ER issue, is,
13 yes, it is bounding, but is it realistic? I
14 mean --

15 MR. ALLEN: It is a very trivial
16 dose.

17 CHAIRMAN ANDERSON: Yes. Well, I
18 mean, that is why I am -- but, you know, these
19 begin to kind of compound, potentially. But,
20 I mean, the dose can't be measured, really.

21 MR. KATZ: I think when the dose
22 is trivial, you don't really have to worry

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 about the --

2 CHAIRMAN ANDERSON: Yes, yes.
3 Okay. So, we are good to go on this, I would
4 say, for Hooker.

5 DR. NETON: Yes.

6 DR. MAURO: And we agree.

7 CHAIRMAN ANDERSON: Okay.

8 MR. ALLEN: Finding 9 was the 1-
9 percent-per-day completion rate, and we didn't
10 use it in the original one. So, really, I
11 never did quite understand the difference
12 between the two in the review. We don't use
13 it in this current one. We just discussed it,
14 and it sounds like that made it okay. So, I
15 guess that closes 9, too.

16 CHAIRMAN ANDERSON: Yes.

17 Okay, 10.

18 MR. ALLEN: Ten was a math error
19 that we discussed in Finding No. 4. That is
20 done differently now. So, that error goes
21 away.

22 CHAIRMAN ANDERSON: So, it looks

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 to me like we have closed everything out with
2 the exception of the broader issue of 8 to
3 Procedures Group.

4 MR. KATZ: Yes, the generic issue
5 is for Procedures.

6 CHAIRMAN ANDERSON: Yes, right.
7 That isn't going to come up at this Committee
8 again.

9 MR. KATZ: Right. They have it
10 already. They already have that.

11 CHAIRMAN ANDERSON: Okay. Great.
12 Fine. So, we are clear.

13 We basically have closed out the
14 Site Profile issues. So, a fresh, clean Site
15 Profile will now come out.

16 MR. ALLEN: Yes, it will be a
17 revision to the --

18 CHAIRMAN ANDERSON: Yes.

19 MR. ALLEN: Fix a couple of
20 errors, yet again.

21 CHAIRMAN ANDERSON: Yes. Okay.
22 So, shall we go on?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. KATZ: A 10-minute break?

2 CHAIRMAN ANDERSON: Do you want to
3 take a break? Okay. Sure, we can take a 10-
4 minute break.

5 MR. KATZ: So, a 10-minute comfort
6 break for everyone on the line, too.

7 Thanks.

8 (Whereupon, the above-entitled
9 matter went off the record at 10:19 a.m. and
10 resumed at 10:30 a.m.)

11 MR. KATZ: So, we are reconvening
12 after a short break.

13 This is the TBD-6001 Work Group,
14 and we're off again.

15 CHAIRMAN ANDERSON: And we're off
16 again. So, now we are on to the SEC review?

17 MR. KATZ: Yes.

18 CHAIRMAN ANDERSON: Who wants
19 to --

20 MR. BARTON: Bill Thurber, are you
21 on the line?

22 MR. ALLEN: I think we came back a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 little early. No, maybe not.

2 MR. KATZ: Bill Thurber, are you
3 on the line yet?

4 MR. THURBER: I am muted again.

5 MR. KATZ: And you're very quiet
6 when you're muted.

7 (Laughter.)

8 MR. THURBER: I'm not clear what
9 the question is.

10 MR. BARTON: Bill, we wanted to
11 start going over your SEC ER review and go
12 through those findings. So, we can discuss
13 them in, I guess, much the same way we just
14 handled the Site Profile.

15 MR. THURBER: For Hooker?

16 CHAIRMAN ANDERSON: Hooker, right.

17 MR. THURBER: But we have had no
18 findings, no SEC findings on Hooker.

19 MR. ALLEN: You had an SEC -- hang
20 on a second. Let me get the right word for
21 it. A focused review, Hooker Electrochemical
22 Petition Evaluation Report.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. THURBER: Oh, I'm sorry.

2 CHAIRMAN ANDERSON: Because we
3 have a response to it.

4 MR. BARTON: It was a January
5 document, Bill.

6 MR. KATZ: Right, right.

7 MR. THURBER: Let me --

8 MR. BARTON: Well, I can start
9 summarizing this, and, Bill, you can jump in.

10 MR. THURBER: I'm sorry. Okay.
11 Excuse me. Yes.

12 Well, go ahead, Bob.

13 MR. BARTON: Okay. Sure. All
14 right.

15 Well, these are not numbered using
16 a number system. We used A, B, C --

17 MR. THURBER: Right.

18 MR. BARTON: -- just to kind of
19 try to avoid confusion between these things.

20 So, Finding A had to do with what
21 percentage of uranium was contained in the
22 slag at Hooker. And I believe this one was

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 based on a report, and this is where they talk
2 about how it came in at that certain percent
3 and, then, it was enriched to, I guess, 1 or 2
4 percent during the process that was at Hooker,
5 or at least -- anyway, that is still your
6 response there. But I think that is
7 essentially what that finding is.

8 Do we want to summarize all these
9 and then turn it over to you guys or should we
10 go issue by issue?

11 CHAIRMAN ANDERSON: Let's just go
12 issue by issue.

13 MR. THURBER: I'm sorry. I can
14 pick up on this, Bob. I just had the wrong
15 document open.

16 Finding A is basically the same
17 as, I believe, Finding 1, basically, the same
18 as Finding 1 with regard to the Appendix AA,
19 the same basic question.

20 MR. BARTON: Well, it is a little
21 bit different, Bill, because Finding 1 was
22 about the total input, the tonnage, I guess

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 you would say, and the dumping of barrels
2 based on that. Finding A, it seems to me, is
3 more about the percentage of uranium --

4 MR. THURBER: Well, but the
5 commonality is that if the slag contains .2
6 percent U, then that is consistent with
7 processing one day per month, given the
8 available input data from the documentation.

9 MR. BARTON: I see.

10 MR. THURBER: They become the
11 same, even though superficially they look
12 different.

13 MR. ALLEN: So, are we going to
14 say that one is already closed then or do we
15 want to talk?

16 MR. THURBER: Well, I am satisfied
17 that that is closed.

18 MR. ALLEN: I'm satisfied it is
19 closed, but that doesn't mean anything.

20 DR. MAURO: This is John. Me, too.

21 MR. BARTON: Well, what you
22 actually did is you went all the way up to 2

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 percent, right, not even the 1 percent that we
2 know in the findings it's 2 percent at the end
3 of the process, essentially?

4 MR. ALLEN: Yes, which makes
5 sense. And that wasn't done in the original
6 Appendix. Now it covers the .2 percent as
7 slag and the 2 percent as concentrate.

8 MR. BARTON: And the 2 percent is
9 what is used for the filtration activities?

10 MR. ALLEN: Yes, it is.

11 CHAIRMAN ANDERSON: And how did
12 you get to the 2 percent?

13 MR. ALLEN: The original document
14 we were looking at, the description said 500-
15 pound barrels, and it was concentrated from
16 one pound to five to ten pounds. One pound in
17 500 was the .2 percent.

18 CHAIRMAN ANDERSON: Oh, okay.

19 MR. ALLEN: And, then, you use the
20 10 pounds in 500 for about 2 percent.

21 CHAIRMAN ANDERSON: Okay.

22 MR. THURBER: So, the chosen

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 approach is conservative, takes the more
2 conservative number to use for the processed
3 slag.

4 CHAIRMAN ANDERSON: Okay.

5 MR. THURBER: Finding B said NIOSH
6 should review its estimate of the monthly slag
7 throughput at Hooker to ensure that all
8 relevant data have been considered.

9 And this, again, ties in with the
10 discussion we have already had on whether the
11 numbers at Hooker were input or output
12 numbers. I am satisfied that NIOSH has indeed
13 reviewed this and added some additional mass
14 balance information which supports their
15 position. And I am satisfied that this
16 finding is resolved.

17 CHAIRMAN ANDERSON: Okay. Okay.
18 Bill Field, do you have any -- this sounds
19 pretty reasonable to me, but --

20 MEMBER FIELD: No, I think it
21 sounds reasonable, too.

22 CHAIRMAN ANDERSON: Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MR. THURBER: We will move on to
2 Finding C then.

3 CHAIRMAN ANDERSON: Yes.

4 MR. THURBER: Finding C: NIOSH
5 should consider revising Appendix AA to base
6 internal exposures on surrogate slag-handling
7 data rather than surrogate data from the
8 TBD-6001 recovery operations.

9 And what this finding tended to
10 point out was that we did not agree with the
11 particular operation from among the many in
12 TBD-6000 which NIOSH chose to use as the
13 surrogate for what went on at Hooker. NIOSH
14 picked the scrap recovery operations from
15 TBD-6001.

16 We felt that, if you are going to
17 use TBD-6001, which was the case at the time,
18 that there were better choices from that
19 document. Because the scrap recovery that was
20 contemplated in TBD-6001 was quite different
21 than processing slag as was actually practiced
22 at Hooker.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 So, I believe that with the new
2 TBD that this approach has been changed. As I
3 understand it -- and, David, correct me --
4 NIOSH has used, instead, actual surrogate
5 slag-handling data from Mallinckrodt and
6 Fernald and selected the 95th percentile of
7 the values that they obtained from those two
8 other sites to use as the basis for the
9 internal exposure.

10 MR. ALLEN: Yes, that is correct.

11 MR. THURBER: And, to me, this
12 seems much improved over the original
13 approach. I feel it is a reasonable approach
14 to take. You obviously have to use surrogate
15 data, and this is a much better choice for
16 surrogate data, in my view.

17 MR. ALLEN: I'm not going to
18 disagree.

19 (Laughter.)

20 CHAIRMAN ANDERSON: I don't have
21 any comment. I don't know enough about it. I
22 mean, it seems to be, if SC&A is comfortable

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 with it, then, technically --

2 MR. THURBER: It is technically
3 superior to what was done before.

4 CHAIRMAN ANDERSON: Yes. And why
5 is that?

6 MR. BARTON: It is more reflective
7 of the actual operations that would have
8 happened and the materials they actually
9 handled at --

10 CHAIRMAN ANDERSON: At Hooker?

11 MR. BARTON: Yes.

12 CHAIRMAN ANDERSON: Rather than
13 the other one was the generic?

14 MR. ALLEN: The other one, we may
15 agree or disagree. I mean, it did involve
16 digestion and acid, et cetera, but the
17 material was certainly a lot different.

18 MR. KATZ: It was scrap metal.

19 CHAIRMAN ANDERSON: Yes, it was
20 scrap metal. Yes. Okay.

21 So, this is what you are using
22 really as surrogate data for the processing of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 slag?

2 MR. ALLEN: For the handling of
3 slag.

4 CHAIRMAN ANDERSON: Yes. Yes.
5 Okay.

6 MR. THURBER: But it is surrogate
7 data related specifically to slag handling --

8 CHAIRMAN ANDERSON: Yes.

9 MR. THURBER: -- but at other
10 sites.

11 CHAIRMAN ANDERSON: Yes.

12 DR. MAURO: Just to throw a fly in
13 the ointment that -- this is John -- in the
14 past, when we reviewed an ER or Site Profile,
15 I know that one of the questions always that
16 in the end has been posed to SC&A is for us to
17 do a formal review against the five Board
18 surrogate data criteria: timeliness, you
19 know, comparability, exclusivity, those sorts
20 of things.

21 Bill, was that part of the work
22 that you did here? I just don't remember.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 They all sort of blend together. We had a
2 section on that?

3 CHAIRMAN ANDERSON: You did. I
4 mean, we got a document from David, a White
5 Paper.

6 So, have you guys reviewed that,
7 SC&A?

8 MR. KATZ: They received it.

9 CHAIRMAN ANDERSON: Yes.

10 MR. BARTON: I don't know if we
11 have been tasked to review that. At the very
12 least, we wanted to look at it --

13 CHAIRMAN ANDERSON: Yes.

14 MR. BARTON: -- in preparation for
15 this meeting.

16 CHAIRMAN ANDERSON: Right.

17 MR. BARTON: But I don't think any
18 formal review has gone on on that.

19 DR. MAURO: As a matter of due
20 process, for the record, I know that in the
21 past whenever surrogate data was an important
22 part of a decision, especially an SEC issue,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 we usually had a special appendix where we
2 walked through each of the points a little
3 more formally and said, yea or nay, whether we
4 felt it met the criteria.

5 If we haven't done that yet, I
6 would suggest that we get that as part of the
7 record.

8 MS. LIN: This is Jenny.

9 You don't mean to say "due
10 process", do you? You meant due diligence?

11 DR. MAURO: Let's say due
12 diligence. I'm sorry.

13 (Laughter.)

14 MR. KATZ: Dave, did your
15 surrogate data piece address all those
16 elements?

17 MR. ALLEN: Yes. We were tasked
18 at the last Work Group meeting.

19 MR. KATZ: Yes, I thought that --

20 MR. ALLEN: It was our evaluation
21 based upon the Board's criteria and that's
22 what I sent, yes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: That's what I
2 was wondering. Right. So, I mean, do we need
3 to task them to review that rather than to go
4 through --

5 MR. KATZ: If they haven't read
6 it, if they haven't read what DCAS has
7 produced, they certainly need --

8 CHAIRMAN ANDERSON: Yes.

9 MR. KATZ: -- to review that, read
10 that analysis.

11 CHAIRMAN ANDERSON: Yes.

12 MR. KATZ: Is that the case, Bill,
13 that you guys haven't read the DCAS document?

14 MR. THURBER: I have glanced at
15 it. I haven't sat down and gone through it
16 thoroughly.

17 MR. KATZ: Okay.

18 MR. THURBER: Again, it is
19 something that we hadn't been tasked to do. I
20 looked at it in preparation for this meeting.
21 It was not a thoroughgoing review.

22 MR. KATZ: Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 CHAIRMAN ANDERSON: They probably
2 need to do that.

3 MR. KATZ: I mean, we can run
4 through it. I mean, Dave can run through --

5 CHAIRMAN ANDERSON: Yes.

6 MR. KATZ: -- the material that is
7 there, so that you can have a sort of oral and
8 resolve any questions you might have upfront.
9 But, certainly, you would need sort of a
10 final word on it.

11 So, you don't need to repeat what,
12 but affirm that --

13 CHAIRMAN ANDERSON: Yes, I don't
14 think they need to start from scratch, but
15 they ought to look at it and offer us an
16 opinion as to do they agree with NIOSH's
17 summary --

18 MR. KATZ: Right.

19 CHAIRMAN ANDERSON: -- rather than
20 developing a new summary, and then we have to
21 try to --

22 MR. KATZ: No, no, no, no. Right.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. THURBER: But, in answer to
2 your question, John, we did not do our own
3 independent analysis at the time of the
4 surrogate data criteria against the ER.

5 DR. MAURO: And I can say right
6 now I know that the surrogate data folks would
7 very much want to make sure that we did look
8 at each of those five issues. And maybe all
9 that will be necessary is to go over those
10 five issues right here with David and listen
11 to the arguments made or -- and that is really
12 up to the Work Group -- whether you would like
13 something in writing from us.

14 MR. KATZ: And so, John, I think
15 Dave will go through them, through the
16 analysis, and you can respond. But, at the
17 end of that, if you determine that you need
18 time to think and analyze, that is fine.

19 CHAIRMAN ANDERSON: Okay.

20 MR. KATZ: And we will await that.

21 CHAIRMAN ANDERSON: I mean, that
22 really is the key for this SEC review.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Exactly.

2 CHAIRMAN ANDERSON: Because there
3 isn't anything.

4 MR. KATZ: You know, if you hear
5 it all and you say, oh, that's all pat, then
6 that's fine, too.

7 DR. MAURO: Okay.

8 MR. KATZ: But you certainly have
9 the opportunity to spend time analyzing it
10 after this meeting.

11 CHAIRMAN ANDERSON: And as the
12 Chair, I would want you to be comfortable --

13 MR. KATZ: Right.

14 CHAIRMAN ANDERSON: -- that you
15 have had enough time to really think about it.

16 DR. MAURO: Good. Okay. I'm glad
17 I brought it up.

18 CHAIRMAN ANDERSON: Should we go
19 through the other findings?

20 MR. THURBER: Finding D? Do you
21 want to keep going?

22 CHAIRMAN ANDERSON: Yes. Why

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 don't we quickly do that?

2 MR. THURBER: All right. Finding
3 D, NIOSH should clarify whether 1.6 millirep
4 per hour for gamma and 11.5 millirep per hour
5 for beta, or values contained in Tables AA.3
6 and AA.4 of Appendix AA, should be used for a
7 bounding calculation.

8 I think that this is probably
9 irrelevant now, given the fact that in the new
10 TBD those numbers that I just quoted, 1.6
11 millirep per hour for gamma and 11.5 millirep
12 per hour for beta, are no longer used. But I
13 think it would be appropriate for NIOSH to
14 comment on this.

15 MR. ALLEN: Well, the Evaluation
16 Report, there was data from various sources
17 put in there just to say there is some data
18 and the doses can be bounded, not necessarily
19 that that is what would be used. That is kind
20 of the purpose of an Evaluation Report, to say
21 that it can be done, not necessarily how it
22 would be done.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 The TBD then puts together how we
2 are going to do it. And like you said, it
3 does not use those numbers.

4 So, I guess that is our
5 clarification.

6 MR. THURBER: Philosophically,
7 and, you know, we have commented on this in
8 the past, when NIOSH says that they can do a
9 bounding calculation, and they say here are
10 four different ways we might be able to do a
11 bounding calculation, we might only agree that
12 one of those is bounding. And therefore, we
13 have suggested from time to time that it is
14 appropriate to be prescriptive in saying how
15 you are going to bound it, so that we can then
16 look at the proposed approach and say, yes, we
17 agree that that is bounding or, no, we don't
18 agree that that is bounding. But I am
19 personally not comfortable when it is left
20 open-ended.

21 MR. ALLEN: Well, I think I have a
22 different interpretation of what an ER is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 supposed to do. But, again, I don't know if
2 that is relevant in this discussion. By
3 issuing the TBD, we have clarified that those
4 are not going to be used.

5 MR. THURBER: In this particular
6 case, that is correct. But, as I say, I
7 wanted to make the philosophical point that,
8 if the position is taken that a bounding
9 calculation can be done, it should be -- the
10 procedure should be described.

11 DR. MAURO: This is John. Maybe I
12 could help a little on the nuance here.

13 This harkens back to what Mark
14 Griffon refers to as a proof of principle.
15 And it emerged that, yes, I fully understand
16 once you have the data and you say, listen, we
17 have plenty of data and we're in a position
18 where we could place a plausible upper bound,
19 and from looking at the data, very often it is
20 self-evident that, yes, it is true. It
21 certainly looks like that.

22 But there is also the concern that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 sometimes the methodologies, in going from the
2 data to actually how we are going to use the
3 data and implement it, and the perfect example
4 was the high-fired plutonium, is sort of like
5 where it all started, where a request was made
6 for proof of principle. Let's see how exactly
7 you are going to do it.

8 And the reason for that was it
9 wasn't straightforward. It wasn't intuitive
10 that, oh, of course, when you have the data,
11 you are going to take the 95th percentile;
12 it's done. There was more to the story, and
13 until you actually went through some cases and
14 demonstrated them, and went through a process.

15 So, the way I see this proof-of-
16 principle concept is there are times when you
17 have data and information which on the surface
18 certainly appears to be you have sufficient
19 data to do what needs to be done. It
20 certainly is helpful to us to see exactly what
21 you are going to do, rather than for us to
22 imagine that, yes, it looks like they

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 certainly can do it, but it will be nice to
2 see it.

3 So, I mean, the proof-of-principle
4 idea is still before us on how far we go in
5 order to make the case, yes, you can do it. I
6 guess a judgment call by each Work Group on
7 whether you would like to see an example where
8 you walk through how the work is going to be
9 done.

10 MR. ALLEN: Okay. I am not sure
11 where we are on that now.

12 DR. MAURO: Yes, all I am doing is
13 some perspective on judgments that need to be
14 made, whether you really need to lay it out
15 because it is not self-evident that you can do
16 it, and how you are going to do it, in cases
17 where, no, I think we can close the issue
18 because it is self-evident that, yes, you can
19 do it, and we know how you are going to do it.

20 MR. THURBER: In this particular
21 case, it has become irrelevant because the
22 approach has been changed. But I wanted to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 make the point that proof of principle is
2 often appropriate because several people, as
3 John suggested, could take the same data and
4 come up with several different alternative
5 ways to arrive at what the course is.

6 But, in this case, I think that,
7 because of what has changed with the TBD, that
8 this is not relevant any longer.

9 CHAIRMAN ANDERSON: It seems to me
10 that in going through the Board's criteria for
11 use of surrogate data, that is where this
12 would come into play, where you would need to
13 describe in that exactly how you are going to
14 do it, and why that bounding is appropriate.
15 Is that a place to --

16 MR. KATZ: Well, it is not even
17 specific to surrogate data, this proof of
18 principle.

19 CHAIRMAN ANDERSON: Okay.

20 MR. KATZ: But this is fine. We
21 have here a different, we have a TBD that is
22 specific and lays it out --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Yes.

2 MR. KATZ: -- and there is no
3 ambiguity about --

4 CHAIRMAN ANDERSON: Yes.

5 MR. KATZ: -- the feasibility of
6 the approach.

7 CHAIRMAN ANDERSON: Yes.

8 MR. ALLEN: I think we are all
9 talking the same thing.

10 MR. KATZ: Yes, this is put to bed
11 in this case.

12 CHAIRMAN ANDERSON: Yes. Well,
13 that's what I thought.

14 MR. KATZ: There is a broader
15 conversation going on --

16 CHAIRMAN ANDERSON: Yes, yes.
17 Okay.

18 MR. KATZ: -- but it is put to bed
19 here.

20 CHAIRMAN ANDERSON: Right.

21 MR. THURBER: Are we ready to move
22 on, then? Consider it put to bed for this

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 specific situation?

2 CHAIRMAN ANDERSON: Yes. Yes.

3 MR. THURBER: Okay. Finding E,
4 the PER should recognize that slag was present
5 during the residual period, at least through
6 1958, and ensure that this information is
7 incorporated into a bounding external exposure
8 calculation for the residual period.

9 The basis for this was some
10 additional documentation that we found in the
11 archives after we had prepared our review of
12 Appendix AA, which suggested that there was
13 slag still on the Hooker property after the
14 operating period had been concluded. So, that
15 was the basis for this.

16 Now I know that David has looked
17 into this and prepared a response. So, I will
18 turn it over to him.

19 MR. ALLEN: Okay. I did prepare
20 that, that was the other document I sent. And
21 it was Finding F under there.

22 And, basically, this has been a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 little bit of a point of confusion for several
2 people, as well as DOL and a few others.

3 Hooker Electrochemical was the
4 primary operator for Lake Ontario Ordnance
5 Works from -- I don't know if I have got the
6 dates handy here.

7 MR. BARTON: '53 to '58.

8 MR. ALLEN: '53 to '58. The Hooker
9 site proper did this mag fluoride digestion in
10 '44, '45, and '46. But these are two very
11 separate sites --

12 CHAIRMAN ANDERSON: Physically.

13 MR. ALLEN: -- physically.

14 CHAIRMAN ANDERSON: Yes. Okay.
15 That's what I thought.

16 MR. ALLEN: So, the problem was
17 the AEC often referred to Lake Ontario Works
18 as the Hooker site because that was the only
19 Hooker site that they cared about in the
20 fifties.

21 CHAIRMAN ANDERSON: Because Hooker
22 owned it -- or managed it.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: And they were done
2 with processing that Hooker data at their site
3 by then. So, it got a little bit of
4 confusion. It is usually ambiguous.

5 But I went through the documents
6 that they had listed. It lists a number of
7 chemical compounds of uranium, not just mag
8 fluoride.

9 There are other Lake Ontario
10 Ordnance Works documentation that lists those
11 same contaminants or those same piles, I guess
12 you would say, or waste products at that site.

13 And the one letter referenced also
14 indicated that the material was shipped to
15 Y-12.

16 CHAIRMAN ANDERSON: Yes.

17 MR. ALLEN: And I got another
18 document saying that the magnesium fluoride at
19 Lake Ontario Ordnance Works was shipped to
20 Y-12 in the late fifties. It all seems to
21 link up that the references in question are
22 talking about Lake Ontario Ordnance Group.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 There is no smoking gun in any of this, but it
2 all seems to point to Lake Ontario Ordnance
3 Works as the site where this material was.

4 MR. BARTON: I am just looking at
5 your last quote here. Would you say that
6 really that first sentence is kind of what
7 does it because it talks about the site
8 starting back up briefly in the '48-to-1949
9 period? Could that be covered under the
10 operational period?

11 Because in just reading some of
12 these quotes, it really kind of seems like it
13 could go either way. I mean, you have some --

14 MR. ALLEN: Some of them could.
15 There's no smoking gun. Like I said, you have
16 got to put all the documents together.

17 Which quote are you --

18 MR. BARTON: It is the last one
19 you have there. It says, "The MED constructed
20 uranium reduction in casting plant operated by
21 ElectroMet in Niagara Falls, resumed
22 operations for a brief period in 1948 to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 1949."

2 MR. ALLEN: Okay. Yes, that's
3 ElectroMet.

4 MR. KATZ: It's all mixed up.
5 (Laughter.)

6 MR. ALLEN: It is all interrelated
7 because that is where the mag fluoride came
8 from, that Hooker dealt with. But, in this
9 case, in '48-'49, it was sent to Lake Ontario
10 Ordnance Works, is my take on this whole
11 thing.

12 MR. BARTON: But it doesn't really
13 indicate, though, does it?

14 MR. ALLEN: Well, it does say
15 casting operations "were piled on the ground
16 adjacent to the fire reservoir in the water
17 treatment plant," which is where other
18 documents say it was located at Lake Ontario
19 Ordnance Works.

20 MR. THURBER: Can you specifically
21 identify the -- what was it? -- those two
22 sites you just mentioned at Lake Ontario?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. ALLEN: The fire reservoir and
2 the water treatment plant? Yes.

3 MR. THURBER: Yes. You can
4 specifically identify those facilities at Lake
5 Ontario?

6 MR. ALLEN: I believe so. I
7 didn't put it in here. And, honestly, I would
8 have to refresh my memory, but I believe, yes,
9 I have seen those before and seen them
10 mentioned in other documents.

11 And, in fact, I take it back.
12 This quote is from a Lake Ontario, I think, a
13 Lake Ontario document, isn't it?

14 MR. THURBER: Well, that was the
15 unknown 1971 document? I don't happen to have
16 that open, Dave, but I've got it.

17 MR. BARTON: It does indicate and
18 reference that it was from Lake Ontario.

19 MR. THURBER: Oh, okay.

20 MR. ALLEN: Yes. Yes, this is a
21 Lake Ontario document.

22 MR. THURBER: All right. Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MR. BARTON: I guess the question,
2 then, is, I mean, those two sites were fairly
3 similar. Is there any chance both of them had
4 slag --

5 MR. ALLEN: Well, I think it comes
6 down to there is no indication there was
7 anything at Hooker after 1946.

8 MR. BARTON: Just sort of the
9 ambiguous wording of the first couple of
10 quotes in that?

11 MR. ALLEN: Yes. The only
12 indication is this one memo, and the
13 information I put here seems to be pointing
14 that they are actually talking about Lake
15 Ontario Ordnance Works.

16 CHAIRMAN ANDERSON: Is that
17 treated as a separate site then?

18 MR. ALLEN: Yes, that's definitely
19 a -- it is one of our sites --

20 CHAIRMAN ANDERSON: You will have
21 a separate Site Profile?

22 MR. ALLEN: Yes. Oh, yes. Oh,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 yes, it is one of our sites.

2 CHAIRMAN ANDERSON: Okay. Yes.

3 MR. ALLEN: For a lot more than
4 mag fluorides.

5 (Laughter.)

6 CHAIRMAN ANDERSON: Yes. Well, I
7 mean, it sounds like a waste storage facility.

8 MR. ALLEN: Yes. That's exactly
9 what it is, yes.

10 CHAIRMAN ANDERSON: So, as far as
11 the work on Hooker, what you are saying is
12 those references, that implied that --

13 MR. ALLEN: Yes. Everything we
14 know about Hooker was that the mag fluoride
15 came in. The oversized stuff was redrummed
16 and shipped out. The concentrate was shipped
17 out. There is no reason to believe there was
18 anything left over.

19 CHAIRMAN ANDERSON: Yes. Okay.
20 All you have is residual?

21 MR. ALLEN: Yes.

22 CHAIRMAN ANDERSON: But now no

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 residual due to piles remaining?

2 MR. ALLEN: Right.

3 CHAIRMAN ANDERSON: Okay.

4 MR. BARTON: Well, I think Bill
5 Thurber brings up a really good point in that,
6 if we could actually identify this fire
7 reservoir in the water treatment plant as
8 being an area of the Lake Ontario site, I
9 mean --

10 MR. ALLEN: Well, again, that is
11 the 1971 document, which is an inventory of
12 Lake Ontario Ordnance Works.

13 And my point was just that the
14 letter you referenced saying there might be
15 something left over to Hooker had an inventory
16 of stuff that is similar to the inventory in
17 that letter.

18 MR. THURBER: Oh, the Superior
19 letter did have an inventory attached to it,
20 David?

21 MR. ALLEN: Yes, there was one in
22 there. It lists K-65 material, L-30, L-50,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 R-10, R-10 iron cake, et cetera.

2 MR. THURBER: Okay.

3 MR. KATZ: Are you good, Andy?

4 CHAIRMAN ANDERSON: Yes, I am good
5 with that.

6 MR. BARTON: It doesn't explicitly
7 say it, at least I can't see it, but does that
8 1957 Superior letter in its inventory list
9 obviously list the slag? Because it says the
10 1971 document definitely lists slag in its
11 inventory, but it doesn't quite say --

12 MR. ALLEN: I think that is one of
13 the L's, but let me call it up. It has been a
14 little while since I have looked at it.
15 Hopefully, I have got it here.

16 And I don't think I have it handy.

17 DR. NETON: Have you got an SRDB
18 number?

19 MR. ALLEN: Yes, I have that.

20 DR. NETON: I can find it. I'm
21 online here.

22 MR. ALLEN: I have got 6341.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. NETON: That is an early one.

2 MR. ALLEN: I thought I put that
3 on my drive here, but, apparently, I didn't.

4 Well, do we want to --

5 MR. KATZ: Do you want carry on
6 while Jim searches the SRDB?

7 MR. ALLEN: Do you want to just
8 come back to this issue or what do you want to
9 do here?

10 DR. NETON: I will have it here in
11 two seconds.

12 MR. KATZ: Oh, okay.

13 DR. NETON: Just give me a couple
14 of seconds.

15 All right, it's more than two
16 seconds.

17 MR. KATZ: I was going to say,
18 nothing's that fast with the SRDB.

19 (Laughter.)

20 CHAIRMAN ANDERSON: No, unless he
21 has got a faster connection than I do.

22 Removal of waste at Haist

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 property? Is that the one you are talking
2 about?

3 MR. ALLEN: That might be it.

4 CHAIRMAN ANDERSON: Low-grade
5 residue stored at Niagara Falls, New York.
6 Yes, that's it.

7 MR. ALLEN: Low-grade uranium
8 residues stored in Niagara Falls site, New
9 York.

10 CHAIRMAN ANDERSON: Yes. Yes,
11 that's it. Okay.

12 I've got it right here, Dave, if
13 you want to look at it.

14 MR. ALLEN: There should be a list
15 on one of those pages. It is really odd. How
16 many pages is this thing?

17 Oh, there you went by it.

18 Okay, we have got it here, and it
19 has got one list of -- I think your question
20 was whether or not the C2 slag was there?

21 CHAIRMAN ANDERSON: Yes.

22 MR. ALLEN: Go down. There is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 another.

2 DR. NETON: Eighteen thousand
3 kilograms of C slag.

4 MR. ALLEN: Yes, it's the top of
5 page 2.

6 DR. NETON: I mean, clearly, this
7 is not, I mean when they start talking about
8 the African ore, I mean that is the K-65
9 material that went to Fernald from Lake
10 Ontario Ordnance Works.

11 MR. KATZ: Okay.

12 CHAIRMAN ANDERSON: Okay. Yes.

13 MR. KATZ: Closed.

14 CHAIRMAN ANDERSON: We've got it.

15 MR. KATZ: Was that Finding E or
16 F?

17 MR. ALLEN: That was --

18 MR. KATZ: You said it was F,
19 David? You said it as F, David, but I thought
20 --

21 MR. ALLEN: I think that was F.

22 MR. BARTON: I think we might have

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 skipped E.

2 MR. KATZ: Oh, okay. All right.

3 MR. THURBER: Okay. We are on the
4 resuspension factor then.

5 DR. NETON: What finding?

6 MR. ALLEN: I think you might have
7 skipped Finding E, Bill.

8 MR. THURBER: Which is? Tell me
9 what.

10 MR. ALLEN: I just got my notices.
11 SLAPS data, bounding.

12 MR. BARTON: This was the St.
13 Louis Airport measurements.

14 MR. THURBER: Oh, yes. Yes.

15 MR. ALLEN: It is very related to,
16 well, the answer is very related to Finding D.

17 MR. THURBER: Yes.

18 MR. ALLEN: It is pretty much the
19 same story. We didn't use that data. We used
20 an MCNP run. But I think it goes about the
21 same way as Finding D.

22 MR. THURBER: Right. Right, I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 agree.

2 The next one is, depending on
3 employment history, use of a resuspension
4 factor of 1E-6 per meter for the residual
5 period may not be bounding when calculating
6 inhalation doses. If NIOSH believes that this
7 resuspension factor is appropriate, they
8 should provide justification describing, for
9 example, cleanup practices conducted after the
10 cessation of operations.

11 Again, we discussed this at some
12 length in the context of the TBD, and NIOSH
13 described the fact that the primary dust, the
14 inhalation, the primary source of inhalation
15 exposure was outdoors and that, given that,
16 the 1E-6 number looked to be reasonable.

17 I don't know whether NIOSH wants
18 to comment further on that.

19 MR. ALLEN: I think we closed this
20 one. It was part of the TBD review. It is
21 pretty much the same issue as, was it 8 and 9?

22 CHAIRMAN ANDERSON: Yes, or 4 and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 10.

2 MR. ALLEN: It was 8 and 9 on the
3 TBD review.

4 CHAIRMAN ANDERSON: Yes.

5 MR. KATZ: Yes, it closed.

6 MR. ALLEN: Next?

7 MR. THURBER: Everyone is
8 satisfied on that?

9 CHAIRMAN ANDERSON: Yes.

10 MR. THURBER: Okay. The final
11 point was Observation A. NIOSH should explain
12 why they accepted the petitioner's assumptions
13 regarding the duration of the operating period
14 since we are not aware of any evidence to
15 support the extended operating period.

16 And I believe that David prepared
17 a response on this which he provided to
18 everyone a week or two ago, whenever.

19 David?

20 MR. ALLEN: Yes, it was the same
21 White Paper as that Finding F we were just
22 discussing. And it gets to be a confusing

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 issue. But the official contract period that
2 we used in the ER was the official operating
3 period that DOE uses right now or is
4 designated.

5 The period where they actually
6 operated with contaminated mag fluoride was a
7 fraction of that. It started later; it ended
8 earlier.

9 So, our estimate is based on when
10 they had mag fluoride there, and, then, after
11 that we have a residual contamination
12 estimate.

13 And DOE's operating period seems
14 to be related to their chemical contracts,
15 which are irrelevant as far as the dose
16 reconstruction. We are going to try to get
17 DOE to change their dates, but, either way,
18 unless some new information comes up, it seems
19 like our dose estimate will work, even if they
20 change those dates. So, we haven't pushed it
21 very hard. But that's why there is some
22 confusion on that.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. BARTON: Just as a sort of
2 global question, of course, if an SEC was
3 granted, you could have people being awarded
4 who never even worked there when the
5 radioactive material was there.

6 MR. ALLEN: Well, there's nothing
7 preventing SECs in the residual period, too.
8 It has actually happened.

9 CHAIRMAN ANDERSON: Although the
10 residual in this particular case --

11 MR. ALLEN: Does that answer that
12 one?

13 CHAIRMAN ANDERSON: Yes, I think
14 so.

15 So, have you asked them to change
16 it?

17 MR. ALLEN: I have not.

18 CHAIRMAN ANDERSON: Or are we
19 waiting?

20 MR. ALLEN: I haven't, but, in all
21 honesty, I suppose we should send a letter.

22 CHAIRMAN ANDERSON: Well, I mean,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 other than the review of the surrogate, I
2 think we have pretty well closed out the
3 issues here. So, I would think we would be
4 near a recommendation. And if what we are
5 reviewing is a period that is longer because
6 that is what the --

7 DR. NETON: Well, no, it really
8 doesn't have any practical bearing on what we
9 are doing --

10 MR. ALLEN: Right.

11 DR. NETON: -- because as Dave
12 indicated in their letter, prior to the date
13 where we know material is there, we are just
14 assigning zero dose.

15 MR. ALLEN: Right.

16 CHAIRMAN ANDERSON: Oh, okay. I
17 got you.

18 DR. NETON: And we are finding
19 zero.

20 CHAIRMAN ANDERSON: Yes.

21 DR. NETON: Regarding the SEC
22 issue, I mean, if someone wanted to grant an

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 SEC, you could craft the dates to where you
2 thought the exposures were anyway.

3 CHAIRMAN ANDERSON: Yes.

4 DR. NETON: So, you wouldn't have
5 to grant it the entire period.

6 MR. KATZ: You couldn't grant it
7 when there is no exposure. So, you couldn't
8 even add a Class for when there was no
9 radioactive material there. But there would
10 be no Probability of Causation.

11 DR. NETON: So, I think, you know,
12 like Dave said, really, on a practical basis,
13 it doesn't really make any difference for us
14 right now.

15 CHAIRMAN ANDERSON: It doesn't
16 matter? Okay. But we need to be sure that,
17 then -- I don't know, didn't we have public on
18 the phone, but that petitioners understand.
19 So, we will have to cover it at the meeting.

20 MR. ALLEN: And we have tried to
21 discuss that in the TBD, and probably poorly.

22 CHAIRMAN ANDERSON: Yes. Got you.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Okay.

2 So, do we have any other issues?

3 (No response.)

4 So, what we have left is a
5 discussion of the surrogate data evaluation?
6 Do we want to do that? Yes, let's start with
7 that.

8 MR. ALLEN: Okay. I tried to
9 prepare -- I guess this is me?

10 CHAIRMAN ANDERSON: Yes. Yes,
11 well, it's your name. Your name is the only
12 one on the document.

13 (Laughter.)

14 MR. ALLEN: I tried to prepare an
15 evaluation based on the Board's surrogate data
16 criteria. I sent it off April 7th, I think it
17 was.

18 MR. KATZ: Right.

19 MR. ALLEN: I don't know a lot to
20 say about this because I don't necessarily
21 understand the criteria the best. But the
22 first criteria says hierarchy of data. I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 believe that is talking about use some
2 personal data first and, then, coworker, then
3 area monitors, a hierarchy. Since we have no
4 data, no radiological monitoring data, from
5 Hooker, it is kind of a moot point. I am not
6 sure what else that was looking at.

7 What I did do is look at the
8 hierarchy of data we had at other sites where
9 we used surrogate. We had Mallinckrodt, we
10 had Fernald, and we had ElectroMet.

11 There is some bioassay data for
12 those sites, but those sites dealt with a lot
13 of different types of uranium, almost all of
14 which, or probably all of which had a much
15 higher concentration of uranium.

16 It is very unlikely that the
17 uranium content in the urine of those workers
18 was associated with mag fluoride. So, we
19 didn't really consider that a reasonable
20 surrogate.

21 Which, then, takes me down to the
22 area monitoring for mag fluoride handling,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 which is what we used. That was --

2 CHAIRMAN ANDERSON: So, have we
3 done any truly similar site in ore processing?

4 I mean the ones you described are a bit more
5 complex than most were.

6 MR. ALLEN: I am not sure what you
7 are asking. I'm sorry.

8 MR. BARTON: That might be covered
9 under the third one, where you discuss the
10 same processes and the similarities between
11 them.

12 CHAIRMAN ANDERSON: Okay. Okay.
13 Fine. Go ahead.

14 MR. BARTON: And that kind of goes
15 with what you were saying. You know, if these
16 guys are working with different materials that
17 are going to give them different doses, you
18 want to use their bioassay data over area
19 monitoring, but you really can't because they
20 are not similar. It is not relevant.

21 DR. MAURO: Is that explained in
22 your criteria 1 hierarchy data, that you did

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 look into using bioassay, but you had to
2 reject it, for the reasons you explained? So,
3 you had to go to a lower tier, namely, air-
4 sampling data, but uniquely associated with
5 the mag fluoride operations? I mean that
6 would be the way in which the story is told.

7 MR. ALLEN: Yes, and that is what
8 that is in there. Just a couple of sentences
9 is all it took.

10 DR. NETON: Yes, I mean I could
11 read one of the sentences. "The individual
12 monitoring data at those sites would be driven
13 by exposure to high concentrations of uranium
14 compounds, not necessarily representative of
15 work with mag fluoride." And he is talking
16 about the bioassay data.

17 DR. MAURO: And that is it. There
18 is a rationale to it. That was the intent of,
19 by the way, the hierarchy, was to say, when
20 you are going to go to surrogate data, if you
21 could use surrogate data at the highest level
22 of the hierarchy, great, but if you can't and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 you have to resort to a lower tier, you give
2 the rationale. And you did exactly what
3 should be done.

4 MR. ALLEN: Okay. The next
5 criteria is exclusivity constraint. And I am
6 trying to refresh my memory on what this is.

7 DR. MAURO: Yes, I can help out a
8 little with context.

9 The exclusivity means that, when
10 that was prepared and surrogate data was being
11 entertained, the idea was that sometimes you
12 would supplement site-specific data with data
13 from other sites. But sometimes you did not
14 have the luxury to do that. It was sort of a
15 thought processing.

16 And so, if you have to resort to
17 exclusively using other site data, well, then
18 we are going to hold you to a little bit
19 higher standard. And that was the thinking
20 behind the term "exclusivity".

21 So, it is within that context
22 where perhaps you go the extra yard in terms

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 of making sure that your other data, you know,
2 takes into consideration, listen, all your
3 eggs are in one basket now. You don't have
4 the luxury to draw upon on any site-specific
5 data to help prop up your situation.

6 MR. ALLEN: Okay.

7 MR. KATZ: That is a nice summary,
8 John. Thanks.

9 MR. ALLEN: Yes, and that is
10 essentially what this says, is that we have no
11 data. It is kind of a moot point. There is
12 no data at Hooker.

13 Moving on to No. 3, site or
14 process similarities, the majority of the
15 airborne at Hooker for the estimate is based
16 on handling of mag fluoride.

17 CHAIRMAN ANDERSON: It's
18 exclusively, isn't it?

19 MR. ALLEN: Yes. Yes, you're
20 right.

21 CHAIRMAN ANDERSON: Yes, I mean --

22 MR. ALLEN: Well, I was going to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 say the handling is the majority.

2 CHAIRMAN ANDERSON: Yes.

3 MR. ALLEN: The dumping of the
4 drums, digestion, et cetera --

5 CHAIRMAN ANDERSON: Okay. I see.

6 Okay. Yes.

7 MR. ALLEN: I don't think there is
8 anybody else that digested mag fluoride, or at
9 least I didn't find it. But, as far as
10 handling dumping of drums, there is nothing
11 real site-specific or anything. There's no
12 special equipment other than conveyors.

13 We had area data from other places
14 where they were shoveling, dumping, et cetera,
15 for mag fluoride. So, that process seemed to
16 be fairly similar, is essentially what I am
17 trying to say here.

18 As far as the filter operations,
19 that is also a fairly standard thing. Doing
20 that with mag fluoride concentrate is not so
21 standard.

22 We used a Christifano and Harris

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 analysis of ore digestion and used the filter
2 operations out of that, which is filter it
3 after concentrating uranium products. We
4 settled on one that is a fairly well-known
5 concentration of processed uranium. So, there
6 is not a lot of radium, thorium, et cetera,
7 other stuff in there. And, then, we adjusted
8 that concentration. Either way, it is a wet
9 or at least damp process. The airborne is
10 fairly low compared to the drum dumping. So,
11 we think that is satisfactory for surrogate
12 data for that operation.

13 Temporal considerations is No. 4.

14 MR. KATZ: Before we go on --

15 MR. ALLEN: Sorry.

16 MR. KATZ: Oh, I guess this is all
17 under process similarities? I'm sorry.

18 I was just going to say, I mean,
19 if SC&A had any thoughts about that? Or
20 questions?

21 MR. BARTON: Not from my end.

22 MR. ALLEN: Okay. Moving on to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 the temporal considerations, the data we used
2 came from Mallinckrodt, ElectroMet, and
3 Fernald. It was all collected between 1947
4 and 1959. The operation at Hooker was 1944
5 through 1946.

6 Looking at the 1947-through-1959
7 surrogate data, the highest samples of the set
8 were collected in 1958 at Fernald. The next
9 highest were 1947 and 1949 at ElectroMet. And
10 everything else fell in between.

11 This, again, is handling of the
12 mag fluoride. It is not really specific to a
13 site. So, it is not really specific to a
14 timeframe, either.

15 And looking at the data, the
16 highest is towards the end of that timeframe.

17 The next highest is towards the beginning.
18 It doesn't seem to have any temporal
19 dependence on it.

20 And it is relatively contemporary
21 with the 1945-46 timeframe. So, we think it
22 is satisfactory as far as that goes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: So they,
2 geographically, weatherwise, and the dumping
3 and --

4 MR. ALLEN: Well, ElectroMet is
5 located in Niagara Falls.

6 CHAIRMAN ANDERSON: Yes. I mean I
7 think they are --

8 MR. ALLEN: So, that is very
9 close.

10 CHAIRMAN ANDERSON: -- sort of in
11 the same. Fernald --

12 MR. ALLEN: Fernald is this area
13 here.

14 CHAIRMAN ANDERSON: Yes.

15 MR. ALLEN: It gets plenty wet.

16 (Laughter.)

17 CHAIRMAN ANDERSON: Yes. Well, so
18 the operation --

19 DR. MAURO: You bring up a good
20 point, indoor/outdoor. When these surrogate
21 data criteria developed and the temporal issue
22 came up, it was more toward the idea that, if

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 you have a process that you are doing in the
2 1950s that you have no data for, and it is
3 indoors, and, then, you have another process
4 that is very similar, where you are doing the
5 same kind of thing, but it is in the 1980s,
6 well, you have got yourself a temporal
7 problem. A temporal problem comes in because
8 of substantial improvements that were made
9 from the fifties to the eighties, especially
10 in these types of activities, and engineered
11 ventilation controls/practices, health physics
12 practice, et cetera, et cetera. So, that is
13 where this business of the time period comes
14 in.

15 But now you have brought up an
16 interesting perspective; namely, in this
17 particular case, I think we are dealing with
18 outdoors. And we really never discussed that.

19 That is, you are outdoors now creating
20 aerosols. There is reason to believe that you
21 are doing the same kind of thing, and I like
22 the point. You say, well, they were doing the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 same kind of thing and they were doing it
2 outdoors, and they were doing it at the same
3 time. You know, an argument could be made,
4 well, that's pretty good.

5 You know, you are geographically
6 the same. You are in the same time period,
7 and you are doing the same kinds of things.
8 So, this is a consideration that we really
9 never engaged before. But a good point about,
10 you know, now that we are outdoors, you would
11 like to be in the same general time period and
12 the weather is more or less alike. But I
13 don't know. It is just a new twist.

14 MR. ALLEN: Well, I mean some of
15 that data was actually, at least a little bit
16 of it was outdoors, and some of it was
17 indoors, as far as the surrogate data goes.

18 And my impression of what it comes
19 down to is the concentration of uranium in the
20 mag fluoride was so low, nobody put any
21 controls on it.

22 DR. MAURO: Yes. Yes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: And I think that is
2 probably more than anything else what makes it
3 contemporary with the Hooker data.

4 DR. MAURO: Yes. Okay.

5 CHAIRMAN ANDERSON: So, the
6 sample, the surrogate data from Fernald and
7 ElectroMet, do we know, I mean, what time of
8 the year they were doing that? I mean the
9 description at this facility was that dumping
10 could be really dusty, and that the wet
11 processing indoors was, you know, we have
12 agreed that that would have been quite
13 different.

14 It is kind of, how representative
15 are these samples of what would have gone on
16 and, when they did the sampling, were they
17 under high-exposure circumstances? You know,
18 was the dust visible at the Fernald,
19 ElectroMet sampling? Do we know?

20 MR. ALLEN: I don't think I have
21 anything that will tell me yes or no on that.

22 CHAIRMAN ANDERSON: Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: Well, we do know some
2 of it was indoors; some of it was outdoors.

3 CHAIRMAN ANDERSON: So, some of
4 the dumping was actually --

5 MR. ALLEN: Yes. At least some of
6 it was outdoors. Most, I think, of the
7 surrogate data was indoors. I am not positive
8 about that.

9 But the Hooker operation went --

10 CHAIRMAN ANDERSON: Was always
11 outdoors?

12 MR. ALLEN: About 18 -- the
13 dumping was always outdoors, but it was 15 or
14 18 months or so.

15 CHAIRMAN ANDERSON: Yes.

16 MR. ALLEN: Eighteen is what we
17 have estimated for the whole duration. So,
18 that is the whole gamut of the type of weather
19 you would --

20 CHAIRMAN ANDERSON: Yes. Yes.
21 Well, it was more the representativeness of
22 the surrogate data, that you are saying, you

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 know, the highest samples were in 1958. Do we
2 know the conditions when they did the
3 sampling?

4 So, you have come up with your 95
5 percent.

6 MR. ALLEN: I wouldn't say the --
7 I mean, we know the operation. The operation
8 is like shoveling mag fluoride into a drum or
9 dumping from a drum type of description on the
10 air samples. Some of them say respirator worn
11 or no respirator worn.

12 CHAIRMAN ANDERSON: Yes.

13 MR. ALLEN: Not all of them.

14 What else do we know about it?

15 MR. THURBER: David, isn't it true
16 -- this is Bill Thurber -- isn't it true that
17 most of the samples were breathing zone
18 samples? They weren't general area samples?

19 MR. ALLEN: I am thinking you are
20 right, Bill, but I can't say that for sure
21 right now. I don't recall.

22 CHAIRMAN ANDERSON: I guess, just

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 as we move this forward, to defend the overall
2 Committee, in the past, on surrogate data it
3 has been raised, well, are these samples
4 comparable to the -- you know, the good news
5 here is the process is similar. The question
6 would be, are the conditions under which the
7 surrogate sampling was done, do they really
8 bound the samples or the processes at Hooker?

9 We have the description at Hooker
10 that it could be very dusty, which we don't
11 know if that was the description at the sites
12 that we are using. Because if there is a lot
13 of visible dust, that could be quite different
14 than when somebody is sampling and you are
15 going to shovel a whole lot different.

16 MR. ALLEN: I guess the best I can
17 tell you is, for the type of concentrations we
18 saw in these air samples --

19 CHAIRMAN ANDERSON: I mean the
20 concentrations were so low to start with --

21 MR. ALLEN: Well, I mean the
22 concentration got up there some in these air

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 samples. And if it was with a low-
2 concentration material, then, yes, it was a
3 very dusty operation.

4 CHAIRMAN ANDERSON: Okay.

5 DR. MAURO: Is there a milligrams
6 of dust per liter of air-type numbers that go
7 along with all of this? The reason I ask is
8 that there is an awful lot of knowledge out
9 there of what is a dusty environment and what
10 milligrams per cubic meter, not per liter. Is
11 that part of your, I guess, suite of
12 information that is available to you either at
13 the site or at the surrogate site?

14 MR. ALLEN: I haven't seen that,
15 no.

16 DR. MAURO: Okay.

17 MR. ALLEN: I have seen the
18 activity airborne measurements.

19 DR. NETON: But it can be
20 calculated if you know the concentration of --

21 DR. MAURO: Yes. Right. Yes, I
22 was just thinking that, also. Once you get

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 your gross alpha --

2 CHAIRMAN ANDERSON: If you assume
3 that they were within compliance of the --

4 (Simultaneous speaking.)

5 DR. MAURO: Right.

6 CHAIRMAN ANDERSON: Yes, I would
7 suspect not.

8 DR. MAURO: No, no. Jim was
9 starting to say something. If you have a
10 default outdoor gross alpha per cubic meter as
11 your default dust loading, and knowing the
12 activity concentration, in theory, you could
13 back out what that would be in milligrams per
14 cubic meter.

15 They have so much data out there
16 on dusty work environments of all sorts like
17 this. You know, if you are talking about dust
18 loadings that, in theory, you are assuming are
19 on the order of many milligrams per cubic
20 meter outdoors, well, that is very dusty, and
21 especially if you are assuming it is chronic.
22 You know, you are dealing with, you know,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 there is no doubt that that places an upper
2 bound, especially outdoors. Indoors, you
3 know, that would be, as a rule of thumb, your
4 up there in 1 to 5 milligrams per cubic meter
5 protracted outdoors. That is a very high
6 protracted dust loading.

7 You can get short periods of time
8 where it is much higher than that, but over an
9 extended period of time that would be a
10 bounding number. That would be one way in
11 which I would sort of get my sense for whether
12 or not we are in the right place.

13 MR. ALLEN: Well, the number we
14 ended up using from the surrogate data, the
15 95th percentile, was 800 dpm per cubic meter.

16 And if you assumed .2 percent uranium, it is
17 a choking environment, no doubt.

18 DR. MAURO: Yes, I suspected as
19 much.

20 MR. ALLEN: I don't have the
21 number calculated, and I don't have it handy,
22 but it is big.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. MAURO: Yes.

2 CHAIRMAN ANDERSON: I mean that
3 kind of, then, the downside to that is the
4 plausibility becomes --

5 MR. ALLEN: Right.

6 DR. MAURO: That is always a
7 problem. It is that window, you are trying to
8 find out --

9 CHAIRMAN ANDERSON: Well, I mean
10 the dose is relatively low regardless, but the
11 attempt to bound the maximum gets you into
12 implausibly high --

13 DR. MAURO: Yes.

14 MR. ALLEN: That is the next --

15 CHAIRMAN ANDERSON: Yes. I think
16 we have beat this pretty good.

17 MR. ALLEN: And the plausibility,
18 it comes down to these are actual measurements
19 of mag fluoride, and it is in an activity.
20 So, you are looking at, some of these are 700
21 and 800 dpm per cubic meter measured values.

22 DR. MAURO: Are those the measured

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 values that were taken indoors?

2 MR. THURBER: Not necessarily, no.

3 DR. MAURO: Oh, not necessarily?

4 Okay.

5 MR. THURBER: No. Matter of fact,
6 they are in David's document here. Just a
7 minute.

8 MR. BARTON: I don't know if there
9 is enough data out there, but it might be
10 instructive to maybe compare the surrogate
11 data that was taken outdoors versus those
12 taken indoors.

13 MR. ALLEN: Well, that is what I
14 was just trying to look at. And I am on the
15 ER right now looking at page 20, and I am on
16 Fernald data. It has got one, top of the
17 page, 1958, was high and low due to wind
18 change, parentheses, that this was an outdoor
19 operation. And that is 659, 519 and 262 dpm
20 per cubic meter.

21 DR. MAURO: Anybody do a quick
22 conversion for me, just to get that into

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 milligrams per cubic meter?

2 MR. ALLEN: While somebody is
3 doing that, I was just going to point out the
4 next one is the second floor drum dumper. So,
5 I am assuming that is indoors. And that is
6 793, 829 and 425.

7 So, they are in the same general
8 range. I mean there is less than a factor of
9 two type of difference between those two
10 activities.

11 CHAIRMAN ANDERSON: Yes, yes, and
12 they are all personal samples, right?

13 MR. ALLEN: And those are BZs,
14 yes.

15 DR. MAURO: Oh, those are BZs?
16 Okay.

17 MR. ALLEN: Yes.

18 CHAIRMAN ANDERSON: Because
19 outdoors, if you are dumping the dilution, it
20 wouldn't impact it where an area would --

21 DR. NETON: In the sense that they
22 are BZ samples, indoors or outdoors, it is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 really low, and, then, it is a generation
2 issue.

3 CHAIRMAN ANDERSON: Right.
4 Exactly.

5 DR. NETON: It is not a room
6 dilution --

7 DR. MAURO: Yes, yes.

8 MR. ALLEN: Yes. So, we are
9 talking some big numbers indoors, some big
10 numbers outdoors. Some samples are fairly
11 high; some are fairly low. And I am not sure
12 what the rhyme or reason is between them,
13 other than just the operation that was
14 actually done with these things.

15 MR. THURBER: It looks, you know,
16 just eyeballing the Fernald data, it looks
17 like the outdoor numbers are lower than the
18 indoor numbers, looking at page 9 of your TBD.

19 MR. ALLEN: Well, that doesn't say
20 indoor or outdoor. I have got to bounce back
21 to the PER.

22 MR. THURBER: No. No, it does.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 It does.

2 MR. ALLEN: Most of them don't say
3 indoors. There are four of them that say they
4 are outdoors.

5 MR. THURBER: Yes. The higher
6 ones are indoors, and the lower ones are
7 outdoors. I didn't do an average or anything.

8 MR. ALLEN: Yes, I understand.

9 MR. THURBER: But the four samples
10 labeled outdoors go from 32 to 110, and the
11 other ones go as high as 829 dpm per meter
12 cubed.

13 DR. NETON: But Dave just read one
14 that was outdoors that was in the 200s.

15 MR. ALLEN: Yes, that is just what
16 I was going to point out. If you look at the
17 ER, there's a lot of samples, and I did not
18 use all those samples. There were some of
19 those that looked to me like it was cleaning
20 out an empty gondola car, railcar. And I
21 wasn't sure that was really indicative of a
22 large pile rather than just cleaning up the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 remains in a railroad car.

2 There were others that were --

3 CHAIRMAN ANDERSON: Were those
4 lower or higher?

5 MR. ALLEN: I don't think higher.
6 Mostly lower.

7 CHAIRMAN ANDERSON: I mean,
8 because if you got that much and you were
9 sweeping with a broom in a railcar, it would
10 be pretty --

11 MR. ALLEN: But not all of them
12 were.

13 CHAIRMAN ANDERSON: Yes.

14 MR. ALLEN: I think, if you added
15 them all up, you end up dropping the number
16 some.

17 CHAIRMAN ANDERSON: Yes. Okay.

18 MR. ALLEN: So, I excluded those.
19 Then, there was chipping and grinding in some
20 of these. I am not convinced that is really
21 representative of dumping.

22 CHAIRMAN ANDERSON: No.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: As it is, I actually
2 put those in there, added it up, and, then,
3 excluded them. You get very close to the same
4 number. Excluding them, actually, I think
5 raised the number just slightly, if I
6 remember, I mean within a few dpm per cubic
7 meter.

8 MR. BARTON: The grinding
9 operations were actually less dusty.

10 MR. ALLEN: It might have been.
11 Some of them were high; some of them were low.
12 The one I quoted here a little bit ago
13 outdoors --

14 CHAIRMAN ANDERSON: Is it a fairly
15 fine particulate?

16 MR. ALLEN: Well, it's created --

17 CHAIRMAN ANDERSON: I mean I have
18 never seen a pile. So, this is just for my
19 edification here.

20 MR. ALLEN: When it is created in
21 the reduction process, it tends to be like
22 hard rocks.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Yes.

2 MR. ALLEN: But it is hard enough
3 to where it can be pulverized and crumbled up
4 pretty easily.

5 CHAIRMAN ANDERSON: Okay.

6 MR. ALLEN: Or I don't know about
7 easy, but it gets pulverized, crumbled up to
8 something very fine, fairly fine.

9 CHAIRMAN ANDERSON: Because this
10 sounds like a lot of dust.

11 MR. ALLEN: Yes.

12 CHAIRMAN ANDERSON: So, that is
13 why you would think there would be -- is it
14 all respirable? I mean, you are assuming it
15 is 100 percent respirable.

16 DR. NETON: Yes, there is no
17 correction for that.

18 MR. ALLEN: Yes.

19 CHAIRMAN ANDERSON: Okay.

20 DR. NETON: No, the ICRP doesn't
21 have a correction for that, either.

22 CHAIRMAN ANDERSON: Yes. No, no.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 MR. ALLEN: But, I mean, just
2 looking at the mix, the grinding, the
3 chipping, even the gondola car, and the
4 dumping and stuff, all seems to be in the same
5 ballpark, and it is just essentially agitating
6 a lot of mag fluoride dust with no controls,
7 indoor or outdoor.

8 CHAIRMAN ANDERSON: Yes.

9 MR. ALLEN: I mean it seems to be
10 all semi-consistent. There's some lower
11 numbers, some higher numbers. And that is why
12 we used the 95th in the TBD, to account for
13 all the possibilities there.

14 And I am not sure where we are at
15 now.

16 Anyway, my plausibility argument
17 was essentially that these are numbers that we
18 have seen working with this material. Just
19 essentially mechanically agitating it is what
20 it amounts to when you are dumping, shoveling,
21 et cetera.

22 DR. MAURO: Yes, the arguable

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 plausibility was the plausible circumstances
2 and the very fact that you have circumstances
3 which are comparable. Obviously, by
4 definition, they are plausible circumstances.

5 MR. ALLEN: Yes, and that is
6 essentially all I put in the surrogate data
7 justification there.

8 And that was the last criteria,
9 this one.

10 CHAIRMAN ANDERSON: Now in your
11 little writeup here you said ElectroMet values
12 were averages?

13 MR. ALLEN: They were. All I had
14 was --

15 CHAIRMAN ANDERSON: What we were
16 just talking about really was the Fernald
17 measurements, right?

18 MR. ALLEN: Yes.

19 CHAIRMAN ANDERSON: Which were
20 individual samples?

21 MR. ALLEN: In the TBD, we
22 actually used, the surrogate data we used came

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 from these ElectroMet samples as well as some
2 from Mallinckrodt and some from Fernald. So,
3 we used all three, put them all together, and
4 came up with the 95th percentile.

5 CHAIRMAN ANDERSON: Okay.

6 MR. ALLEN: So, these were used.
7 Or not these solely used, not exclusively
8 used.

9 CHAIRMAN ANDERSON: Yes.

10 MR. ALLEN: But these two numbers
11 were averages of some unknown number of
12 samples. So, that is the type of airborne
13 activity you got from this slag handling,
14 barreling, weighing. And it is only a factor
15 of two below this 95th that we ended up using.

16 CHAIRMAN ANDERSON: So, the range,
17 I mean was pretty tight.

18 MR. ALLEN: Yes.

19 CHAIRMAN ANDERSON: So, it must
20 have been near saturation.

21 MR. ALLEN: They had to be high,
22 yes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 CHAIRMAN ANDERSON: For the cloud
2 of exposure.

3 And the only other question I
4 would have is, if you have such a high
5 concentration of dust, you overload you
6 filters. I mean, how are they measuring it?
7 How are they collecting the sample? So, I
8 mean, is this really your pump quits because
9 you can't stop the dust --

10 DR. NETON: These are BZ samples,
11 but in that era, if I remember, they are
12 really high-volume air samples positioned
13 near, as close as possible to the workers
14 breathing them.

15 CHAIRMAN ANDERSON: But it was
16 breathing zone? Yes.

17 DR. NETON: Yes.

18 CHAIRMAN ANDERSON: With a high-
19 vol set?

20 DR. NETON: Right. Yes.

21 CHAIRMAN ANDERSON: Okay.

22 DR. NETON: It would only be like,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 what I call a short, like 20-minute sample.

2 CHAIRMAN ANDERSON: Yes, it would
3 have to be --

4 DR. NETON: They would hold it as
5 close as possible to the workers' breathing
6 zone while they were working --

7 CHAIRMAN ANDERSON: Okay.

8 DR. NETON: -- and take sort of a
9 snapshot as opposed to like we do today, the
10 integrated measurement over the whole shift.

11 CHAIRMAN ANDERSON: Yes. Yes.
12 Okay.

13 MR. ALLEN: And I was thinking I
14 had those, but I don't.

15 Well, that was all I had on the
16 surrogate data. I am not sure where that --

17 MR. KATZ: So, I think John and
18 Bill and Bob need to think about just what
19 sort of degree of further analysis they may
20 want to do on these issues of surrogate data.

21 DR. MAURO: I would suggest that
22 we do write something up, given the importance

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 of the subject, rather than just say, oh, it
2 sounds good. You know, we could maybe take a
3 look at it. I don't think it would take very
4 much time or very much cost, but I think it
5 would be wise for us to get something in
6 writing on the record, that we looked at
7 David's writeup and explored these matters, as
8 we have done on all the others.

9 CHAIRMAN ANDERSON: Okay.

10 MR. KATZ: That sounds good.

11 CHAIRMAN ANDERSON: I mean, just
12 for me, Dave, you went through how you
13 eliminated or you didn't include some and you
14 did. I think a more robust, written
15 description of how you did that will help when
16 we get --

17 DR. NETON: A more independent
18 review maybe.

19 CHAIRMAN ANDERSON: Yes. Or a
20 description, so that that will avoid the kind
21 of questions that I raised when we go over to
22 the full Board. Because this really is the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 key to this.

2 MR. KATZ: Okay. So, we are
3 saying, Dave, you might just add a little bit
4 more text.

5 CHAIRMAN ANDERSON: Well, I mean
6 we may tell SC&A, but I guess how you used,
7 how you came to the surrogate data, and if
8 somebody goes back to the core documents, they
9 are going to say, well, your writeup here
10 isn't consistent with it because you took out
11 some and you didn't take out.

12 So, let's just be very -- I think
13 you did it right. I mean I am supportive of
14 what you did, but we need a document for
15 others that are going to look at it, because
16 this is the document we are going to send to
17 the --

18 MR. ALLEN: You are talking about
19 a review of what I did in the TBD, which is
20 something for SC&A? It is not a go-to for me?

21 CHAIRMAN ANDERSON: Yes. Yes.

22 MR. ALLEN: Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. BARTON: And just to be clear,
2 you don't want us to reinvent the wheel here?

3 CHAIRMAN ANDERSON: No, no. No,
4 no.

5 MR. BARTON: Just a careful eye on
6 this report?

7 CHAIRMAN ANDERSON: I am expecting
8 you will probably have similar -- you know,
9 you need to make this --

10 MR. BARTON: Flesh it out in
11 certain places?

12 CHAIRMAN ANDERSON: Flesh it out
13 in certain places. But I just don't want us
14 to prolong this operation by we have another
15 meeting, and, then, we talk about that, and,
16 then, you have to -- I would like to have
17 whatever you are going to write up, have SC&A
18 comfortable with a revision.

19 MR. KATZ: So, if SC&A is going to
20 review this, maybe you could write a memo or
21 something to elaborate on whatever, on your
22 process.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Otherwise, we are going to have an
2 SC&A review saying you need to do X, Y, and Z,
3 which you have already addressed in this
4 meeting. And, then, Dave is going to do that.

5 And, then, SC&A is going --

6 DR. NETON: Well, it is pretty
7 clear in Dave's writeup about what samples he
8 used. I mean they are listed there.

9 MR. KATZ: So, what is it we want
10 from Dave at this point, the kind of thing to
11 elaborate?

12 MR. ALLEN: Well, I tell you what.
13 Like I said, it is in the TBD, what I used.
14 I can send my spreadsheet that I analyzed the
15 data on, along with a couple of other --

16 CHAIRMAN ANDERSON: I mean, it may
17 be in here, but what I was looking at is this
18 review of the surrogate data is really what
19 the Board is going to want to look at. And
20 so, to say, well, go back to the TBD -- I
21 think you can pull out, you may just want to
22 do a copy and replace.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Copy and paste.

2 CHAIRMAN ANDERSON: Copy and
3 paste, yes.

4 I don't remember what's here, but
5 if you have it there, that's great, then.

6 MR. ALLEN: I am honestly not sure
7 what's happening. I'm sorry.

8 DR. NETON: I think maybe reissue
9 your surrogate analysis with a better --

10 CHAIRMAN ANDERSON: Yes.

11 DR. NETON: -- description of what
12 samples were used.

13 MR. ALLEN: Okay. What was
14 excluded and what was --

15 DR. NETON: I think actually what
16 you used, which is in the TBD. Just cut that
17 table and stick it right in there and say,
18 "Here's what was used."

19 And, then, when SC&A reviews it,
20 they can look at it and say, "Well, you used
21 these samples, but we noticed that there were
22 these other ones," and we think it is or is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 not appropriate how you treated them.

2 MR. ALLEN: Okay. So, if I am
3 getting this right, you want me to revise the
4 surrogate data evaluation I did to put more
5 detail into the air sample data that was used.

6 MR. KATZ: Yes.

7 MR. ALLEN: I will include the
8 table out of the TBD, what was used. I will
9 point out the stuff in the ER that was
10 excluded and why.

11 CHAIRMAN ANDERSON: Specifically,
12 that would be --

13 MR. ALLEN: And I will add another
14 column in here for --

15 CHAIRMAN ANDERSON: -- in No. 5.

16 MR. ALLEN: -- indoor/outdoor.

17 CHAIRMAN ANDERSON: Yes.

18 MR. KATZ: Right.

19 CHAIRMAN ANDERSON: It is in the
20 plausibility.

21 MR. KATZ: Right. So, then, there
22 will just be one-stop shopping for SC&A.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: And, then, that is
2 what you guys will review.

3 MR. KATZ: And that is what they
4 will review. That way, we won't have an
5 iterative process here.

6 CHAIRMAN ANDERSON: Okay?

7 MR. KATZ: Yes. That sounds good.
8 Okay.

9 CHAIRMAN ANDERSON: Any other
10 issues with Hooker?

11 MR. KATZ: I think that is most
12 all of them.

13 CHAIRMAN ANDERSON: Yes. That
14 really is about it, yes. Good. We are making
15 great headway here. All right, that's what I
16 want.

17 And you will do this by?

18 MR. ALLEN: This I can --

19 MR. BARTON: Tomorrow.

20 (Laughter.)

21 MR. ALLEN: I think I can do this
22 pretty quickly. So, hopefully, this week it

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 will be I will email it out.

2 MR. KATZ: That would be great.

3 That would be great.

4 CHAIRMAN ANDERSON: We are not
5 going to get it by the 24th.

6 MR. KATZ: Oh, no, but it is all
7 right because they are going to give an update
8 at this Board meeting anyway.

9 CHAIRMAN ANDERSON: Yes, yes, yes.

10 MR. KATZ: It wouldn't be time to
11 report out --

12 CHAIRMAN ANDERSON: No.

13 MR. KATZ: -- for an action at
14 this Board meeting --

15 CHAIRMAN ANDERSON: No.

16 MR. KATZ: -- because it is not on
17 our agenda for that anyway.

18 CHAIRMAN ANDERSON: Yes. Okay.

19 MR. KATZ: So, we would be aiming
20 for August --

21 CHAIRMAN ANDERSON: Yes.

22 MR. KATZ: -- to report out.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: That's fine.

2 DR. NETON: But you could say we
3 are close.

4 CHAIRMAN ANDERSON: Yes, that is
5 really what I want to do.

6 MR. KATZ: You can give a good
7 update.

8 CHAIRMAN ANDERSON: Yes. Okay.

9 Bill, do you have any comments,
10 Bill Field?

11 MEMBER FIELD: No, I am fine. I
12 think what has been discussed is very
13 reasonable.

14 CHAIRMAN ANDERSON: Okay. So, do
15 we want to break for lunch?

16 DR. NETON: Sam just stepped out
17 of the room for a second. He is ElectroMet.

18 CHAIRMAN ANDERSON: Yes.

19 MR. KATZ: Should we just go ahead
20 and break now?

21 Do you have a sense from Sam how
22 much material we have?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. ALLEN: I have no idea.

2 DR. NETON: He has got a lot of
3 new stuff.

4 MR. KATZ: Oh, okay. There is a
5 lot of --

6 DR. NETON: I believe he has got
7 new stuff. But I think a lot of these issues
8 go away, but I don't know how fast we will get
9 through them.

10 MR. KATZ: Okay. Yes, we wouldn't
11 want to break if he just had 20 minutes' worth
12 of material.

13 DR. NETON: I can't really say. I
14 mean I don't know how long it is going to take
15 to go over the stuff.

16 CHAIRMAN ANDERSON: Do we take
17 questions?

18 MR. KATZ: Oh, we can talk about
19 the name of the Work Group.

20 (Laughter.)

21 There is no longer a TBD-6001, and
22 this Work Group is entitled TBD 6001 Work

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Group. So, we had, I think, resolved on our
2 own, if this works for you, too, Bill, to call
3 this from here forward the Uranium Refining
4 AWE Work Group, so that we are generically
5 describing what we are about and not using a
6 TBD that doesn't exist and might confuse
7 people.

8 Is that good with you, Bill?

9 MEMBER FIELD: I like it.

10 (Laughter.)

11 CHAIRMAN ANDERSON: Of course, now
12 all of the web storage facility sites are
13 going to have to be renamed where all the
14 documents are stored. Okay. We will do it.

15 MR. ALLEN: Change the title.

16 CHAIRMAN ANDERSON: Yes. Okay.
17 What's the name again?

18 MR. KATZ: Okay. We are Uranium
19 Refining AWE Work Group.

20 DR. MAURO: You know what else I
21 find? I just had a thought that came to me.
22 I noticed that whenever we talk TBD-6001, I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 immediately have to go online and go look at
2 what are the attachments, you know, United
3 Nuclear, Hooker. Because there are a lot of
4 uranium refining AWE facilities that are not
5 originally part of TBD 6001.

6 So, all I am doing is alerting
7 everyone that the terminology that is used is
8 certainly fine, but I suspect that there are a
9 lot of other AWE facilities that don't fall
10 within the purview of this Work Group.

11 MR. KATZ: Well, is there a better
12 descriptor, John?

13 DR. MAURO: Other than putting the
14 names of the five -- I think there are five
15 sites that fall under, originally were under
16 the TBD 6001 Work Group. There were specific
17 sites.

18 MR. KATZ: Right.

19 DR. MAURO: And we have been
20 talking about a couple of them. All I can say
21 is that, the degree to which we could capture
22 that, it would make for a long name. But I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 don't know. I am just bringing the thought
2 up.

3 CHAIRMAN ANDERSON: I don't like
4 the GBP Work Group.

5 DR. MAURO: Well, see, the GBP I'm
6 okay with because I remember the three.

7 CHAIRMAN ANDERSON: Yes. Right.

8 DR. MAURO: And they are the only
9 three that we are working with. There are no
10 other GBPs.

11 MR. KATZ: That one actually goes
12 by their names formally.

13 CHAIRMAN ANDERSON: Yes. Right.

14 DR. MAURO: I don't know.
15 Whatever you folks are comfortable with, we're
16 fine.

17 MR. KATZ: Okay. Well, let's just
18 run with this and call up those other
19 confusions when they come.

20 DR. NETON: I did speak with Sam
21 about how much, and he thought maybe an hour
22 and a half or so.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Okay. So, then, it
2 seems like it makes sense, if he is busy, we
3 can break now.

4 The only other thing, United
5 Nuclear, maybe give an update.

6 MR. ALLEN: That will be, well, I
7 think the agenda was mostly for SC&A to -- let
8 me find it.

9 MR. KATZ: Yes, it was to sort of
10 recap the status of things because it has been
11 quite a while, and we just don't want to lose
12 track of where we are. That would be a
13 foundation for you to say what is coming.

14 MR. ALLEN: Yes.

15 MR. KATZ: What sort of time do we
16 need for that?

17 MR. ALLEN: Not much.

18 MR. KATZ: How much time do you
19 need --

20 MR. ALLEN: Not much on our end.
21 I don't know --

22 MR. KATZ: How about SC&A, to just

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 sort of recap United Nuclear, where we are at
2 this point with the Work Group?

3 MR. THURBER: Well, I can run
4 through the new points in the matrix, which I
5 gave you an updated version of, in 15 minutes
6 probably, 20 minutes.

7 MR. KATZ: So, do you want to
8 knock that off before lunch? It is up to you
9 all.

10 CHAIRMAN ANDERSON: That's fine
11 with me. My flight is at 5:00. So, I just
12 need to get out of here by 3:30-4:00-ish, I
13 guess.

14 MR. KATZ: Are you fine, Bill
15 Field, with knocking that off now before lunch
16 break?

17 MEMBER FIELD: Oh, I am fine with
18 anything you want. I have some other meetings
19 this afternoon. But if I have a reason not to
20 go, that would be cool, too.

21 (Laughter.)

22 MR. KATZ: Okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Okay, let's do
2 it.

3 MR. KATZ: Go ahead.

4 MR. THURBER: Okay. If everybody
5 turns to the United Nuclear Appendix D matrix
6 in the memo I sent you all last week, we can
7 go through it.

8 A number of these things are
9 closed. So that, we can cover those pretty
10 swiftly.

11 Okay. Finding 1, current guidance
12 for assigning occupational medical doses
13 insufficiently prescribed. At the previous
14 meeting, the issue was closed because it was
15 determined that these measurements were made
16 offsite.

17 MR. KATZ: Right.

18 MR. THURBER: Finding 2, current
19 default doses for external whole-body and skin
20 doses are based exclusively on summary
21 statements of 1960 AEC inspection report and
22 may be inappropriate.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 And we reviewed the additional
2 data that had been provided since the initial
3 finding and determined that, basically, the
4 issue was closed, but there was a proviso --
5 well, we determined it wasn't an SEC issue.
6 And let's see, I don't remember what the
7 proviso was.

8 MR. ALLEN: I think it is in the
9 second-to-the-last column there, Bill. It is
10 basically a better description of --

11 MR. THURBER: Oh, yes, there is a
12 need for better documentation. That was the
13 proviso that was left on the table when we
14 determined or when the Work Group determined
15 that the issue was closed last time. Okay?

16 Finding 3 dealt with potential
17 issues related to the neutron exposures that
18 weren't addressed in Appendix D. There was
19 quite a bit of discussion about this last
20 time. NIOSH agreed to attempt to gather
21 additional information on exposure scenarios,
22 so that an additional note of realism might be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 added to the neutron exposure scenarios.

2 Finding 4, well, the initial
3 finding -- I'm sorry -- Finding 4, initial
4 intakes recommended by NIOSH may not correlate
5 with empirical urinalysis. In deference to
6 Jim Neton's concerns last time, we renumbered
7 our subsequent findings as A, B, C, and D
8 rather than having two number 4s, or whatever,
9 which makes good sense.

10 And the Findings 4-A, 4-B, 4-C,
11 and 4-D were kind of discussed all together
12 rather than individually. The bottom line was
13 that NIOSH needed to or agreed to go back and
14 look at these findings and review their
15 position.

16 DR. MAURO: Bill, I'm sorry to
17 interrupt.

18 MR. THURBER: Yes?

19 DR. MAURO: You went through 3
20 very quickly. And I'm looking at the matrix
21 right now, and it looks like that is still an
22 open item.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. THURBER: It is.

2 DR. MAURO: Oh, okay. It wasn't
3 apparent from the discussion.

4 MR. THURBER: Oh, no, no. It said
5 the action item from last time was NIOSH would
6 agree to attempt to gather additional
7 information on exposure scenario details by,
8 among other things, some worker interviews.

9 DR. MAURO: Okay. Thank you.

10 MR. THURBER: All right.

11 With regard to Finding 4-E, which
12 related to the thorium work, the action item
13 was that NIOSH needed to show that the air
14 samples are representative of exposures during
15 the thorium work. And so, that was an
16 outstanding issue on the table.

17 DR. MAURO: Bill, is this the
18 issue -- this is John again.

19 MR. THURBER: Yes.

20 DR. MAURO: Is this the issue we
21 were talking with Rich Leggett about?

22 MR. THURBER: No. The stuff we

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 were talking with Rich about primarily was the
2 4-A, -B, -C, and -D kind of things, and partly
3 related to the role of Type F exposure and
4 partly related to the ability to reconstruct
5 doses in that period in 1960-61 where there
6 was a data gap --

7 DR. MAURO: Right.

8 MR. THURBER: -- and where there
9 had been, presumably, for funding reasons or
10 whatever, a reduction of the sampling. And t
11 here were also some open issues related to the
12 consistency between air-sampling and
13 urinalysis data. So, there was kind of a
14 collection of issues that were embraced by
15 those four findings, 4-A through 4-D.

16 DR. MAURO: Yes, I only bring it
17 up because I did have a chance to talk to Rich
18 recently, and I know he is especially
19 concerned about the break where the bioassay
20 was being done for a certain period of time --

21 MR. THURBER: Right.

22 DR. MAURO: -- and, then, all of a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 sudden, it just stopped and they went to air
2 sampling. And he felt that the air-sampling
3 data especially was problematic.

4 So, just by way of context, this
5 seems to be one of the hotter items that we
6 are going to need to deal with.

7 MR. THURBER: Yes, and it was an
8 item of extensive discussion at the prior
9 meeting, no question.

10 DR. MAURO: Yes.

11 MR. THURBER: This foray through D
12 findings was probably the main focus of the
13 United Nuclear discussion at the November
14 meeting.

15 Okay.

16 MS. EATON: Pardon my intrusion.

17 MR. THURBER: Okay.

18 MS. EATON: Are we allowed to ask
19 questions while you guys are in discussion or
20 make comments?

21 MR. KATZ: I'm sorry, who's
22 speaking?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MS. EATON: Clarissa Eaton, on
2 behalf of the petitioners.

3 MR. KATZ: So, what we are going
4 to do right here is Bill is running through
5 the issues, and Dave will talk about, then,
6 status of deliverables, action items, for
7 follow up here. But we will give you time
8 after that, after we have it all on the table,
9 to make some comments, if you would like.

10 MS. EATON: Okay, good, because,
11 like he just said, that is a very important
12 point as to the company made a business
13 decision to stop those bioassays. And, you
14 know, it is a very common procedure we see
15 today, profits over safety.

16 I mean, you know, this was a
17 conscious decision, and even though there were
18 problems in the sixties and then later found
19 by Oak Ridge that the concentrations were at
20 times 800 percent higher than the maximal
21 allowable concentrations. I think that is a
22 very big issue with us as well.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 And that is all I wanted to say.
2 I'm sorry.

3 MR. KATZ: Okay. Thank you. No,
4 don't apologize.

5 MR. THURBER: Okay. Finding 5,
6 this finding dealt with the fact that NIOSH
7 provided insufficient information about the
8 method used to calculate the inhalation
9 intakes from residual contamination.

10 And it was agreed, or NIOSH said
11 at the November meeting that there was an
12 error in their calculations and that these
13 calculations would be corrected when the Site
14 Profile is issued. And the Work Group felt
15 that the issue was closed with a proviso that
16 the error be corrected and documented in the
17 revised TBD.

18 DR. BEHLING: Bill, can I make a
19 comment here? This is Hans Behling.

20 MR. THURBER: Please, Hans, yes.

21 DR. BEHLING: Yes, that particular
22 issue goes back to one of the earlier comments

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 that I included in my review of the original
2 Rev. 0 and Rev. 1, which didn't change. And
3 the error really was a twenty-nine-fold error
4 between what was recommended as a value as to
5 what it should have been, based on the
6 protocol they provided. So, it was a
7 substantial error. It was a twenty-nine-fold
8 error.

9 So, it should be something that
10 has to be looked at and make sure that we do
11 correct it because it was not a small error.

12 MR. THURBER: And I understand
13 that NIOSH is, indeed, committed to make that
14 correction.

15 Any other comments on Finding 5
16 before we go on?

17 (No response.)

18 Okay. Finding 6, we raised some
19 questions about estimating external doses from
20 residual contamination. We subsequently
21 reviewed our calculations and said we had made
22 a calculational error and that, therefore, the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 issue should be closed.

2 DR. BEHLING: Yes, Bill, again,
3 this is Hans.

4 MR. THURBER: Yes?

5 DR. BEHLING: When I went through
6 the original calculation, I failed to include
7 the short-lived daughters. And as a result, I
8 made a comment that the dose was
9 overestimated, but in review of my calculation
10 and the realization that those short-lived
11 daughters should have been included, I came to
12 the conclusion that NIOSH's original
13 calculation was, in fact, correct. And as you
14 said, we withdrew that particular finding.

15 MR. THURBER: Okay. And we also
16 had one observation, and that was there was
17 concern that the United Nuclear site
18 description was insufficient. Obviously, it
19 is a complicated operation. And on the basis
20 of the discussions at the previous Work Group
21 meeting, the Work Group decided that the issue
22 was closed, again, with the proviso that NIOSH

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 would flesh out the site description when the
2 TBD is issued.

3 MR. KATZ: Thank you, Bill.

4 MR. THURBER: Okay.

5 MR. ALLEN: As far as our update
6 on this, it is not much. We did do interviews
7 for Finding No. 3. I just forwarded them to
8 the Work Group, I think, Friday afternoon.

9 We have not done any type of
10 evaluation or anything of those yet. Those
11 are just the interviews.

12 There is some useful information
13 in there. I am not sure it is going to narrow
14 down the exposure scenario very much.

15 As far as Findings 4-A through -D,
16 we do still owe a White Paper. We want to
17 review the analysis that Leggett did in the
18 review. We wanted to go through that and make
19 sure -- it is kind of a complicated issue to
20 where we wanted to get it all written down in
21 a document and handed out ahead of time. And
22 it is essentially just a matter of resources

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 on getting to that issue.

2 MR. KATZ: Do we have a rough
3 sense of when?

4 MR. ALLEN: No. This has been
5 passed off to somebody else to try to enlist
6 some additional resources -- is what we have
7 been trying to do here. And I don't have a
8 good timeframe on that one yet.

9 Also, we owe on Finding 4 --

10 MS. EATON: It's hard to hear.

11 MR. ALLEN: I'm sorry. I will try
12 to speak up.

13 Also, on Finding 4-E, we owe
14 something that evaluates the
15 representativeness of the thorium air samples
16 to the work. So, essentially, I think we are
17 all on the same page. We owe something on the
18 thorium representativeness, something on 4-A
19 through -D, kind of all lumped together. And
20 I think we owe, it is not specific, but I
21 think we do owe some analysis of those
22 interviews we did for Finding 3 for the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 neutron.

2 And I don't have a good timeframe
3 on when those are going to come. They are
4 getting closer and closer to the top.

5 And that is essentially our update
6 on that.

7 MR. BARTON: A question on 4-E. I
8 know we discussed to some extent in the last
9 meeting that you really needed to go in and
10 flesh out whether the samples were breathing
11 zone or general air process samples. Was that
12 the only consideration we really needed to
13 look at or was it also plant location? Like
14 were these taken actually in thorium areas?

15 MR. ALLEN: I think it was
16 representativeness in general, which would
17 include both.

18 MR. BARTON: Okay.

19 MR. ALLEN: That's how we took it.

20 MR. KATZ: Any other questions?

21 (No response.)

22 CHAIRMAN ANDERSON: The public

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 comment?

2 MR. KATZ: And do we have -- I'm
3 sorry, ma'am, I forgot your name, but do we
4 have more questions?

5 MS. EATON: Clarissa Eaton.

6 MR. KATZ: Ms. Eaton, Ms. Eaton,
7 do you have any other questions or comments?

8 MS. EATON: Well, yes.

9 What testing was done for the
10 alpha particles? And how much data is there?

11 And for like the uranium, the thorium, the
12 radon gas, all the alpha emitters, polonium,
13 that are all present at the hematite, radium,
14 how much data is there? Because my concern is
15 about the alpha radiation, that even the NRC
16 considers it to be 20 times more radioactive
17 than beta or gamma.

18 And, you know, [identifying
19 information redacted] had claimed in his
20 affidavit -- or, no, I'm sorry. Back to in
21 the report about the clothes that were given
22 to the workers, that they were found to be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 contaminated before leaving the site, and
2 often they were sent just to wash their hands.

3 You know, the thorium dioxide, which is water
4 insoluble, I mean, what would even washing
5 their hands have done for that?

6 And so, I have questions about,
7 you know, the data is so sparse. It's here;
8 it's there. You know, we are just having a
9 hard time understanding what data is available
10 and the inhalation exposures. This is a very
11 critical -- that would not have been measured
12 by air samples, you know, as far as the type S
13 material that is being considered.

14 I mean, like, for example, the
15 thorium dioxide was odorless. You know, how
16 would anyone know if they were exposed unless
17 someone was monitoring them?

18 I don't know. I have a lot of
19 mixed feelings about the way NIOSH is coming
20 across with their information. I just don't
21 see how it could even be reconstructed. I am
22 having a hard time.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 You know, there were a lot of
2 spills. These workers were exposed to some
3 hot stuff.

4 And again, I go back to the
5 company's decision to stop this testing when
6 in the sixties they knew they had problems,
7 and, then, once later on, it wasn't even the
8 company that brought up the testing again to
9 resume. It was Oak Ridge.

10 And, then, in addition to that,
11 when their inspections were done by the Atomic
12 Energy Commission, they would cut production
13 back 90 percent. I mean that is like, you
14 know, closing the curtains temporarily, so
15 that a fair estimation couldn't even be given
16 on the inspections.

17 Do you see what I am saying as far
18 as my concerns?

19 You know, the hottest areas, like
20 the item room, that lacks data. There was no
21 thorium or radon test performed on the
22 petitioner at any time with the exception of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 hiring, you know. I don't know.

2 CHAIRMAN ANDERSON: We thank you
3 for your comments.

4 These actually are, a number of
5 the issues you raise are the ones that we are
6 in the process of working through as well.
7 So, you know, we are far from finished on this
8 topic. So, hopefully, we will be able to
9 address a number of your concerns as we move
10 forward here.

11 MS. EATON: So, as far as NIOSH,
12 are they complying with the things you had
13 asked for them back in the September 2010
14 report? Has there been a site visit?

15 You know, the plant is under
16 decommissioning right now. And the
17 contamination has left the site. You know,
18 there's numerous documents, even from the DNR,
19 about the gross elevations that were found by
20 the DNR even. These are all on record.

21 And, you know, has anybody, even
22 in cahoots with anybody that is over the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 decommissioning project? I guess that is my
2 question.

3 Do you even know the background
4 radiation level that they are using as part of
5 the decommissioning right now? Because they
6 are having to tear down the site. It is that
7 hot, and it has been for some time.

8 And since there is such a big --
9 you know, there's lawsuits with the State of
10 Missouri about this decommissioning plan that
11 is in place that they are working on. And is
12 anybody talking to anybody? Has there been a
13 visit from NIOSH? Has anybody even set foot
14 down there to see what is actually going on in
15 the decommissioning process?

16 Because, you know, Westinghouse
17 recently has been caught, they have been cited
18 two or three times accidentally shipping
19 pallets. I mean NIOSH really needs to be down
20 there right now because the workers that are
21 there now are, in fact, you know, the
22 housekeeping is not being done, still.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Is it a covered
2 facility at this point?

3 MR. ALLEN: Residual, I'm
4 thinking, but I am not positive.

5 MS. EATON: You know, I tried to
6 extend the date for the coverage period, but,
7 according to the rules, I cannot do that. I
8 have to give a set date, although my position
9 was, since it is under decommissioning right
10 now, and they keep moving the date as far as
11 the completion, you know, but we should keep
12 that open. But, unfortunately, according to
13 the federal regulations, we have to have a
14 date.

15 But, you know, right now there's
16 workers being at risk in the decommissioning
17 process that are at risk here because
18 shipments of pallets are getting shipped out
19 to metal recyclers. You know, all that stuff
20 could end up in highchairs, be replacements.

21 I mean there is a problem going on
22 today still, and I am just not sure that we

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 really even have a chance.

2 MR. KATZ: So, Ms. Eaton, thank
3 you. I think we can address some of these
4 issues.

5 So, Dave, are you saying 1973 is
6 the end of the covered period?

7 MR. ALLEN: Yes, I think we are
8 getting outside the realm of our authority and
9 we can and can't do in this program. We can
10 only address the exposures associated -- we
11 can address all the exposures from 1958 to
12 1973, but after 1973 we can only discuss the
13 contamination left over from the AEC
14 operations, which were the scrap recovery.

15 As far as the --

16 MS. EATON: I'm sorry, I didn't
17 mean to go off on the decommissioning, but,
18 you know, these are concerns of mine. I
19 apologize.

20 MR. KATZ: No, it's okay. We
21 understand that people may have many concerns
22 that don't fall within the envelope of this

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 program, but it doesn't mean they are not real
2 concerns.

3 MR. ALLEN: It is just outside of
4 our ability to do anything.

5 MR. KATZ: Right.

6 MS. EATON: So, back to my
7 questions quickly, have there been any site
8 visits from anyone, specifically NIOSH?

9 MR. ALLEN: Well, again, we are
10 talking about the doses that were incurred
11 1958 to 1973. And as you said, it is
12 undergoing D&D. The question is whether there
13 is much of any information we could gain now
14 from what the conditions were like in 1973.

15 MS. EATON: Right.

16 DR. NETON: We have done
17 interviews with workers, though, right?

18 MR. ALLEN: Yes. We have done
19 interviews with workers specific on this, and
20 we do offer an interview to every claimant,
21 and some have some decent information and some
22 not necessarily.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: So, point blank, Ms.
2 Eaton, the answer is there have not been site
3 visits because the program doesn't feel like
4 those would be informative for the period that
5 they are covering of operations.

6 MS. EATON: I see. Okay. I just
7 thought, you know, because of the reason of
8 the missing data, that anything they are
9 finding today in their investigations and
10 their compliances with the NRC, that maybe
11 there may be some assistance to what these
12 workers were actually involved in. Because, I
13 mean, the half-lives of, you know, some of
14 these things are 75,000 years. You know, it
15 hasn't went anywhere.

16 MR. ALLEN: Well, one of the
17 biggest problems with looking at what is there
18 now is that they had a great deal of
19 commercial operation that is not covered
20 during the residual period, and the commercial
21 operation went on until not too long ago. And
22 it tends to mask what is within our authority

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 to estimate.

2 MS. EATON: Can I ask, is there
3 any suspicion to you about why there were so
4 many rotations down there? I mean
5 because[identifying information redacted] had
6 also expressed that, you know, when an area
7 became too hot, that they were relocated to
8 another area. Is that normal procedure to
9 rotate like that?

10 DR. NETON: That is a fairly
11 common practice in the nuclear industry.
12 When workers start to approach their annual
13 dose limits or quarterly dose limits, they
14 will move people to areas of lower exposure,
15 so they don't go over the limit.

16 MS. EATON: Okay.

17 DR. NETON: That is a fairly
18 common practice.

19 MS. EATON: Okay. Thank you.

20 I guess at this point --

21 MS. DREY: Well, could I ask a
22 question?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MS. EATON: Oh, I'm sorry.

2 MS. DREY: This is Kay Drey.

3 MR. KATZ: I'm sorry, can you say
4 your name again?

5 MS. DREY: Kay is the first name,
6 K-A-Y. The last name is Drey, D as in David,
7 R-E-Y.

8 MR. KATZ: Yes.

9 MS. DREY: I'm calling from St.
10 Louis.

11 I wondered if you were going to
12 address Clarissa's questions about alpha
13 emitters. And the question is, what data you
14 have found on this?

15 DR. NETON: Well, I think a lot of
16 that is covered in the Evaluation Report, as
17 to why we think it is feasible to reconstruct
18 these doses.

19 MS. DREY: I am having trouble
20 hearing. I'm sorry.

21 DR. NETON: I think our Evaluation
22 Report that is on our website goes into some

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 discussion about why we think we can
2 reconstruct the deltas, particularly for the
3 alpha-emitting radionuclides. I can't comment
4 much more beyond that at this point.

5 But I would encourage you to go
6 out on our website, and all those reports are
7 listed out there.

8 MS. DREY: Okay. Is there a
9 particular report or something that you were
10 thinking?

11 DR. NETON: Well, it is the
12 Evaluation Report. It would be listed under
13 the United Nuclear site.

14 MS. DREY: Okay. Thank you.

15 CHAIRMAN ANDERSON: Okay. Any
16 other questions?

17 MS. DREY: Well, just, also, does
18 the Evaluation Report cover the fact that they
19 had materials from Paducah, and so forth, that
20 were fission materials, like technetium-99?
21 Do you cover those materials as well?

22 DR. NETON: I don't recall if

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 there was a recycled uranium component at
2 United Nuclear or not. I would have to go
3 back and look. I haven't looked at it --

4 MS. DREY: That is very important,
5 I think, you know, the fact that they did find
6 technetium-99, and that surprised everyone at
7 the time they found it.

8 MS. EATON: That they also denied
9 initially upon telling everyone about the
10 offsite contamination. They denied that for
11 some time initially, Westinghouse.

12 MR. KATZ: Dave, are you familiar
13 with this question?

14 MR. ALLEN: Which one?

15 MR. KATZ: The one they are
16 talking about right now, the exposure to
17 technetium.

18 MR. ALLEN: Oh, the exposure to
19 technetium? That is a component of recycled
20 uranium, along with plutonium, neptunium, and
21 several others. I don't recall what the
22 Evaluation Report says about it or whether it

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 is accounted for in there.

2 It is normally a 1 or 2 percent --

3 MS. DREY: I can't hear you. I'm
4 sorry.

5 MR. ALLEN: It is normally, it
6 comes along with the uranium, and we have
7 uranium urinalysis for a great deal of the
8 timeframe. And it is typically a few
9 percentage point increase in that dose. It is
10 something that does need to be accounted for.

11 It is not a big showstopper. It is a
12 multiplier for the uranium dose.

13 But, yes, it does need to be
14 accounted for. I just don't recall --

15 MS. DREY: I am just wondering
16 about not just the uranium and its daughters,
17 but when you have fission products like
18 technetium-99, I wondered if those were
19 assessed at all.

20 MR. ALLEN: Yes, and I can't
21 remember off the top of my head whether that
22 is included in there. It should be. It comes

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 along with the uranium. So, it is always a
2 multiplier on the uranium dose.

3 MS. DREY: What do you mean
4 "always?"

5 MR. ALLEN: They had no reactors
6 at United Nuclear. They didn't process or
7 intentionally gain any fission products.
8 Where they would have come from is as a
9 contaminant in the uranium. That is where
10 they would have gotten it onsite, and that is
11 where --

12 MS. DREY: They got it because
13 they were given recycled uranium to process,
14 which they weren't supposed to. It was
15 supposed to have been refined at the fuel
16 cycle.

17 So, it was a surprise to everybody
18 when it was discovered in the evaporation
19 ponds. I mean it probably wasn't a surprise
20 to everybody, but it was certainly a surprise
21 to the public.

22 MR. ALLEN: Yes, that's what I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 said. It is part of the recycled uranium. It
2 is a contaminant in the uranium. That is
3 where it has to be evaluated.

4 And I don't know the answer off
5 the top of my head, how it is evaluated, but
6 it does need to be --

7 MS. DREY: If it was evaluated.

8 CHAIRMAN ANDERSON: It should be
9 in that report on the website.

10 MS. DREY: The Evaluation Report?

11 CHAIRMAN ANDERSON: Yes.

12 MR. KATZ: Right. And so, in any
13 event, we can check on this, and at the next
14 meeting we can report on that, whether that
15 was addressed.

16 CHAIRMAN ANDERSON: Yes.

17 MS. DREY: Thank you.

18 MR. KATZ: Thank you.

19 CHAIRMAN ANDERSON: Okay. Thank
20 you very much.

21 I think we are now going to break
22 for lunch, and we will come back -- what?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: An hour?

2 CHAIRMAN ANDERSON: Yes, or 40
3 minutes.

4 MR. KATZ: Forty-five minutes?

5 CHAIRMAN ANDERSON: It will be 45
6 minutes. About 1:15?

7 MR. KATZ: Is that good for
8 everyone on the line?

9 (No response.)

10 Okay, 1:15.

11 CHAIRMAN ANDERSON: Yes.

12 (Whereupon, the above-entitled
13 matter went off the record at 12:21 p.m. and
14 resumed at 1:18 p.m.)

15

16

17

18

19

20

21

22

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1

2

3

4

A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

5

1:18 p.m.

6

MR. KATZ: Okay. Good afternoon.

7

8

This is, I am still going to call it the TBD 6001 Work Group for this one last meeting, so I don't confuse anybody. We are going to be changing our name.

10

11

And we are reconvening after lunch to speak about ElectroMet. We have already covered United Nuclear and Hooker.

12

13

14

And we're on.

15

CHAIRMAN ANDERSON: We're on.

16

17

MR. KATZ: Let me just check to see, Bill Field, at least do we have you?

18

MEMBER FIELD: Yes, I'm here.

19

MR. KATZ: Great. Thank you.

20

21

MR. BARTON: Okay. Well, should we handle this the same way we handled the first two sites?

22

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Yes.

2 MR. BARTON: And go through the
3 findings?

4 Well, Bill Thurber, I have been
5 leaning on you pretty heavy all day. So, if
6 you want to take us home, that's fine, or if
7 you're sick of it --

8 MR. THURBER: Okay. No problem.
9 No problem.

10 (Laughter.)

11 Basically, I will go through, I
12 can go through the matrix. But the way it was
13 pretty much left last was that we did not get
14 into an in-depth discussion of ElectroMet
15 because NIOSH indicated that they had new data
16 which they needed to evaluate before they
17 could really get into a substantive discussion
18 and critique of our findings. But I will go
19 through the findings, and we will go from
20 there.

21 Finding 1, NIOSH should discuss
22 the issue of access controls explicitly in the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Evaluation Report to justify the basis for
2 including all workers at ElectroMet, rather
3 than just those who worked in the area plant.

4 You will recall that the uranium
5 work, the reduction of UF₄ to uranium metal,
6 was done in a special plant called the area
7 plant which was built specifically for that
8 work by the AEC in 1943. It was located in
9 the corner of a large site where the Electro
10 Metallurgical company made a variety of
11 ferroalloys, primarily for the steel industry.

12 And the area plant, based on some
13 of the testimony, was fenced off and guarded
14 and gated. Our concern was that, was it
15 possible to identify the cohort of workers who
16 were exclusively employed at the area plant as
17 compared to the larger population of
18 commercial workers on the rest of the
19 facility. So, that was what was behind this.

20 And when this was last discussed,
21 and I believe this dates back to June of last
22 year, NIOSH indicated that they would try to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 get some clarification from the Department of
2 Labor on the exact scope of the population
3 that was to be involved.

4 The second finding --

5 DR. GLOVER: Do we want to cover
6 these or do you guys want to just do them all?

7 MR. KATZ: Yes, we could cover
8 them one at a time.

9 DR. GLOVER: Just go ahead and --

10 MR. THURBER: If you want to cover
11 them one by one, that is fine.

12 MR. KATZ: Sure.

13 CHAIRMAN ANDERSON: Yes, why don't
14 you?

15 DR. GLOVER: We have already done
16 at least a segue to it.

17 MR. THURBER: Yes, no sense
18 repeating it again.

19 DR. GLOVER: Yes, because I will
20 have to refresh your all's memory by the time
21 we get to some of these.

22 So, on this one, and this is going

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 to drive where we are, Part A when we
2 responded to this was we are going to contact
3 the Department of Labor and see how they
4 handled this. And I have provided, in the
5 folder to the Work Group I gave you the
6 Department of Labor's email back to us, which
7 we can't put people in places.

8 And so, basically, if they are an
9 ElectroMet worker, then we're not going to
10 know that they were -- I mean we have some
11 monitoring data, but we certainly don't have
12 everything that we can call these people not
13 ElectroMet. If they put them inside there,
14 then that is how we are, as we said before.

15 The other part to this, though, is
16 the source-term base. The model that is going
17 to affect our discussion throughout the rest
18 of this is that we have written a letter to
19 the Department of Energy asking them to
20 clarify the ore and thorium work that occurred
21 at ElectroMet.

22 And so, without those pieces of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 information, before I know, Bill, that I said
2 that if it was outside of that area, then we
3 wouldn't cover it. It is unclear where people
4 are, and I think there is a little bit of a
5 change in how we may deal with facilities like
6 this when they can't put people in places, and
7 they don't distinguish DOE ElectroMet from
8 ElectroMet proper in the facility description.

9 Plus, we are not sure exactly where the work
10 occurred.

11 So, there are indications of tons
12 of high-grade ore being sent to ElectroMet and
13 worked on. We found several new references.

14 So, we are right now waiting for a
15 response from the Department of Energy. I
16 know they are working on it, looking at June
17 or July, likely to give us a response.

18 And so, that is going to affect
19 the source-term, and the source-term is going
20 to drive our model.

21 CHAIRMAN ANDERSON: But they did
22 respond to your letter?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. GLOVER: No, the Department of
2 Labor responded to our --

3 CHAIRMAN ANDERSON: Okay.

4 DR. GLOVER: -- first request back
5 somewhere in the end of 2010. This is a new
6 letter we wrote last month.

7 CHAIRMAN ANDERSON: Okay.

8 DR. GLOVER: And so, regarding
9 specifics on the ore and thorium source-terms
10 that are described.

11 MR. THURBER: Which obviously
12 relates to the next finding.

13 Finding 2, research and
14 development work on uranium ores was not
15 mentioned in NIOSH 2009, which is the
16 Evaluation Report. And there was some
17 suggestion that there were ores that may have
18 been worked on, and we felt it was important
19 that NIOSH look a little further to see if
20 that was, indeed, the case and what quantities
21 might be involved.

22 And I think Sam has really covered

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 this second point, but go ahead, Sam.

2 DR. GLOVER: Well, as you said, I
3 think that covers it.

4 (Laughter.)

5 MR. THURBER: Okay. I didn't mean
6 to put words in your mouth.

7 DR. GLOVER: No, sir, that's fine.

8 MR. THURBER: Finding 3, NIOSH
9 should review the start and end dates for the
10 operational period to ensure that all relevant
11 documentation has been evaluated.

12 And one of the things behind this
13 finding is that in the Petition Evaluation
14 Report, as I recall, NIOSH said that the work
15 at ElectroMet began in April of 1943, which
16 was based on when the area plant actually
17 started up.

18 But there was some documentation
19 which we quoted in our review of the ER which
20 indicated that, as early as December of the
21 previous year, that ElectroMet had done some
22 casting of uranium. Now whether it was done

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 in their research and development lab as
2 compared to the area plant, or what, I don't
3 have any idea. But, on the basis of that, we
4 felt that the start dates needed to be
5 examined to be sure that the period over which
6 AEC work was properly represented.

7 DR. GLOVER: And NIOSH concurs
8 that those references are completely correct
9 that you mentioned. They did start in late
10 December or November of 1942. And so, we
11 agree, as we develop a source-term-based model
12 after the DOE response, we will certainly
13 include early years, look at whether that is
14 appropriate, yes. So, we agree.

15 MR. THURBER: Okay. Finding 4,
16 the assumption that uranium metal production,
17 reduction process, and associated industrial
18 production, industrial hygiene conditions were
19 unchanged from 1943 to 1949 may not be
20 correct.

21 The changes that appear to have
22 been made in 1947 would need to be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 investigated before the assumption can be used
2 to implicitly back-extrapolate post-October
3 1947 data to the 1943-to-1945 period.

4 What underlies this finding is the
5 fact that, prior to about October 1947, there
6 was not a great deal of monitoring information
7 of any kind available. And after that, there
8 was quite a bit of data.

9 And so, in the Evaluation Report,
10 NIOSH chose to take the time period, post-
11 October 1947 time period, and use that as a
12 basis for back-extrapolating to the beginning
13 of operations in 1943.

14 And the argument that NIOSH made
15 was it appears to us that the process was
16 really unchanged over the period from when
17 operations began until the time that there was
18 a reasonable amount of air-monitoring and
19 urinalysis data available.

20 And the argument that we made was
21 that there was some evidence in the literature
22 that NIOSH was -- I'm sorry, NIOSH, excuse me

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 -- ElectroMet was in the process of making
2 some significant change prior to 1947, which
3 suggested to us that things were not really
4 constant, that they were, indeed, making some
5 process improvements, and that aspect needed
6 to be considered if one was to use this back-
7 extrapolation approach.

8 DR. GLOVER: Hey, Bill, we agree.

9 I mean I agree with what you are saying. We
10 are going to wait until the source-term letter
11 is responded to, so we can have an overall.

12 At the end of this, I put four or
13 five graphs to give folks a flavor for the
14 data collection. I do agree with you there
15 were health changes made. There are some
16 health improvements.

17 There are some early bioassay data
18 that we have, though, and we are actually
19 going to explore with DOE/Oak Ridge whether we
20 can -- we have a lot of unknowns, what their
21 work title was. And so, we have a number of
22 bioassay samples that were done in the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 earliest years, 1943 and 1944, with an unknown
2 occupation.

3 So, we are going to explore with
4 DOE down at Oak Ridge, which has ElectroMet's
5 medical records, whether we can get some
6 additional work titles for these guys. So, we
7 are going to check into that, as we look also
8 into this source-term-based model.

9 You will see some things, though,
10 in the air-sampling data. I tried to give you
11 a flavor for the types of samples that were
12 taken, BZs, what the active peers were. So,
13 if you look at page 9, you will notice that
14 one hassle is when the health and safety
15 laboratory comes in. They have got samples up
16 to almost 500,000 dpm per meter cubed. So,
17 the location and types of samples that were
18 done, there is obviously nothing that
19 indicates those kinds of exposures in the
20 beginning for the air samples that they chose
21 to take. So, back-extrapolating, you know, we
22 are going to have to be careful when we

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 recognize that.

2 So, we are reviewing the source-
3 term-based model. We do understand your
4 concerns. We are trying to find out better
5 how that uranium bioassay may or may not be
6 used.

7 Right now, we have too many
8 unknowns. But we are going to see if we can
9 perhaps make some improvement with that.

10 But that five or six pages there
11 is just sort of a feel for the types of urine
12 data we have, when we have urinalysis data.
13 On page 13, you see when we have it. I tried
14 to make some feel for the type of occupations
15 that we have.

16 Many of those on page 14 show the
17 unknowns. Most of those are from that first
18 occupational period. So, we have about 57
19 unknowns, bioassays associated with unknown
20 worker types. So, that will kind of give us a
21 better flavor for who was being monitored.

22 And I broke those out into a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 series of graphs, basically, to show, as a
2 function of time, when they were collecting
3 bioassay.

4 So, there are just some initial
5 fields. We have put a lot of that data
6 together, as we had mentioned before. We are
7 going to do all the SRDB documents, see all
8 the external data, the internal data, so we
9 can make sure that we are ready to provide our
10 source-term-based model.

11 But we do understand the concern,
12 Bill.

13 MR. THURBER: Okay. Finding No.
14 5, this is not a particularly substantive
15 issue, but there appeared to be some
16 discrepancy in the text describing whether
17 there were or were not sampling data available
18 measuring internal exposure during the standby
19 period. There was a period of a couple of
20 years, I believe in 1948-1949, where the
21 facility was on standby. There were some
22 discrepancies in the text about that.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. GLOVER: And we agree, when we
2 put that forward, we will make sure we address
3 that, yes.

4 MR. THURBER: Clearly, not a
5 substantive point.

6 Finding 6, NIOSH should take into
7 account the difference between fixed-head
8 samplers, process samplers, and general area
9 samplers and the actual intake and
10 uncertainties this creates for estimating
11 bounding intakes.

12 And it wasn't clear that the
13 analysis had taken into account that sometimes
14 they may have done lapel samplers, but
15 actually there also may have been fixed-head
16 samplers, and there could be a considerable
17 difference between what you measure with a
18 fixed-head sampler that is kind of near where
19 the operator's head is nominally and what you
20 get with an actual lapel sampler. We felt
21 that the question of what the samples, the air
22 samples, truly represented needed to be very

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 carefully considered.

2 DR. GLOVER: Agreed. So, in our
3 source-term or in our data, we now have all
4 the descriptions of the types of samples and
5 whether they are BZs and GAs and the
6 descriptions.

7 MR. THURBER: Okay. Finding 7,
8 NIOSH needs to establish the job titles
9 corresponding to jobs actually done for the
10 period of employment. NIOSH job title
11 consolidation scheme would not produce
12 bounding estimates for all workers in the
13 proposed Class in the absence of such an
14 analysis.

15 We had concern as to whether
16 laborers did operator jobs or, you know,
17 whether people moved around from job to job in
18 the area plant and that sort of thing, and
19 felt that if the source-term was to be
20 developed by worker Class, that one needed to
21 be sure that those things didn't happen or, if
22 they did, they were accounted for.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. GLOVER: And we will, as we
2 propose a model, we will make sure that we
3 take that into account. Right now, there is
4 not one on the table to revise, but we
5 certainly will --

6 MR. THURBER: Yes, right.

7 DR. GLOVER: -- make sure we think
8 about worker movement.

9 And I think 8.

10 MR. THURBER: Okay.

11 DR. GLOVER: I think 8 goes to
12 kind of the same thing.

13 MR. THURBER: Yes. What we
14 pointed out is that there are several
15 techniques for calculating what the 95th
16 percentile is. It happened, at least in this
17 particular case, that the graphical method
18 that NIOSH used gave the lowest of three
19 alternatives that we examined.

20 And so, if one is saying that the
21 approach is bounding for the Evaluation
22 Report, one needs to be careful about the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 basis upon which that consideration is built.

2 DR. GLOVER: Okay.

3 MR. STIVER: Bill, this is John
4 Stiver.

5 I want to jump in here and mention
6 something about the change in NIOSH's approach
7 to using the DWE data in model construction.

8 Now, Sam, I think you indicated
9 that you found a lot of bioassay data. So,
10 the whole issue of when DWEs may apply may be
11 a lot different than what I gathered from
12 looking at the previous report.

13 But back last, I believe it was in
14 October of 2010, NIOSH released a new paper.
15 I believe it is Revision 3 that Bob Morris put
16 out, a White Paper on the FMPC WDE reports.
17 And this was in response to the review of
18 Revision 2 of the NIOSH methodology that we
19 put out in July of 2009.

20 And, basically, what happened was
21 that NIOSH decided to go ahead and utilize the
22 methodologies that were put out by Adam Davis

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 and Dan Strom in the 2008 Health Physics
2 Journal article, where they looked at the
3 uncertainties associated with the DWE
4 datasets. And they actually did use the 1948
5 ElectroMet set in their analysis.

6 And what they did was they used
7 Monte Carlo techniques, and they did a couple
8 of different approaches. One was looking at
9 discrete sampling of the individual task air
10 samples, and the other was to fit those
11 samples to a log-normal distribution and
12 sample that.

13 And from that, they came up with
14 estimates of GSD ranges that should be
15 associated with the DWE set. Basically, they
16 demonstrated that a GSD of five is actually
17 pretty good for this type of data.

18 And the Morris Rev. 3, Revision 3,
19 basically, abandoned this approach of trying
20 to assign people into categories by job type
21 and, also, looked at the other big issue that
22 we had. You know, when you take a bunch of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DWEs and rank-order them and set a log-normal
2 to it, and then pick off the 95th percentile,
3 and we demonstrated in our review that in
4 every single case we looked at we were missing
5 the actual average with DWE for the highest
6 exposed Class.

7 And, then, when you also
8 considered that the DWE itself is an uncertain
9 value with a very large uncertainty, I think
10 that was probably the main reason why NIOSH,
11 then, went to this new methodology. And it
12 seems to have more global implications outside
13 of Fernald. In a discussion in Weldon Springs
14 last week, we went through this very same
15 topic.

16 So, we really feel that it is more
17 of a global issue. It is going to have to be
18 addressed here as well.

19 That is really all I wanted to say
20 about this right now.

21 DR. GLOVER: We will certainly
22 look at that. They didn't propose that as

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 part of the ElectroMet stuff. They did that
2 through Fernald. So, they had no internal
3 review from our side, although maybe through
4 Jim, but not as an ElectroMet -

5 MR. STIVER: It is more of a
6 global significance I think.

7 DR. GLOVER: Exactly.

8 MR. STIVER: It is really an
9 overall methodology for using that type of
10 data.

11 DR. GLOVER: Yes, and Jim didn't
12 review it because he is conflicted at Fernald.
13 So, this is an ElectroMet model. And we will
14 see where the source-term-based thing leaves
15 us.

16 MR. STIVER: Okay.

17 DR. GLOVER: So, I mean, where
18 does that leave us for this? You know, the
19 years that are in the SEC or not, or we will
20 see where this goes.

21 MR. STIVER: This just has
22 implications for Finding 6 through 8 and,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 also, 10 about the reduction bomb explosions
2 and those types of off-normal events and the
3 uncertainties that would be associated with
4 those.

5 DR. GLOVER: That was Morris'
6 report, right?

7 MR. STIVER: Right.

8 DR. GLOVER: Yes.

9 MR. THURBER: Are we ready for 9?

10 CHAIRMAN ANDERSON: Yes.

11 MR. THURBER: Okay. Nine doesn't
12 really require much. What we pointed out was
13 that the approach taken in Appendix C for
14 ElectroMet was much more claimant-favorable
15 than that in TBD-6001, but that was really a
16 TBD-6001 problem, if you will. And so, it has
17 gone away with the demise of TBD-6001.

18 DR. GLOVER: Agreed.

19 MR. THURBER: Finding 10, given
20 the high frequency of blowouts at other
21 facilities using the same equipment, NIOSH
22 should reexamine the possibility that blowouts

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 occurred at ElectroMet.

2 We looked at the information that
3 was on the O: drive and any other materials,
4 and could not find any evidence of it, but it
5 was still very difficult to believe that the
6 same process, when practiced elsewhere, there
7 were frequent numbers of blowouts. And we
8 felt that this area, even though we didn't
9 come up with anything, needed to have careful
10 attention paid to it.

11 And we recently supplied to the
12 Work Group the revised Appendix E to our
13 ElectroMet report, which summarizes the
14 interviews. I have to say that we were remiss
15 in getting that out. It was ready to go, and
16 it fell in the crack until Sam asked me what
17 happened to the interview reports.

18 My feeling is that the interview
19 reports are very inconclusive about whether
20 blowouts occurred at ElectroMet. But I will
21 leave that to the rest of you to judge after
22 you have read the report or the appendix.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Sam?

2 DR. GLOVER: I agree, yes, we
3 could find nothing that supports blowouts. I
4 did look through some of the interviews. The
5 only thing I did notice was that they said,
6 either in those interviews or in another
7 document, that they were able to take
8 advantage of the Ames Laboratory processes and
9 make improvements on it as it was implemented
10 at their facility. So, perhaps they were able
11 to make -- but that is all conjecture. But,
12 as of yet, I have seen nothing that really
13 helps us with saying that blowouts occurred.

14 MR. THURBER: Right.

15 The next finding, that NIOSH
16 should address the residual period, it was
17 pointed out that this is a DOE site and,
18 therefore, the residual period does not get
19 included. And so, that finding is closed.

20 DR. GLOVER: Agreed.

21 MR. THURBER: Finding 12, NIOSH
22 should provide more detailed information in

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 support of their position in the ER that,
2 considering the intake scenarios established
3 in TBD-6001, Appendix C, the calculated
4 urinary excretion of uranium from these
5 intakes was compared to the actual data and
6 was found to be bounding in each case.

7 And we did some calculations, and
8 we did not come to the same conclusion. And I
9 believe we supplied the spreadsheet data.

10 DR. GLOVER: I think you gave me
11 the external, the Riley file, Bill, but I
12 don't think you sent me your --

13 MR. THURBER: Oh, yes, okay. I
14 know, yes, the one that Karene Riley did, yes.

15 DR. GLOVER: Right. I would be
16 more than happy if you want to provide that as
17 we develop a model and look at what your all's
18 concerns were.

19 MR. THURBER: Okay.

20 DR. GLOVER: So, if you please
21 would send that to me, that would be great.

22 MR. THURBER: Yes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. GLOVER: We certainly do have
2 some early bioassay data. We will make sure
3 that, whatever model we do propose, that
4 pre-`48 model, we will make sure that we look
5 at those concerns as we review this.

6 MR. THURBER: Okay. That is on
7 our list.

8 Finding 13, the approach taken to
9 bound external photon exposure values in Table
10 C-4 of TBD-6001, Appendix C, appears to be
11 reasonable for the operating period beginning
12 June 1948. However, NIOSH must demonstrate
13 that this approach is bounding for the earlier
14 period where there is no film badge data
15 available.

16 And this is similar to one of our
17 earlier findings about the ability to back-
18 extrapolate from 1947 to 1943 kind of
19 timeframe.

20 MR. BARTON: There is also the
21 issue of unknown job categories in that
22 finding.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. THURBER: Yes, which also ties
2 in with another one of our earlier findings.

3 Thanks, Bob.

4 MR. BARTON: Yes.

5 MR. THURBER: Finding 14, NIOSH
6 should state in the Petition Evaluation Report
7 that estimates of occupational medical
8 exposure should be based -- oh, this is the
9 photofluorography thing that we discussed
10 earlier today.

11 I think that we, as John Mauro
12 outlined this morning, we have a clear
13 understanding of how this should be treated at
14 AWEs in the absence of specific information to
15 the contrary.

16 DR. GLOVER: And I agreed we would
17 look at it. We will make a formal -- but
18 there are documents that discuss the medical
19 program at --

20 MR. THURBER: And in those, as I
21 recall, it did say X-ray, at least some that I
22 looked at.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 DR. GLOVER: That is correct.

2 MR. THURBER: Finding 15, SC&A
3 independently developed a database for annual
4 beta doses and found the 95th percentile value
5 was in excellent agreement with that reported
6 by NIOSH. However, the 50th and 5th
7 percentiles were somewhat higher. And
8 therefore, again, if you are categorizing
9 people by job category, this might result in
10 some understated results.

11 I think that this is the
12 spreadsheet, actually, that I believe we
13 provided to you, Sam.

14 DR. GLOVER: Yes, you did, and I
15 appreciate that.

16 Also, as I said, we went through
17 all the SRDB documents and tried to make sure
18 we had all of the data. So, we actually have
19 additional datasets which you guys have
20 evaluated, Bill.

21 So, whatever we do choose to go
22 forward with, we will make sure we use the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 most comprehensive dataset we do have.

2 MR. THURBER: Right.

3 DR. GLOVER: But we will make sure
4 that we include, depending on how we set up
5 the job title or whatever model we choose to
6 use, how that gets implemented, that we
7 include that data, the appropriate analysis.

8 So, I understand your concern.

9 MR. THURBER: Okay. The thrust of
10 the next finding I believe is that there
11 wasn't sufficient guidance in Appendix E to
12 address exposure to the hands and arms, and we
13 that that needed to be considered carefully.

14 DR. GLOVER: I know that Dave
15 Allen, we just came to that some resolution on
16 this at another facility, the enhanced
17 exposure, the Puzier effect. So, I need to
18 make sure where that got left, Bill, for the
19 other facilities. I think we had some
20 agreement on that perhaps.

21 MR. THURBER: Yes. Well, we kind
22 of talked a little bit about that this

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 morning.

2 DR. GLOVER: Yes, ElectroMet
3 clearly had enhanced exposure.

4 MR. THURBER: Yes.

5 DR. GLOVER: They discussed it
6 very clearly. So, there is a lot of beta
7 dosimetry or film badge.

8 MR. THURBER: Right.

9 DR. GLOVER: So, we do have some
10 things. We need to make sure we take all of
11 that into account.

12 But we do agree there were some
13 significant opportunities for enhanced
14 exposure.

15 MR. THURBER: Yes, we felt that,
16 in particular, that it was the skin other than
17 the hands and arms that needed to be
18 addressed.

19 Okay. Finding 17, again, this
20 ties in really with a point that we have made
21 in a couple of earlier findings. NIOSH needs
22 to provide convincing arguments that the 95th

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 percentile values based on 1948-1949 data are
2 bounding for the period prior to December
3 1947. And I think this has been adequately
4 covered in discussion and comments by NIOSH on
5 a couple of our previous findings here.

6 And that's the end.

7 MR. KATZ: Thank you, Bill.

8 CHAIRMAN ANDERSON: The last word,
9 Sam.

10 DR. GLOVER: Thank you, Bill.

11 (Laughter.)

12 MR. THURBER: You're very welcome.

13 DR. GLOVER: Well, I am thinking
14 from our standpoint we have to see what the
15 Department of Energy is going to come back
16 with, see where our source-term is. And at
17 that point, we can update the rest --

18 CHAIRMAN ANDERSON: A lot of these
19 are source-term-related.

20 MR. KATZ: Do you have a rough
21 sense of timeframe?

22 DR. GLOVER: I would say by July,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 is what they were saying.

2 MR. KATZ: By July is when you
3 will hear from DOE.

4 DR. GLOVER: Yes.

5 MR. KATZ: But, then, assuming you
6 have to develop a --

7 DR. NETON: Well, but it depends
8 on what the source-term ends up being. If it
9 is an ore-type source-term, then we are going
10 to be in a similar situation as we were at a
11 lot of other facilities that are SECs. I am
12 not saying it will become an SEC, but
13 depending on if the source-term is of
14 sufficient magnitude that we have like --
15 correct me if I am wrong, Sam -- a lot of
16 thorium-230 --

17 DR. GLOVER: Yes, it is almost in
18 the 100,000 pounds of Mallinckrodt material.

19 DR. NETON: If you end up with
20 that kind of material, then I am not sure
21 where we are going to end up at the end of the
22 day.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Okay. So, July for an
2 update on where we are with this.

3 DR. GLOVER: Yes.

4 MR. KATZ: So, if you can just,
5 when you get a response, if you will send that
6 to the Work Group when you receive it --

7 DR. NETON: Yes.

8 MR. KATZ: -- so, everybody will
9 know where we are standing on this one.

10 CHAIRMAN ANDERSON: Yes. And we
11 haven't scheduled it, but I was thinking, if
12 we are going to plan to have Hooker on the
13 agenda in August, we should probably have a
14 final meeting in July.

15 MR. KATZ: Yes, July or -- yes.

16 CHAIRMAN ANDERSON: Okay. Yes.

17 DR. NETON: When is the Board
18 meeting in August, early August or --

19 MR. KATZ: No, I think it is the
20 third week in --

21 CHAIRMAN ANDERSON: Well, we could
22 do it earlier, but sometime --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealgross.com

1 MR. KATZ: I think it is the third
2 week in August.

3 CHAIRMAN ANDERSON: So, I would
4 just try, if you were going to be done, and if
5 we are going to have a meeting to finalize
6 Hooker, if we could add this to it, it would
7 be helpful. If it isn't, it isn't. You know,
8 that's the way it goes.

9 DR. NETON: The Board meeting is
10 at the end of August.

11 CHAIRMAN ANDERSON: Well, then, we
12 could push it off.

13 DR. NETON: We could push it off
14 until a little bit later in July or --

15 MR. KATZ: We could, or even --

16 DR. NETON: -- early August.

17 MR. KATZ: -- before the Board in
18 August.

19 CHAIRMAN ANDERSON: Yes.

20 DR. NETON: Because it seems to me
21 the Hooker resolution is going to be fairly,
22 hopefully, straightforward.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: Yes.

2 MR. KATZ: Yes.

3 DR. NETON: It wouldn't be too
4 much of an issue to wrap things up in one
5 quick meeting.

6 CHAIRMAN ANDERSON: Yes.

7 DR. NETON: And depending on what
8 comes out here, this could be fairly
9 straightforward as well.

10 MR. KATZ: Right.

11 CHAIRMAN ANDERSON: Yes.

12 MR. KATZ: So, we will wait for a
13 notice in July.

14 I don't know if you want to
15 tentatively book a date or not at this point.

16 CHAIRMAN ANDERSON: Sure.

17 MR. KATZ: Do you want to do that,
18 Bill? Are you in a position to book a date?

19 MEMBER FIELD: Yes.

20 MR. KATZ: Okay. Let's look at
21 our calendars.

22 CHAIRMAN ANDERSON: So, early

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 July, we have already got --

2 MR. KATZ: Well, we won't have
3 notice even until --

4 CHAIRMAN ANDERSON: Yes, I've got
5 GDP/BNL on the 6th and the 7th.

6 MR. KATZ: So, I am just thinking
7 give us sufficient time, if you want to look
8 at the week of August 8th?

9 DR. GLOVER: I will be out. You
10 may want to do it anyway. I can always call
11 in, but the week of August 8th I will be out.

12 MR. KATZ: Okay.

13 CHAIRMAN ANDERSON: Actually, that
14 is a good week for me.

15 MEMBER FIELD: Yes, I will be out
16 as well.

17 MR. KATZ: Okay. So, that doesn't
18 work.

19 CHAIRMAN ANDERSON: It figures.
20 It is good for me.

21 MR. KATZ: Yes, and the week
22 before doesn't work for me. So, what about --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 CHAIRMAN ANDERSON: The 22nd is
2 when our meeting is, that week.

3 MR. KATZ: So, what about the week
4 of July 25th? We will know where we stand at
5 that point with DOE.

6 CHAIRMAN ANDERSON: That week I am
7 in Halifax.

8 MR. KATZ: The week of the 25th
9 you're in Halifax?

10 CHAIRMAN ANDERSON: Yes.

11 MR. KATZ: That sounds nice.

12 CHAIRMAN ANDERSON: The 10th
13 International Mercury Conference.

14 MR. KATZ: And did we already rule
15 out the week of the 15th?

16 CHAIRMAN ANDERSON: Of?

17 MR. KATZ: August. How is the
18 week of August 15th?

19 MEMBER FIELD: Yes, that works for
20 me.

21 MR. KATZ: It works for me.

22 CHAIRMAN ANDERSON: Yes, I could

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 do that, if we wanted to do it. Monday is
2 completely free for me.

3 MR. KATZ: Is Monday best for you?

4 CHAIRMAN ANDERSON: Yes.

5 MEMBER FIELD: I will be getting
6 back from vacation on that Sunday night.

7 MR. KATZ: So, how about August
8 16th? Does that still work for you, Andy?

9 CHAIRMAN ANDERSON: Yes, I could
10 probably do that. I have got a Board meeting
11 I would just love to skip.

12 (Laughter.)

13 MR. KATZ: Okay. So, let's
14 everybody pencil in August 16th for the next
15 Work Group meeting.

16 MEMBER FIELD: And what do we call
17 the Work Group by that time?

18 MR. KATZ: And this will be the
19 Uranium Refining AWEs Work Group.

20 DR. NETON: I think we should
21 develop a symbol for it, though.

22 CHAIRMAN ANDERSON: Well, Jim

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Melius said --

2 MR. KATZ: Yes, he had a funny
3 one.

4 CHAIRMAN ANDERSON: -- AWE --

5 MR. KATZ: It sounded like "GROG"
6 or something.

7 CHAIRMAN ANDERSON: Yes.

8 MR. KATZ: URAWG.

9 Okay. So, let's set that, then,
10 August 16th.

11 CHAIRMAN ANDERSON: All right.

12 MR. KATZ: Any other business for
13 the good of the order?

14 CHAIRMAN ANDERSON: I don't.

15 MR. KATZ: Anyone else?

16 CHAIRMAN ANDERSON: What do we
17 have for -- on our matrix we had Baker-
18 Perkins?

19 MR. KATZ: Right. That is a TBD.
20 It is not an SEC, right?

21 DR. NETON: There was an SEC.

22 MR. KATZ: There was?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 DR. NETON: Yes, that was the
2 mixing uranium issue.

3 MR. KATZ: Right.

4 DR. NETON: Yes, and there was a
5 residual. I forget what was being evaluated.

6 Can anyone from SC&A help me out?
7 Baker-Perkins was --

8 MR. THURBER: Yes, that's mixers,
9 that's right.

10 DR. NETON: Yes, but it is not an
11 SEC --

12 MR. KATZ: It is not an SEC
13 issue --

14 DR. NETON: The SEC was denied by
15 the Board.

16 MR. KATZ: Right. Right.

17 DR. NETON: But it is a TBD issue,
18 then, I guess, how we are doing the dose.

19 MR. THURBER: Yes, it is a TBD
20 issue.

21 MR. KATZ: That's what I thought.

22 MR. THURBER: I put the matrix in

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

1 just for --

2 CHAIRMAN ANDERSON: Okay. Because
3 I seem to remember we closed it out.

4 MR. KATZ: So, if we have work
5 ready, certainly, we can address it during the
6 Work Group meeting as well.

7 CHAIRMAN ANDERSON: Yes.

8 MR. KATZ: But the SEC stuff
9 should take priority, if we are choosing.

10 DR. MAURO: This is John.

11 The Baker-Perkins Site Profile
12 review has been filed, but I don't believe it
13 has been put on anyone's agenda.

14 Is Baker-Perkins underneath, one
15 of the sites underneath TBD-6001?

16 MR. THURBER: No. No, it is
17 Appendix P.

18 DR. MAURO: It is Appendix P,
19 but --

20 MR. THURBER: Yes. No, period,
21 that's all.

22 DR. MAURO: That's it? Oh, okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 Let me know if it had a hold by way of a Work
2 Group.

3 MR. KATZ: This Work Group.

4 DR. MAURO: Oh, it does? Oh,
5 okay.

6 MR. KATZ: Yes.

7 DR. MAURO: That's good. Okay.
8 Thank you.

9 MR. KATZ: Yes.

10 CHAIRMAN ANDERSON: Okay. So, I
11 mean I just saw that, and I don't think we
12 talked about it the last time.

13 MR. KATZ: Okay.

14 CHAIRMAN ANDERSON: So, what else
15 are we assigned?

16 MR. KATZ: I don't think we need
17 to review -- everybody's clear on their action
18 items, right?

19 MR. BARTON: Yes, I think so. I
20 am pretty sure.

21 CHAIRMAN ANDERSON: So, do we have
22 anything else?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 MR. KATZ: Do we have any other
2 sites assigned to this Work Group?

3 I don't believe so.

4 DR. NETON: I think he is
5 volunteering.

6 (Laughter.)

7 CHAIRMAN ANDERSON: No, I'm not
8 volunteering. I am looking to close the
9 Committee down before we change the name.

10 (Laughter.)

11 DR. MAURO: This is John.

12 This is, again, a Site Profile
13 review that we are in the home stretch of
14 delivering. It is called the DuPont Deepwater
15 Works.

16 MR. KATZ: Right, right.

17 DR. MAURO: And I believe that
18 also has a home here.

19 MR. KATZ: Yes, that will have a
20 home here, right.

21 DR. MAURO: But it is not -- I
22 just wanted to make sure I know which -- I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 always have problems with which ones belong
2 where. But, okay, this one has a lot of
3 sites, then. This Work Group has got more
4 than any other sites that they are dealing
5 with.

6 MR. KATZ: Yes, you're right,
7 John. So, that will come here.

8 DR. MAURO: Okay.

9 CHAIRMAN ANDERSON: Okay.
10 Otherwise, I don't have any other issues.

11 MR. KATZ: We are adjourned.

12 CHAIRMAN ANDERSON: We are
13 adjourned.

14 MR. KATZ: Thank you, everyone.

15 (Whereupon, the above-entitled
16 matter went off the record at 2:01 p.m.)

17

18

19

20

21

22

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1

2

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com