

This transcript of the Advisory Board on Radiation and Worker Health, Pantex Work Group, has been reviewed for concerns under the Privacy Act (5 U.S.C. § 552a) and personally identifiable information has been redacted as necessary. The transcript, however, has not been reviewed and certified by the Chair of the Pantex Work Group for accuracy at this time. The reader should be cautioned that this transcript is for information only and is subject to change.

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

CENTERS FOR DISEASE CONTROL

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NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH

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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

+ + + + +

PANTEX WORK GROUP

+ + + + +

WEDNESDAY
AUGUST 10, 2011

+ + + + +

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

PRESENT:

BRAD CLAWSON, Chairman
JOSIE BEACH, Member
BOB PRESLEY, Member*
PHIL SCHOFIELD, Member*

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ALSO PRESENT:

TED KATZ, Designated Federal Official
ISAF AL-NABULSI, Department of Energy*
TIM ADLER, ORAU*
KATHY BEHLING, SC&A*
BOB BISTLINE, SC&A*
MEL CHEW, ORAU
KATHY ROBERTSON-DEMERS, SC&A
JOE FITZGERALD, SC&A
STU HINNEFELD, ORAU
JENNY LIN, Health and Human Services
JOHN MAURO, SC&A*
ROBERT MORRIS, ORAU*
JIM NETON, ORAU
SARA RAY*
MARK ROLFES, ORAU
PAUL RUDER, ORAU
BILLY SMITH, ORAU*
MATTHEW SMITH, ORAU*
JOHN STIVER, SC&A

* Participating via telephone

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

2 9:00 a.m.

3 MR. KATZ: So good morning,
4 everyone in the room and on the line. This is
5 the Advisory Board on Radiation and Worker
6 Health, Pantex Work Group. We are just
7 getting started, and we will begin as always
8 with roll call, beginning with Board Members
9 with the Chair.

10 (Roll call.)

11 MR. KATZ: All right, so that
12 takes care of roll call. Let me note for
13 everyone on the line, please mute your phone
14 except when you are addressing the group. If
15 you don't have a mute button on your phone, if
16 you press *6, that will mute your phone, and
17 then press *6 again, and it will take it off
18 mute; and, please, nobody put the call on
19 hold. Hang up and dial back in, if you need
20 to leave for a piece. Thank you.

21 We have an agenda, which is posted

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1 on the NIOSH website in the Board section.

2 Brad, it is your agenda.

3 CHAIRMAN CLAWSON: Appreciate it.

4 The first thing on the agenda that we are
5 going to discuss is activities since our last
6 Work Group meeting.

7 We did have a meeting, and it
8 wasn't really a Work Group meeting, but we got
9 together to review some documentation in
10 Germantown to be able to review some of the
11 classified documents that have been posted
12 there.

13 Also, SC&A and NIOSH have made
14 site visits since our last Work Group meeting,
15 and captured some more documentation. Does
16 SC&A want to mention anything on our data
17 capture that we have done, or NIOSH? Any new
18 information?

19 MR. ROLFES: Well, if Joe -- I
20 don't know, Joe, do you want to answer
21 anything?

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1 MR. FITZGERALD: Well, I think
2 after our session in Germantown, we noted that
3 we wanted to go back to the site, and we did.
4 We spent the better part of four days at the
5 site, did a couple of additional interviews.

6 This was all kind of focused from
7 our discussion in Germantown. So this was
8 definitely a very focused type visit. I
9 outlined some of the touchpoints in this two-
10 pager that we managed to get reviewed by DOE
11 and is cleared.

12 The detailed notes, I understand
13 from Mark, have made their way to Germantown.

14 So they are available to both sides when the
15 Work Group wants to take a look at them. So I
16 think that is probably the key thing, and all
17 that information that we did get and all the
18 notes from the interviews are at DOE,
19 Germantown.

20 MS. ROBERTSON-DEMERS: This is
21 Kathy Demers. I actually wanted to direct a

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1 question at Isaf. Now I know that, from
2 talking to Mike Lohr before he moved on, that
3 the classified documents from our trip to
4 Pantex were sent to DOE Germantown.

5 There were some unclassified
6 documents which we don't know the status of at
7 the moment, but the direction we provided to
8 Pantex and the subsequent direction we
9 provided to DOE were to provide us with a
10 redacted copy of our notes from Pantex.

11 I was wondering if you knew the
12 status of that and whether -- or if you could
13 find the status of that, because we need a
14 turn-around on those notes.

15 MS. AL-NABULSI: I will check that
16 for you, Kathy.

17 MS. ROBERTSON-DEMERS: Okay.

18 CHAIRMAN CLAWSON: Isaf, when you
19 send that out, could you also make sure that
20 the Work Group has a copy of that and so
21 forth?

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1 MS. AL-NABULSI: I will.

2 CHAIRMAN CLAWSON: Thank you very
3 much.

4 MS. AL-NABULSI: You are welcome.

5 MR. ROLFES: Yes, I think for our
6 updates, we went down and looked at the same
7 records that were pulled for both SC&A and
8 NIOSH. We made some selections, and as I
9 understand, those selections were forwarded up
10 to Germantown as well. We haven't had the
11 opportunity to review them in detail. We just
12 made some initial selections to look for
13 examples of the types of records that were
14 available to us.

15 We looked for some contamination
16 swipes, which we took a sampling of, made some
17 notes regarding how many samples there were
18 and which systems were involved. Let's see,
19 what else did we find? We had looked at some
20 earlier access registers, information on which
21 employees worked where, some of the early

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1 training records. I am trying to think what
2 else there was. There was both some dose rate
3 surveys and some contamination surveys that I
4 recall. Anything else that I haven't -- No?
5 Okay.

6 MR. CHEW: No.

7 MR. ROLFES: There might have been
8 some early --

9 MS. ROBERTSON-DEMERS: This is
10 Kathy Demers again. In one of the documents
11 we looked at, it was a log of hydroshots, I
12 believe, and there was mention of thorium in
13 one of those logs, and I think we need to look
14 into that a little bit more and see if that
15 shot actually occurred.

16 MR. ROLFES: Yes. We had spoken
17 with a couple of subject matter experts about
18 this, and there was one individual who had
19 said that it was possible that one had
20 occurred, but they couldn't pinpoint a date.

21 So what we have done in our Site

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1 Profile to account for that is to apply an
2 exposure from one shot which could have
3 resulted in exposure to thorium. The date
4 wasn't known by the subject matter expert or
5 whether or not it actually had occurred.

6 So we assumed that it did occur,
7 and had assigned an intake based upon some air
8 monitoring data from the area where it would
9 have occurred.

10 MS. ROBERTSON-DEMERS: Okay. Is
11 this a proposed assignment or is this actually
12 in the Site Profile as it exists now?

13 MR. ROLFES: This is in the Site
14 Profile that is actually being used.

15 CHAIRMAN CLAWSON: Is that it,
16 Mark?

17 MR. ROLFES: Yes, that is all.

18 CHAIRMAN CLAWSON: Okay. I
19 appreciate that.

20 MR. HINNEFELD: I had one
21 question, just to go back to your document

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1 that got cleared and got to us. Was that the
2 summary of the interviews? Is that the
3 document you are talking about?

4 MR. FITZGERALD: No. Actually,
5 what I wanted to do, knowing the lag time in
6 redactions we have experienced in the past,
7 was to at least get something out. So I
8 talked to the Pantex folks, said if I wrote a
9 two-pager, with the likelihood of that being
10 available for the Work Group, would that be
11 fine, and they said yes.

12 So what I did was just do the
13 highlights of what we found from the records
14 as well as what we gleaned from the
15 interviews, but these are just simply the
16 highlights. So there is a whole interview
17 summary -- actually, this is what Kathy is
18 referring to -- and other documents that we
19 requested that are in Germantown, apparently,
20 right now.

21 MR. HINNEFELD: But I mean, what--

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1 DR. NETON: It was an email with
2 twenty-eight --

3 MR. FITZGERALD: The memo isn't a
4 summary of the interviews. What it is, it is
5 just the touchpoints, the highlights of what
6 we learned while we were there. This is kind
7 of what we took from our visit. It was four
8 days. This literally is just the highlights,
9 and the details and the references of the
10 interview notes are in Germantown. I suspect
11 that will take time to get those redacted, in
12 our experience. This took four or five weeks.

13 MS. ROBERTSON-DEMERS: This is
14 Kathy, just to clarify something. The site
15 expert interview summary that was sent out to
16 the Working Group covers our interviews back
17 from the Site Profile review through, I think,
18 an August visit in 2010, the two interviews
19 that we conducted on this last visit --
20 actually, one was related to Pantex; another
21 was related to the Medina site. Those are in

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1 raw note form, and that is what was sent to
2 Germantown.

3 The process for getting interview
4 summaries reviewed by the interviewee is very
5 cumbersome. So it would probably be easier to
6 review our interview notes, if you want to
7 view something in a timely manner.

8 MR. HINNEFELD: Okay.

9 MR. FITZGERALD: I think the
10 interview that we did do at the site, which is
11 alluded to in our little memo, was a pretty
12 good interview. So I would certainly suggest
13 that, if it is there unredacted in Germantown,
14 it would be worth looking at. We found it
15 pretty useful.

16 MR. HINNEFELD: And that is the
17 one you did in -- since Germantown.

18 MR. FITZGERALD: Yes, since
19 Germantown, this last visit we spoke with a --
20 I think he was an operating engineer who was
21 involved with the systems that we are talking

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1 about, and went back far enough that he has
2 some pretty good perspective, and we touch on
3 some of what he said here, but I don't have
4 everything here.

5 CHAIRMAN CLAWSON: Stu, that was
6 our June 20th through the 24th down at Pantex.

7 MR. KATZ: Then just to clarify,
8 Joe, this two-page memo, is it summarizing a
9 longer written piece that sort of pulls it all
10 together that they are still clearing or are
11 there just the notes and the documents?

12 MR. FITZGERALD: No.

13 MR. KATZ: The primary documents
14 and then this?

15 MR. FITZGERALD: Yes. Literally,
16 we don't even have the primary documents
17 cleared such that we could even write a
18 summary yet. So I wanted to get something out
19 of it, given the short time frame, and this is
20 what we were able to get out of it.

21 CHAIRMAN CLAWSON: While we were

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1 down there, Joe talked to me, and he said he
2 was worried about us being able to get this
3 before the Work Group. So this is why he built
4 this two-pager for us to be able to go
5 through.

6 MR. FITZGERALD: And this has been
7 redacted. So, you know, the unredacted
8 version of this is at Germantown as well. So
9 there we go.

10 MR. ROLFES: I guess I just wanted
11 to point something out about travel right now.
12 We are, obviously, not going to be able to
13 get to look at those until about October
14 sometime because of travel restrictions right
15 now due to the end of the fiscal year. So it
16 is going to be a little delay, at least for us
17 to be able to go up and get our eyes on those
18 documents.

19 MR. HINNEFELD: We have a
20 particularly early travel cut-off. So our
21 travel plans have to be essentially made by

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1 now pretty much.

2 MEMBER BEACH: Isn't it the 15th,
3 this cut-off, for us I think it is?

4 MR. HINNEFELD: Yes, the hard and
5 fast on it is the 15th which, of course, is
6 Monday.

7 CHAIRMAN CLAWSON: Okay. The
8 first thing on the agenda here is the NIOSH
9 White Paper, the Pantex Bounding Uranium and
10 Thorium. I would like to note again, Mark,
11 that you received this over the weekend. It
12 seems to me to be kind of a trend, just right
13 before the Work Group here. It makes it very
14 hard for us to be able to respond or to be
15 able to even review these when we get these
16 this late.

17 If nothing else, I would at least
18 appreciate -- you know, the reason we put this
19 later on into August was to be able to give us
20 three weeks time after your paper was done to
21 be able to review it. So in the future, at

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1 least make a notification that we are going to
2 be late.

3 MR. ROLFES: Sure.

4 CHAIRMAN CLAWSON: I would
5 appreciate that, because it makes it pretty
6 difficult to be able to respond, but we will
7 do the best that we can.

8 Do you want to go over your paper
9 and explain it?

10 MR. ROLFES: Yes. I will just
11 give a quick summary. It is a seven-page
12 paper, sort of responsive to the memo that was
13 put together, and it is basically sort of
14 laying out some of the reasons that we feel
15 that our uranium intakes are bounding intakes.

16 Basically, the way we developed
17 our Site Profile, it basically relied upon the
18 300 bioassay samples that were collected in
19 the 1989-1990 time period, basically following
20 an incident that occurred where there was some
21 depleted uranium contamination which workers

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1 identified on their clothes and gloves.

2 They had basically been doing this
3 same operation for about the past five years,
4 and this operation, the contamination incident
5 sort of stopped operations and prompted the
6 site to take bioassay samples from about 300
7 people who could have potentially been
8 involved in this operation.

9 Basically, that five-year chronic
10 exposure period and those 300 bioassay formed
11 our basis in the Site Profile for dose
12 reconstructions. We went back and interviewed
13 -- as a result of the last Work Group meeting,
14 we went back and interviewed several
15 individuals from the site who had some
16 involvement in that particular incident that
17 occurred in 1989.

18 We asked them questions: If this
19 contamination incident involving uranium would
20 have been a bounding-type potential for
21 exposure. I think everyone that was involved

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1 agreed that it would, and they gave several
2 reasons, primarily due to the length of the
3 time that this particular weapon had been in
4 the stockpile, due to the size of the uranium
5 that was involved.

6 Basically, this particular series
7 had been stored in various temperatures,
8 humidities, areas, different places out in the
9 field for many, many years, up to 30 years in
10 the stockpile; and since the corrosion was
11 dependent upon the time that the components
12 were out in the field or the weapons were out
13 in the field, the internal potential for
14 exposure was really an issue with the oldest
15 weapon programs.

16 This particular program was one of
17 the ones that Pantex was aware of as having a
18 potential for uranium oxidation or corrosion
19 to develop, and that knowledge was likely
20 gathered as a result of the stockpile
21 surveillance program that was conducted,

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1 basically since 1958 forward.

2 Basically, we looked back at the
3 survey data as recorded in documentation we
4 have received from the site, and looked at the
5 contamination levels in the area where this
6 incident occurred, and the contamination
7 levels, I think I mentioned earlier, on the
8 workers' coveralls and gloves were in between
9 200 and 400 dpm per 100 square centimeters.

10 We also looked at the survey data
11 that was collected as a result of the
12 contamination that had built up in that cell,
13 then came up with various ranges of both fixed
14 and removable alpha contamination in there.

15 We looked at the air monitoring
16 data also, basically for all operations. We
17 had previously looked at some of the air
18 monitoring data. We had initially done the
19 analysis from the seventies through the
20 eighties, I think. That was when we had the
21 most of the data, but since that time we have

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1 identified additional air monitoring data from
2 the sixties.

3 So one of the things that we are
4 currently working on is updating our analysis
5 of the average air concentrations in the cells
6 and bays over time. It looks like we have
7 found, at least tentatively, an increasing
8 trend. It appears that the air concentrations
9 in the work areas in the earlier years appear
10 to be lower, and then as the disassembly work
11 ramps up in the seventies and eighties, it
12 appears that the average air concentrations
13 increase.

14 We have actually compared -- Now
15 these aren't breathing zone samples. They are
16 general area air samples which are taken from
17 a pretty small work area. We have actually
18 compared intakes from those air monitoring
19 results to the intakes that we have defaulted
20 to based upon uranium bioassay data, and we
21 are using the intakes developed from the

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1 uranium bioassay data to perform dose
2 reconstructions for Pantex employees, because
3 that results in a much higher intake and
4 resulting internal dose.

5 We have also asked the involved
6 subject matter experts if there were any other
7 weapon systems that had similar oxidation
8 concerns. There were a couple mentioned, but
9 none were of the magnitude of the B28 incident
10 that occurred in 1989.

11 We have also included a
12 description here which is slightly different
13 from our original approach in the Site Profile
14 to assign thorium intakes. I think we had
15 defaulted to a 40 DAC-hour thorium intake for
16 every year of employment at Pantex. We
17 actually have gone back and evaluated some air
18 sampling data from disassembly work, and came
19 up with a thorium intake based upon that.

20 I don't know if there are any
21 questions about my quick summary here.

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1 MS. ROBERTSON-DEMERS: I have a
2 couple of questions. You interviewed four
3 people.

4 MR. ROLFES: Correct.

5 MS. ROBERTSON-DEMERS: I think.
6 Can you tell us what their job responsibility
7 was?

8 MR. ROLFES: Yes. Let's see. I
9 believe two of them were safety engineers.
10 One of them was a health physicist. Well, I
11 guess you could call all three -- the two
12 safety engineers could also be called health
13 physicists as well, because they had
14 experience in radiation safety. They had
15 received radiation safety training, both prior
16 to their employment at Pantex as well as on
17 site at Pantex.

18 Then the fourth individual -- what
19 was his experience?

20 MR. CHEW: He is a health
21 physicist from Livermore, going down to

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1 support a specific program.

2 MR. ROLFES: Okay.

3 MS. ROBERTSON-DEMERS: Did you
4 talk to any of the field technicians?

5 MR. ROLFES: We have in the past,
6 not in this particular set of interviews. We
7 have definitely spoken with just about anyone
8 and everyone that we could think of that
9 might have had some kind of involvement in
10 this incident.

11 MR. FITZGERALD: Just as a follow-
12 up, you know, I knew (identifying information
13 redacted), but was he in charge of health
14 physics during the '89 incident, if you
15 recall?

16 MR. ROLFES: I believe so.

17 MR. FITZGERALD: He actually
18 managed the HP program. Where did
19 (identifying information redacted) fit in,
20 I'm a little sketchier on him.

21 MS. AL-NABULSI: Can we refrain

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1 from --

2 MR. ROLFES: Yes, I was going to
3 say, we probably shouldn't --

4 MR. FITZGERALD: Oh, okay. I am
5 sorry. It is in the documentation.

6 MS. LIN: But those are not PA-
7 cleared.

8 MR. FITZGERALD: The two
9 individuals' names were presumably health
10 physicists, but were they actually managing
11 the Pantex health physics program?

12 MR. ROLFES: From the very
13 beginning back in 1957, there was a group of
14 about nine people that had been given
15 radiation safety training.

16 MR. FITZGERALD: I know.

17 MR. HINNEFELD: What he just
18 tasked about the two specific people -- and
19 were they managing the health physics program.

20 MR. ROLFES: I didn't want to
21 answer specifically about somebody's job. I

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1 didn't think I was supposed to discuss --
2 Jenny?

3 MR. HINNEFELD: I don't know. Are
4 we allowed to talk about --

5 MR. KATZ: They were working in
6 their professional capacity.

7 MS. LIN: It really depends,
8 because if it is someone that has a managerial
9 position, then their privacy expectations are
10 less than someone who is not.

11 MR. KATZ: A line worker.

12 MS. LIN: So I think we should --

13 MR. FITZGERALD: I consider this
14 very pertinent to this particular -- because
15 the interviews are the basis -- they are part
16 of the basis for one of the key conclusions.
17 So we certainly can go back to Energy, but I
18 think who these people are is very relevant to
19 the context of that information provided.

20 That is kind of the -- that would
21 be the reasoning for wanting to know better on

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1 this, and we can certainly talk offline, but--

2 DR. NETON: What type of
3 information are you talking about?

4 MR. FITZGERALD: Well, let me just
5 give you my general perspective on this. We
6 discussed this issue at Mound as well, as you
7 recall, on tritide.

8 I am concerned on statements from
9 individuals who were in a management role for
10 the operations and/or the health physics
11 programs that these issues fall under, and I
12 am not saying that from the standpoint of
13 questioning their technical expertise,
14 credibility.

15 I have known a lot of these folks,
16 and they are the best HPs in the business, but
17 from my experience, it is difficult to
18 critique, in a sense, your own program that
19 you were, in fact, responsible for. During
20 the eighties and nineties -- and I think some
21 of us share that time frame -- the department

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1 and the health physics program in the
2 department were going through just dramatic
3 change, and there was a lot of realization
4 that practices that were perfectly fine from
5 the health physics standpoint, meaning that
6 from dose control, and we all made judgments,
7 what was important from a standpoint of dose,
8 didn't necessarily pass muster with the rad-
9 con manual or radiological controls in 54.11
10 and 835.

11 So rigor was imposed in the
12 system, and that is what led to a lot of the
13 changes in that very time frame that we are
14 talking about here. I think it may be
15 difficult to query the managers who were in
16 place at that particular time, and sort of ask
17 them about how the health physics program
18 addressed issues as they arose or ask for
19 judgments about the significance of this or
20 that, simply because -- and again, simply
21 because it was under their respective watch.

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1 So I think there is an implication
2 there. I am not saying that they would
3 purposely say anything that way, but I think
4 it is just that there is a tendency to not
5 want to publicly acknowledge necessarily that
6 it is something that maybe, because of the
7 culture, because of the mindset, because of
8 accepted practice for years and years that is
9 the way business was done, and all of a sudden
10 it wasn't the way it was done, and I think a
11 lot of folks at that particular time were
12 uneasy about how that reflected on their
13 position as well as their professional
14 judgment.

15 So I think that is the concern I
16 have. I had it at some other sites, because I
17 think it is a -- I have seen that many times.

18 So that is the reason I want to raise this,
19 that if we are asking less for objective
20 information, more of a subjective "what do you
21 think," or from your standpoint, you were in

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1 charge, was it as bad as it seemed or -- I
2 think we got to remember that the response is
3 going to be from the vantage point of somebody
4 who was responsible for either the operation
5 or the actual health physics program that was
6 in place.

7 DR. NETON: I completely
8 understand what you are saying, and I think it
9 has a lot of merit, but I think we can just
10 look at what the objective evidence is that
11 Mark just provided. It doesn't rely on people
12 making statements about the quality of the
13 program.

14 You have a situation where you
15 have 300 bioassay samples that were taken at
16 the termination, at the end of a five-year
17 campaign to disassemble these weapons that
18 are, I think, agreed by all that these were
19 the potentially dirtiest, most contaminated
20 weapons components out there.

21 This five-year campaign was, I

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1 think, orders of magnitude higher in workload
2 than any of the other previous years. Now
3 you've got a situation where you have 300
4 bioassay samples on workers who had worked
5 potentially five years with this material, and
6 urine samples are a long term integrator of
7 their exposure.

8 Now you take that integration, you
9 take the 95th percentile of that, and you come
10 up with 135 dpm per day intake. I think that
11 is a pretty good scenario to bound what these
12 workers were exposed to over that campaign.

13 MR. FITZGERALD: I am not speaking
14 to that information.

15 DR. NETON: -- but that is what
16 Mark was talking about, the bioassays.

17 MR. HINNEFELD: What the report
18 says, Jim, is that the conclusion for W-28
19 units had the highest potential for exposure
20 is based on information that you have got.

21 DR. NETON: But I think SC&A has

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1 agreed to that. I mean, I read in their
2 little statement that they agreed that W-28 is
3 the highest contaminated component out there.
4 I just read that in your write-up.

5 MR. FITZGERALD: The 28 -- let me
6 step back. What I am speaking to is a broader
7 background, including these interviews, that
8 speak to the significance of what we are
9 calling the incident -- I will get to that in
10 a minute, but the '89 "incident," and I am
11 going to use quotation marks on that -- as
12 being the most significant one. Okay?
13 Meaning the one that would be most notable
14 from the standpoint of the contamination
15 levels and the exposure potential and,
16 therefore, being a good, if not the best,
17 candidate for a bounding analysis.

18 DR. NETON: We are not doing that.
19 We are taking 300 urine samples, projecting a
20 chronic intake over a five-year campaign.
21 That is all we are doing. We are not using

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1 that incident to bound workers. We are
2 talking about a cumulative urinary excretion
3 of these workers at the end of a five-year
4 period, and how much could have been coming
5 out of their urine. How much could they have
6 breathed in, and be excreting that in their
7 urine at the end of a five-year campaign?

8 MR. FITZGERALD: Okay. So let me
9 just clarify, because this is a major change,
10 in a sense. I am just trying to make sure I
11 understand this then.

12 So whereas the Evaluation Report
13 certainly advances the '89 or maybe 1990
14 incident as the bounding bioassay results, you
15 are saying that that is no longer the case,
16 that you are not looking at '90 as necessarily
17 bounding. You are taking all the bioassay
18 samples, regardless of vintage, taking out the
19 firing pit, and that is going to be the basis
20 for assignment.

21 MR. ROLFES: Yes. All along in

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1 our Site Profile, we have been relying upon
2 this 1990 bioassay dataset, which was
3 collected as a result of this 1989 incident.
4 What Pantex did, they went back and identified
5 any workers who was involved in the W-28
6 program that was on site, and they took
7 bioassay samples from them. They were
8 analyzed at the Y-12 facility.

9 In addition to that, they had
10 brought in the Helgesen in vivo lung counter,
11 and performed chest counts on these
12 individuals.

13 We have always been using that
14 bioassay dataset for dose reconstructions.
15 Now in addition to that, we have gone back and
16 analyzed some of the earlier bioassay data
17 which was collected beginning in 1959, and we
18 have incorporated that into our intakes and
19 calculated the 95th percentile intake rate
20 based upon those urinary uranium excretion
21 results.

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1 DR. NETON: The use of it is
2 important itself. That is what drove them to
3 collect the urine samples, but we are using
4 the urine as indicator, which is not unusual.
5 That is what we do very often.

6 MR. FITZGERALD: Now, going from
7 that, you know, the ER, as I recall, when it
8 advanced using the 1990 urine data as the
9 bounding in this -- I guess that that is now
10 not the case for the approach, the new
11 approaches that take them all. Right?

12 It does make the case -- and of
13 course, this could have been done from the
14 get-go, but it does make the case that the
15 reason -- I don't know if I have this actually
16 cited here; maybe I do. The reason for the
17 1990 set of data being used is that it is the
18 oldest set of data that provides isotopic
19 determination of uranium alpha activity in
20 urine samples -- this is a quote -- "and has
21 significant data to perform statistical

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1 analysis."

2 So, certainly, the background is
3 that it has the data that is of quality and
4 number, number of samples, to provide
5 statistical validity. Then it goes on:
6 "because it is the most comprehensive set of
7 depleted uranium intake data found in the
8 Pantex records" -- I don't think we would
9 argue with that -- "and that it is of large,
10 known high quality, and that the intakes from
11 exposures are expected to be above normal
12 operating exposures."

13 I guess my question is: that
14 certainly points to -- and this is something
15 that we have looked at as well, that there are
16 earlier bioassay samples, but by virtue of the
17 fact they are earlier ones, the number of
18 those samples and the quality of those samples
19 would not necessarily be the same as or
20 approach the later ones.

21 I guess I would like to hear your

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1 views about how to handle -- quality was
2 raised in the ER as the reason for going with
3 the 1990 set. Now that you are going back and
4 taking those earlier datasets, why would that
5 not be a problem or why would that not
6 undercut the statistical validity of doing
7 that?

8 DR. NETON: Well, what ended up
9 happening, when you had the earlier bioassay
10 samples, you ended up increasing the 95th
11 percentile, but largely because of the
12 detection issue. So it is claimant favorable
13 to do that from bioassay samples, and there
14 would be a larger value because of the
15 detection limits which were with those sets of
16 measurements.

17 MR. FITZGERALD: But I guess the
18 part I am stumbling over a little bit, Jim,
19 is that -- and I go back to what the ER
20 originally said, is that what was attractive
21 about the 1990 incident was the 305 data

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1 points, that you get a lot of data points,
2 whereas in complete operating history before
3 that you maybe barely had 100 or something
4 like that, and they were of questionable
5 quality and some questions about even how they
6 were taken, those kinds of issues. But now we
7 are saying -- or you are saying that you can
8 go ahead and blend those in, and it will be
9 favorable, but I guess my question would be
10 how can we know that the distribution is going
11 to be a valid distribution when I think all
12 of us would agree that you are not going to
13 have captured perhaps the data points that
14 existed.

15 You know, you have 305 from one
16 incident, and you have 100 for 25 years.
17 Clearly, there is a disparity from that
18 standpoint.

19 DR. NETON: I would actually argue
20 -- I think the 1990 cases are an issue. They
21 were added in, I think, primarily because

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1 people felt they were added in. The number
2 goes up. It is claimant favorable. I didn't
3 look at the analysis. The data were weighted
4 based on the number available at that time
5 period. So the '90 data essentially probably
6 weighted -- it didn't weight it more heavily
7 than earlier days.

8 Again, I go back to the 1990 data
9 where you capture bioassays for 300 workers on
10 a campaign. It was by far the largest
11 campaign that disassembled this type of weapon
12 in the history of the plant, for a five-year
13 period starting in '84, ending in '89 --
14 orders of magnitude more, rather than the
15 surveillance activities which occurred all
16 preceding years. I don't know the numbers,
17 but orders of magnitude less.

18 So now you've got a bioassay
19 sample on a group of workers that worked on
20 those weapons for a five-year period, and
21 you've got their excretionary values, which is

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1 an integrator of all of the exposures that
2 occurred over that five-year period, and it
3 looked pretty good as a method to bound what
4 these workers were breathing in over that
5 operation.

6 MR. FITZGERALD: But how do you
7 know? How do you know? This is the question
8 that we have kicked around for over a year.
9 How do you know that this 19 -- or even three
10 or four or five-year campaign, or even within
11 the five-year campaign, that these results
12 are, in fact, bounding? I mean, it seems like
13 we come down to why are these 300 samples --

14 DR. NETON: Because if the workers
15 were working with the weapons and at the end
16 of five years you take a urine sample, and you
17 say what could that person have breathed in
18 over that five-year period and still have his
19 urine below that value, that is what we are
20 doing.

21 We are saying what possibly could

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1 have this person breathed in over five years
2 and still be excreting x, in the 95th
3 percentile, at that time point? You can't pee
4 out anymore than you breathed in.

5 MR. FITZGERALD: Yes, I understand
6 that, but I am just saying how do you know --

7 DR. NETON: You have 300 workers.

8 MR. FITZGERALD: How do you know -
9 - yes, you have 300 workers, because it is
10 1990 or '89, and the management woke up. The
11 workers complained, and you had literally the
12 kind of scrub that happens when you have that
13 kind of change. But I am just saying how do
14 you know -- and this again comes back to what
15 we have been talking about.

16 How do you know that the exposures
17 before that were, in fact, less than or the
18 same as the ones for which you have resolved
19 in the '90 incident?

20 DR. NETON: It has evolved in a
21 sort of a weight of the evidence argument. I

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1 think that the bioassay data are very small.
2 Now you take what we are assigning as an
3 intake, which ends up being 135 picocuries per
4 day, if it is a Type S material.

5 That equates to roughly 14 dpm per
6 cubic meter of uranium in the air for every
7 hour this person worked over that period.
8 Then you go back and look at other operations
9 involving uranium. You can go back and look
10 at Kingsley and Harrison, all these other
11 operations. What kind of airborne do you get
12 from handling derbies of uranium?

13 In any operation that doesn't
14 involve abrasive activities such as grinding,
15 welding, cutting, sort of shaping operations,
16 you get less than 20 dpm per cubic meter in
17 the air. Matter of fact, most often the daily
18 rate average is less than 10 for those types
19 of operations.

20 That is consistent with what we
21 are applying here. It is hard for me to

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1 fathom that, for a person doing an inspection,
2 pulling out whatever they are pulling out,
3 examining it, writing down a number, whatever,
4 putting it back, that you can generate more
5 than 14 dpm of uranium per cubic meter. It is
6 sort of a what are you doing kind of thing.

7 Well, I don't know how you can
8 sort of get this idea where you are going to
9 get higher than that.

10 The other thing is, if you look at
11 the lung counts with the Helgesen full body
12 counter, they are determined to be biased high
13 because of certain background correction
14 issues.

15 So the fact is, if you assign this
16 12 dpm -- or 14 dpm per cubic meter breathing
17 rate over a five-year period, at the end of
18 that period a person would have accumulated
19 somewhere around 12 milligrams of uranium in
20 his lungs. That bounds all the Helgesen whole
21 body count data, not ridiculously implausibly

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1 bounds, but it is higher than about a factor
2 of two than the highest person that was
3 measured with the Helgesen full body count.

4 That gives me some comfort, too.

5 MR. FITZGERALD: Yes, but we are
6 still talking -- I understand the comparisons
7 within this late eighties into the '90,
8 whether it is the in vivo counting or in vitro
9 counting. You have a contemporary picture,
10 which I don't have any problems with the
11 contemporary picture.

12 I am just trying to go back to the
13 25 years -- well, it is almost 30 years, but
14 before that and say, does that picture
15 basically take care of the handling before
16 that, and can we rely on this being the worst
17 case?

18 DR. NETON: The same weapons, as I
19 understand it, are being inspected. There is
20 a potential for oxidation to develop over
21 time, to indicate that have more loose

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1 contamination in the earlier period. Again, I
2 get to the campaign. The workload -- if your
3 workload is 100 times less over that entire
4 25-year period than we did in five years, I am
5 having trouble figuring out why it is not
6 bounding.

7 If I do 1,000 of something on the
8 same issue all the time, every day, and then
9 for the previous 25 years I do hundreds of
10 that, where is the increase in release rate,
11 the source term? I'm missing that.

12 CHAIRMAN CLAWSON: Because the
13 processes have changed.

14 DR. NETON: Processes changed.

15 CHAIRMAN CLAWSON: Processes
16 changed in how you are going to do it. In
17 1980, you saw a drastic change in procedures
18 and how you were doing things. In the earlier
19 years, you did not have any of that.

20 So what you are saying totally
21 goes out the window. That is that, if 1989

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1 back to 1957, it was all done the same way,
2 with the same procedures, the same processes
3 and everything else, then that could hold.
4 But in that time frame from 1958 onward,
5 processes changed, areas changed, how they did
6 it changed. Everything changed.

7 DR. NETON: What changed? Or is
8 that is not allowed.

9 CHAIRMAN CLAWSON: Oh, no, we can
10 talk about changes, but --

11 DR. NETON: I'm open to that.

12 CHAIRMAN CLAWSON: Just take, for
13 instance, how many weapons would be able to be
14 allowed in there, which that changed over the
15 years. How the processes go, and even after
16 '89 era and going into the '90 era, that is
17 when they started bringing in fume hoods and
18 everything else like that. They started
19 moving air different. They changed the cell
20 diagrams. They changed the air flows on it.
21 They changed the sampling programs on it.

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1 They changed everything, 1985 up to --

2 DR. NETON: Well, what you are
3 talking about are sort of -- the air controls,
4 I can understand, if they did something
5 special with air capture maybe, but sampling
6 and stuff, I just don't see that.

7 The process change, to me, is
8 something different. Now you are taking --
9 rather than just pulling it out, looking at
10 it, and doing it, putting it back, whether you
11 are abrading it, you are grinding it. You
12 have to have some way to generate airborne
13 activity. Without that, I have trouble
14 understanding why you are going to get large
15 quantities of airborne uranium, especially
16 since this particular sample in 1989 they had,
17 and it was less than one percent uranium. It
18 was mostly organic material, primarily two
19 percent lead.

20 MS. ROBERTSON-DEMERS: This is
21 Kathy. Can I ask a couple of other questions?

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1 First of all, where -- and, Isaf, please stop
2 me if there is a problem with these questions.

3 MR. KATZ: Don't ask a question
4 that you have any doubts about, Kathy.

5 DR. NETON: Why are you asking me?
6 I don't have a clearance.

7 MR. KATZ: No, but I am just
8 saying, Kathy can't ask -- when in doubt,
9 don't ask.

10 MS. ROBERTSON-DEMERS: Well, let
11 me see. I think I can ask a yes or no
12 question. Was there only one mod of the 28?

13 MR. ROLFES: We will delay our
14 response, but --

15 MS. ROBERTSON-DEMERS: Okay.

16 MR. ROLFES: We can answer that
17 pretty openly. There were different mods of
18 the W-28, and you know, the warhead was
19 actually used in several different platforms,
20 I guess, delivery platforms.

21 MS. ROBERTSON-DEMERS: Okay. Also

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1 --

2 CHAIRMAN CLAWSON: So there were
3 differences in how they were handled.

4 DR. NETON: Handling them how? I
5 mean, it is pulling them out -- I understand
6 that W-28 is the potential worst potential for
7 contamination, because it is not an alloy.

8 MR. HINNEFELD: There were other
9 non-alloyed. There were other non-alloyed
10 weapons.

11 MR. FITZGERALD: But the W-28 was
12 uncased, which makes it a particular problem.

13 DR. NETON: It seems to me there
14 is agreement that W-28 is -- and there was a
15 five-year campaign that disassembled it.

16 MR. FITZGERALD: Well, let me
17 touch on that a little bit, though. I don't
18 think I would disagree that the W-28 sort of
19 stands out. It was an uncased DU design, and
20 because it was uncased, the raw uranium would
21 oxidize almost immediately once it was in the

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1 air, and that would accelerate depending on
2 environmental conditions, as Mark pointed out.

3 But the one thing -- and I would invite you
4 to look at the interview we did do, and you
5 can certainly interview this individual again,
6 but we wanted to talk to somebody that was
7 intimately familiar with sort of the
8 operational aspects, not just health physics
9 but the operational aspects of the W-28.

10 It is pretty clear, you know, this
11 wasn't sort of an episodic -- you had certain
12 campaigns, and you had perhaps releases. You
13 had unusual occurrences, maybe incidences, but
14 this exposure got out.

15 In fact, it was a continuous
16 process of not only assembly but retrofits,
17 redesigns, surveillance -- trying to think of
18 some of the other words -- dismantlement,
19 modifications, and anytime you actually went
20 into the system, because this was uncased DU
21 there was a potential for exposure.

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1 Now unclear how much, but it was
2 pretty clear from the interview that, as time
3 went on, this was pretty prevalent in terms of
4 just having to deal with the fact that you
5 were essentially going to have this get out,
6 and you would be covered with this material.

7 Unfortunately, it is a very
8 subjective thing, because --

9 DR. NETON: But the material,
10 though -- you can have a lot of material, but
11 not all of it is uranium.

12 MR. FITZGERALD: Well, that is
13 another issue that we probed when we were at
14 the site, and --

15 DR. NETON: Well, I looked at the
16 analysis of the material.

17 MR. FITZGERALD: Yes, I did, too,
18 the spectral analysis. I included it in my
19 memo. I guess we have a point of disagreement
20 on that, because I think the results that we
21 looked at said it was predominantly uranium,

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1 and there was lead and other -- cadmium and
2 other materials that were also present. So we
3 can go back and look at that, but --

4 DR. NETON: Less than one percent.

5 MR. FITZGERALD: Apart from that,
6 because we are not talking about the --
7 talking about the amount of --

8 DR. NETON: See, that is worker
9 perceptions, how much material was being
10 spread around, and black material is not all
11 uranium.

12 MR. FITZGERALD: I know, but I
13 don't want to go down that path, Jim, because
14 this is not about the size of the source term.

15 I think we all agree there was an exposure
16 potential from DU, and whether it was one
17 percent, five percent, 20 percent or 30
18 percent, the question is can one come up with
19 a means to dose reconstruct?

20 So I am just saying, though, that
21 certainly by virtue of visible signs, there

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1 was, in fact, observable exposure potential
2 from the DU, from the uncased uranium that was
3 in the W-28 throughout this history of
4 dismantlement.

5 Now dismantlement wasn't just for
6 retirement. That is the point I am trying to
7 make. Dismantlement was for retirement,
8 surely, mostly toward the end, obviously, but
9 also for retrofits, modifications, and in some
10 cases the surveillance that was necessary.
11 You had to, in fact, go in there, and you
12 were, in fact, potentially exposed.

13 So that occurred throughout the
14 life history. Now I will grant you that it
15 was accelerated when they retired, dismantled
16 and retired. But I want to make sure it is
17 clear that there was dismantlement throughout
18 many of these years, and that was confirmed at
19 the site, that you had to do that.

20 MR. ROLFES: We all know that
21 there was an earlier disassembly and

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1 inspection. However, the numbers of
2 disassembly and inspections were very, very
3 small in comparison to the dismantlement
4 effort that we are using as our basis to
5 assign intakes.

6 We are using the 1984-1989 data,
7 which is basically the worst case scenario,
8 because those weapons have been in the
9 stockpile for the longest and have been
10 potentially corroding for the longest amount
11 of time, over an approximately 30-year period.

12 MR. FITZGERALD: I am just coming
13 back to the point, though, that we have this
14 wealth of data for this one point in time, and
15 we have various pieces of data for the
16 previous 25 years covering this operating
17 history of dismantlement that went on during
18 that time frame.

19 I don't want there to be a
20 perspective that, you know, these things sort
21 of stayed sealed in the system and were

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1 untouched. In fact, there was a lot of
2 retrofits going on, a lot of modifications
3 going on, and the system was very versatile.

4 So it went in and out of Pantex
5 for a long time. In fact, one thing that we
6 found and we are told that there were a number
7 of workers who spent most of their careers
8 working on the W-28 line, so to speak, in
9 terms of doing these various procedures. They
10 were most familiar with that particular
11 system. They stayed with that particular
12 system their entire career.

13 The other thing I want to raise --
14 and I raised this the last time, because it is
15 the source of the confusion, I think, and we
16 had a conversation that Stu was involved with.

17 I am trying to reconcile the point that was
18 made in the TBD for internal dosimetry where
19 there was a comparison of mean uranium
20 intakes. I think you know what I mean.

21 I think that was something that

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1 you were going to come back with and sort of
2 give us some perspective. Maybe I missed it,
3 but I didn't see it in the analysis, but I
4 guess I am still wondering about that comment.

5 It is the comparison of the mean
6 uranium intakes for '66 to '79 versus '80 to
7 '90, and it is the .375 d per m per day versus
8 the .188 d per m per day. Just trying to
9 understand if one took the earlier excretion,
10 mean excretion rates, compared them with the
11 later ones, it appears -- now the TBD notes
12 that these were pretty close.

13 On the other hand, one is a factor
14 of two higher than the other. So I just
15 wondered if you were able to find out more
16 about that.

17 MR. ROLFES: Right. That was a
18 valid point. So what we did to address that,
19 we went back and looked at that earlier
20 bioassay data, in addition to those 300 urine
21 samples that were collected, and that is what

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1 we are proposing to use now. We have
2 calculated the 95th percentile intake rate
3 from roughly 400 uranium urinalyses from 1959
4 up to 1990.

5 MR. FITZGERALD: So, basically --
6 I am just trying to understand. Basically,
7 this is in terms of a mean uranium intake for
8 that period, those are valid numbers, because
9 I haven't actually crunched all the data. I
10 am assuming that is a valid number.

11 That is kind of where I am going
12 back to what we talked about earlier. We can
13 talk about people's recollections and the
14 weight of evidence, but one difficulty and
15 challenge for this topic, when you get before
16 1990, is a lot of it is we get into weight of
17 evidence.

18 This one, actually, I thought, was
19 -- in terms of the issue, was pretty relevant,
20 meaning that it sort of compares the 1990s
21 data that was in the ER with the previous

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1 data, and again it just appears as a contrast.

2 DR. NETON: You take and assign
3 all workers an excretion rate that is equal to
4 -- greater than 95 percent of all the samples
5 that were taken of the 400. So you take the
6 95th percentile of 400 samples and say
7 everybody is excreting that -- is assigned
8 that excretion rate.

9 MR. FITZGERALD: And that is --
10 Maybe I am backing into what I thought we have
11 already discussed. Excuse me, if I am, but
12 that is where, I guess, I am thinking about
13 statistics. I am just thinking that, again,
14 we know we don't have a lot of data from the
15 early years, and that what data we do have you
16 are blending in, but it clearly suggests that
17 the data from the early years is higher, much
18 higher than the nineties data, and it seems to
19 take a 95th percentile of what you got, which
20 is these samples over the 20-25 years here and
21 there, because they just didn't do that much

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1 sampling, and the 305 high quality ones from
2 1990. You put them together in a pot, and you
3 basically say I am taking the 95th percentile.

4 It just seems to me that the data
5 is going to be skewed, if your distribution,
6 even with the 95th percentile, may not be
7 representative of the earlier time.

8 DR. NETON: Take 400 samples at
9 the site during this long time period, and
10 largely many of those were incident-based, we
11 are saying. You take the 95th percentile of
12 those. It is hard for us to imagine that
13 anyone was chronically exposed at a level that
14 would be greater than the 95th percentile
15 excretion rate. It is hard to fathom that
16 that would be the case.

17 MR. FITZGERALD: Well, that is
18 what I am trying to get to. It seems to me,
19 this is a -- it is a judgment call. It is
20 hard to fathom versus actually having a
21 representative set of data from the pre-1990.

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1 We are doing the best we can. We got what we
2 got. You got the data that you have to live
3 with. I am just saying that it seems to me
4 that we are proposing that we think the data
5 points that we do have from the early years,
6 understanding that they seem to be much higher
7 than the ones in 1990 --

8 DR. NETON: I would have to go
9 back and look at --

10 MR. FITZGERALD: -- it's a factor
11 of two.

12 MR. ROLFES: Just for one specific
13 laboratory, it was a factor of two higher
14 intakes based upon the bioassay data -- would
15 be a factor of two higher, and I think it was
16 largely based upon the laboratory who
17 conducted the bioassay and that analyses.

18 For example, in 1959, Los Alamos
19 National Laboratory actually had a pretty low
20 -- they were reporting less than -- I think it
21 was around one microgram per liter. Some of

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1 the independent laboratories might have been
2 reporting 5 micrograms per liter as their
3 minimum detectable amount of uranium in urine.

4 So it was contingent upon which
5 laboratory or commercial lab did the analyses.

6 MR. FITZGERALD: Mark, let me just
7 finish this. I understand that. I think you
8 do the best you can, but in terms of objective
9 data, not subjective data or weight of
10 evidence data, but objective evidence or data,
11 I think this is the hardest we have as far as
12 contrasting the information from 1990 with the
13 information from the earlier years and trying
14 to figure out whether it is feasible to use
15 the data that we do have and how we use it.

16 I think the first judgment that
17 was made in the ER was, does earlier data have
18 really enough of it necessarily, and it is
19 questionable quality, but we have these 305
20 gold-plated bioassay samples from 1990, and we
21 have a lot of confidence in that information

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1 and, oh, by the way, because this was a final
2 dismantlement campaign, say, so to speak, from
3 28, that we think that would be the number to
4 bound.

5 Now we are backing off a little
6 bit from that and saying, okay, why don't we
7 take in all this data. I am trying to
8 reconcile the original position with the new
9 position, saying, okay, I see where you are
10 going. And, certainly, we raised this
11 question about the earlier data, but I am
12 still having difficulty with wrapping that
13 earlier data with all those qualifiers and
14 throwing it into a distribution, taking a 95th
15 percentile, and feeling confident that it is
16 going to not miss the data that wasn't
17 collected from the earlier years and it is
18 making the best stab at coming up with a
19 conservative value, but it is not getting past
20 the fact that you don't have good data from
21 the earlier years. You do have data, but it

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1 is not good data, which essentially was the
2 context of what the ER said.

3 That is where I have a problem
4 with the approach. I think it is a better
5 approach, quite frankly, than just hanging
6 your hat on '90 and saying, you know, this is
7 the bounding, end of story. But I still think
8 the statistics and the quality of the data
9 that is part of this analysis is still
10 questionable, particularly given this
11 observation in the TBD that you have -- you
12 know, granted, laboratories sometimes do
13 slightly different analyses, but these are
14 National Labs.

15 So I don't think they are going to
16 be tremendously off, but you have a factor of
17 two, a factor of two difference between the
18 sixties and 1990. It is not 10 percent, 20
19 percent. It is a factor of two.

20 MR. ROLFES: The same lab can get
21 a factor of two difference in a sample on a

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1 day to day basis.

2 DR. NETON: I, frankly, am not
3 familiar with how some of that data looked in
4 the earlier time frame, whether it is based on
5 different detection limits that are driving
6 that factor. So in fact, I guess I can't.

7 DR. MAURO: This is John. Can I
8 jump in a little bit, just to collect my
9 thoughts and the way in which this is being
10 described. It might be helpful for me, but it
11 may be helpful for others.

12 Can everyone hear me okay?

13 MR. KATZ: We hear you perfectly.

14 DR. MAURO: What I am hearing, Jim
15 and Joe, is that you really have two
16 strategies that are being entertained. One
17 strategy is you have got a collection of very
18 good data in the later years, the '90s, and
19 the big question is, okay, can we use that
20 data somehow to bound exposures that may have
21 occurred decades before.

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1 One line of argument, which in
2 theory -- and, of course, these are where the
3 judgments come in -- could be used is that,
4 well, you have got the following weight of
5 evidence that said, yes, you can do that. One
6 is the process knowledge. That is your
7 knowledge of what went on in the past may not
8 be substantively different than what was going
9 on in the '90s.

10 Certainly, Brad has pointed out,
11 well, there were differences, and the degree
12 to which those differences are important, of
13 course, need to be aired, but that would be
14 like level one. Okay, process knowledge
15 arguments.

16 The second one that I heard is
17 that there are also what I call the Adley
18 arguments. This is that special study that
19 was done where lots and lots of data were
20 collected regarding uranium airborne dust
21 loadings for a whole variety of different

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1 operations, and one could argue that, okay, if
2 you look at the Adley data and all the
3 different kinds of things that were done, just
4 about everything you could think of, and if
5 somehow you could say, well, the kinds of
6 things that took place in the early years
7 somehow fit into the kinds of things that
8 Adley describes as operation type X as being
9 reasonably representative.

10 So in that regard, you sort of
11 have a surrogate data line of argument that is
12 separate from the process to actually look at
13 as a little bit different than the process
14 knowledge.

15 Then the third one is you have got
16 some early measurements that you are really
17 not that comfortable with, but they are there,
18 and those measurements somehow could be, okay,
19 if I have got those measurements, are they
20 compatible, consistent with -- not
21 incorporating or blending them into your 1990s

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1 data, but say, well, let me ask a question a
2 different way.

3 Here is my 1990s data. Is there
4 anything about the earlier data that tells me
5 that the 1990 data does not bound it or those
6 datasets are incompatible, just doesn't make
7 sense?

8 So what I am hearing is, if you
9 use what I call the non-blended approach that
10 I guess you originally used, and you are
11 making your case saying that the non-blended
12 approach -- go with the 95th percentile for
13 the 1990 data, and the way you validate that
14 for extrapolation back in time is through
15 compelling arguments along the lines of the
16 process knowledge, the Adley data, and the use
17 of the earlier measurements together.

18 If together those argue favorably
19 that, yes, the 1990 data are bounding, I think
20 you will have made a strong case. It sounds
21 like there are some questions regarding that.

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1 Now finally, and I will make one
2 more statement, the alternative approach is
3 the blended approach, and it sounds like that
4 is something new. I would have to say that
5 the blended approach is -- my first reaction
6 to it is that, if you have questionable data
7 about its representativeness, quality,
8 completeness and that sort of thing, and to
9 blend that into your 1990 data, I think that
10 is actually trying to mix two sets of data
11 that may not be compatible, and actually hurt
12 your distribution and the validity of the
13 approach.

14 So my sense right now from
15 listening to this interesting story is that
16 the unblended approach coupled up with an
17 argument that you can make your case on
18 process knowledge, Adley, and early
19 measurements, that would be the line of
20 approach that could be the most compelling,
21 whether it will hold up or not.

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1 What I am hearing is there is some
2 question regarding whether or not you have
3 those three levels of weight of evidence to
4 support your position.

5 The way I just characterized it,
6 is that a fair representation of where the
7 issues lie?

8 DR. NETON: I think so, John, and
9 I would say that I am in pretty much complete
10 agreement with you.

11 MR. FITZGERALD: Let me clarify,
12 though, that he just said that the blended
13 approach would --

14 DR. NETON: No, I agree. I have
15 problems with the blended approach as well.

16 MR. FITZGERALD: Okay.

17 DR. NETON: I think it is a more
18 compelling argument to take the 300 samples
19 that you have in a distribution and ascertain
20 what the chronic exposure could have been over
21 that five-year campaign with a much higher

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1 workload and a higher potential for oxidation,
2 and now you can go back and look at the
3 earlier years -- and John exactly said the
4 right thing.

5 First of all, does that make
6 sense, given what I know about -- the intakes
7 that we are prescribing based on that
8 approach, does that make sense, given what we
9 know about the vast knowledge of people
10 handling uranium itself?

11 We have a lot of knowledge of
12 people handling uranium pieces, derbies,
13 dingots, grinding, shaping, welding. If you
14 go back at the Kingsley and Harrison or the
15 Adley documents and it is consistent with that
16 in that right same range, then you have a good
17 feeling.

18 The only remaining piece then is,
19 as Brad pointed out, are there significant
20 process differences that would make that not
21 valid for extrapolation.

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1 MR. FITZGERALD: For the record, I
2 am kind of confused now, because what you are
3 saying basically is that the current proposal
4 of blending, you would agree, may not be the
5 way to go, but maybe go back to the original -
6 - use the 1990s data, but along the lines of
7 what John has outlined, make a stronger case
8 for the continuity of operations and those
9 kinds of arguments.

10 Okay, we will go back to --

11 DR. NETON: We are open for
12 discussion.

13 MR. FITZGERALD: I know, I know.
14 I am just trying to figure out where I am
15 standing, because --

16 DR. NETON: You have heard what I
17 think.

18 MR. FITZGERALD: Right. I am just
19 saying, though, that that takes us back to the
20 discussion we had in Germantown, which is on
21 the 1990s data being bounding as well -- well,

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1 bounding, because it would then envelope
2 previous exposure potentials and -- okay.
3 Well, all right.

4 DR. NETON: Now that I have heard
5 about the campaign and the magnitude of the
6 workload, I feel very comfortable with that
7 bounding unless there is something else I can
8 hear that convinces me that they were doing
9 something substantially different with these
10 inspections or disassemblies in the earlier
11 years that would generate more airborne than--

12 MR. FITZGERALD: That where I
13 guess I still have to reconcile -- we don't
14 have very much hard data to go with on the
15 early years versus '90, but we just talked
16 about the fact that what data we do have --
17 and it is highlighted in the internal
18 dosimetry TBD. The early data is a factor of
19 two -- the mean is a factor of two higher than
20 the 1990s data.

21 I know you are shaking your head,

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1 but I guess I just have trouble, and there
2 isn't that much that you can use to contrast.

3 DR. NETON: We would have to go
4 back and look at the distributions. I haven't
5 looked at those for a while. I apologize.

6 MEMBER SCHOFIELD: I have a
7 problem with that, too, because here is my
8 catch. We keep talking about airborne
9 contamination. We all know workers scratch
10 their heads, wipe the sweat away, things like
11 this. So you have this transfer of material
12 that is not necessarily airborne.

13 DR. NETON: Well, Phil, that is
14 true, but our model incorporates an ingestion
15 component as well. The ingestion is in there.
16 The fact is that a dose from ingestion is
17 much, much smaller than any dose that would
18 accrue via inhalation.

19 MEMBER SCHOFIELD: I would like to
20 know what basis you can say that, because you
21 could have both inhalation at that point, and

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1 you could have ingestion, too. It could enter
2 both pathways into the body.

3 DR. NETON: Well, we do, Phil, and
4 that is accounted for in the current approach,
5 but when you ingest something, a small
6 percentage of it is absorbed into the body.
7 Most of it goes out the other end. When you
8 inhale it, it is directly deposited in the
9 lung, and that is what ends up giving you the
10 larger component of dose. It is not ignored.
11 It is included, but it is in there.

12 MS. RAY: This is Sara Ray. Can I
13 ask a question?

14 MR. KATZ: Go ahead, Sara.

15 MS. RAY: Are you taking into
16 consideration the ongoing practice that is
17 well documented of burning the depleted
18 uranium? The fire department did it for
19 training purposes, and many, many items were
20 contained in the materials that were burned in
21 open pits, and this was dispersed into the

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1 air.

2 MR. ROLFES: Sara, this is Mark
3 Rolfes. What we are trying to focus on right
4 now is specific to the assembly and
5 disassembly operations conducted in the plant.

6 In addition to the bioassay data that were
7 collected at the site historically, we also
8 have bioassay data from, for example, the
9 firing sites and the burn grounds, which were
10 not included in this specific analysis or
11 discussion, but those data are considered
12 separately.

13 MS. RAY: Bioassay was not done in
14 the a timely manner on the Cell 1 incident.
15 That is fairly common knowledge.

16 MR. ROLFES: Sure. Yes, there was
17 a delay. We are aware there was a delay in
18 between the collection of bioassay data
19 following that 1989 incident. Well, you are
20 referring to Cell 1. So you are referring to
21 the tritium release, which is different than

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1 the depleted uranium chronic exposures that we
2 are referring to.

3 MS. RAY: That was also a common
4 practice, was the delay, because there were so
5 few people in the safety department, and the
6 operations were basically 24/7 during the
7 early years, especially during the war years.

8 MR. ROLFES: Since we know the
9 date that this incident occurred, and we have
10 the date that the bioassays were collected, we
11 consider that in the dose reconstruction
12 process; and if we don't know the date, for
13 example, we can take a mid-point between a
14 previous bioassay and the most recent bioassay
15 result and usually use the mid-point between
16 those two to estimate a reasonable and
17 claimant-favorable intake to assign internal
18 dose.

19 MS. RAY: Oh, you are using the
20 earlier, questionable data, from what you are
21 saying.

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1 MR. ROLFES: I'm sorry, Sara Ray.

2 Could you please repeat what you said? I
3 didn't catch that.

4 MS. RAY: Then you were saying
5 that you take an earlier point, a mid-point,
6 and a later point, and you are trying to come
7 up with a good figure using these. I was just
8 saying you are using the earlier data that is
9 questionable.

10 MR. ROLFES: Well, this is a
11 common practice in internal dosimetry. If
12 there is an incident that you don't know the
13 date of, and you have bioassay data that was
14 collected prior to the incident and bioassay
15 data that was collected after the incident, we
16 actually would use -- if we didn't know the
17 date that the incident occurred, we would use
18 the most claimant-favorable incident date to
19 interpret that bioassay data to assign the
20 highest possible and claimant-favorable
21 internal dose in our dose reconstruction

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1 process.

2 MS. ROBERTSON-DEMERS: This is
3 Kathy. I have a similar question along that
4 line. Do you have a solubility determination
5 for this uranium?

6 MR. ROLFES: Most uranium, if you
7 take a look at uranium metal, it is usually
8 Type M with a little portion of Type S. We
9 usually assume the most claimant-favorable
10 solubility factor based upon the target organ
11 in our dose reconstruction.

12 So if we have a lung cancer case
13 that we are reconstructing a dose for, we
14 would assume that the uranium is insoluble and
15 that it resides in the lungs a longer period
16 of time and results in a higher internal dose.

17 If it is a systemic organ, we
18 would choose something that is more soluble,
19 because it would deliver more dose to systemic
20 organs.

21 MS. ROBERTSON-DEMERS: So we are

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1 talking about bioassay collected one year
2 after the incident, and we are talking about
3 solubility Class M.

4 MR. ROLFES: What we are talking
5 about is the same as what we have had in our
6 Site Profile for the past several years. We
7 have bioassay data that was collected after a
8 1989 incident which would essentially bound
9 any potential exposure incurred by employees
10 for the five-year operation from 1984 through
11 1989.

12 DR. NETON: Actually, both
13 solubility classes or types were modeled, and
14 that is what can see in our report, Type M and
15 Type S.

16 MS. ROBERTSON-DEMERS: I guess my
17 concern is what is left in the urine after you
18 have waited a year to take the bioassay
19 sample?

20 MR. HINNEFELD: This is Stu --
21 what is in the urine a year after the

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1 exposure, regardless of solubility class --
2 well, particularly for more soluble types,
3 intermediate and soluble -- is the uranium
4 that is being decorporated from where it
5 deposited initially.

6 DR. NETON: But if you have
7 inhaled this material for five years and it
8 deposited in your kidney and your skeleton and
9 other depositional loci --

10 MS. ROBERTSON-DEMERS: We have had
11 this discussion before where there was a delay
12 in the bioassay sampling, and in order to see
13 the detection level at that time that it was
14 taken, you would have had to have taken in a
15 lot more for, say, Type M than Type S.

16 DR. NETON: Correct. That is
17 factored into the calculations. These are
18 modeled based on the standard ICRP metabolic
19 models, and that is accounted for.

20 MEMBER BEACH: Well, models aside,
21 I am still having trouble with the lack of

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1 bioassay data in the earlier years.

2 DR. NETON: But again, I wish
3 someone could give me an idea why the process
4 campaign in the five-year period was orders of
5 magnitude more workload of the same weapons
6 than what happened in the preceding years, why
7 that would not be a bounding scenario. What
8 happened differently to generate more airborne
9 on a daily basis than what would have been
10 observed in the five-year campaign?

11 MR. FITZGERALD: At the risk of
12 being repetitive, my answer would be it is all
13 subjective. You know, we can talk to people
14 and ask them their opinion as to the 30 years
15 of -- you are talking 30 years, three decades
16 of handling of this system and trying to get
17 them involved in more contemporary -- at the
18 very beginning. I was trying to find people
19 that could at least remember talking to
20 somebody who did do the early systems, but we
21 are trying to say that over 30 years, from

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1 1960 to 1990, the operations were normalized
2 such that you could backfit these values.

3 We have been looking for objective
4 information. I mean all of us have, actually.

5 I am looking at this as sort of a search for
6 something that would give this a hard edge,
7 other than the fact that we have to rely on
8 people's recollections and judgments and what
9 have you.

10 Again, I tend to find the only
11 thing that I can hang a hat on is the values
12 that were cited in the NIOSH TBD where, quite
13 apart from whether we think they were the same
14 or quite apart from whether you can't imagine
15 that they would be different, the mean
16 excretion rates for workers handling the W-28
17 in the early years was double the mean
18 excretion rates of the workers that handled it
19 in 1990. I can't get past that.

20 Everything else is conjecture on
21 our part to say could they have handled it

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1 that much differently or not. Now I guess I
2 am with Brad from the standpoint that over 30
3 years, the radiological controls improved to
4 the extent that -- you know, they were
5 vacuuming up the cells a little better, and
6 weren't letting things get too crapped up, and
7 there was that degree of diligence, but there
8 wasn't really a formal program until the
9 overhaul in 1990. But there was an evolution
10 where things got slightly better over time, as
11 there is in any plant. We are talking 30
12 years.

13 So if it was five or 10 years, I
14 would have less of a problem saying that there
15 was a reasonable chance the operations were
16 much the same, rad controls were similar, and
17 you could confidently apply that. But 30
18 years? That is almost the entire operating
19 history of the plant up to that point, and we
20 are trying to make that assumption in the
21 absence of any objective evidence.

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1 The only objective evidence we
2 have points to a factor of two difference in
3 what seems to be an indicator of exposure.
4 That is the inescapable point.

5 When I look at what is objective
6 and what is subjective, the objective evidence
7 is that mean average, and I don't think trying
8 to apply a 95th percentile is going to do you
9 any good, because you are looking at data that
10 is incomplete at best.

11 Yes, back in the early days they
12 certainly had no systemic bioassay program.
13 So we are assuming they kind of did bioassays
14 on the worst case. If they had a release of
15 some sort or somebody thought it looked pretty
16 messy in the cell, they did a bioassay sample,
17 but there was no regime there. It was a
18 judgment call, not necessarily even by an HP.

19 So how can we even know that a
20 95th percentile of that hodge-podge back then
21 would give you any reasonable assessment of

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1 conditions that would be comparable? To me,
2 it is apples and oranges. You are trying to
3 apply a statistical test of data that is
4 small, to begin with, and incomplete to a set
5 of data that we know is pretty darn good up
6 front.

7 So I am just saying, I don't know
8 where you go with that.

9 MEMBER BEACH: I was going to say,
10 Joe, isn't it true interview notes say -- you
11 interviewed an engineer. He said '89 wasn't
12 even the worst case. There was worse prior to
13 that.

14 MR. FITZGERALD: You know, we
15 wanted to raise that question. Irregardless
16 of the answer, I think, if this decision comes
17 down to trying to get people to make a
18 judgment call of was this worse or was this
19 worse or did you think the one before that was
20 worse, to me, it doesn't matter if you are
21 asking people to say, you know, 20 years ago

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1 was that '89 worse than all the ones that came
2 before?

3 DR. NETON: How are we going to
4 know whether '89 was the worst? We have
5 already talked about that.

6 MR. FITZGERALD: No, but I am just
7 saying that, you know, Josie raises the
8 question. I am just saying that I don't think
9 that part of it -- maybe we are in agreement
10 here -- that part of it matters, because we
11 are asking people to recollect and make a
12 judgment or a value call which is completely
13 nontechnical. Was it the worst? Who knows?

14 DR. NETON: The real question is,
15 is the '84-'89 work conditions and the
16 subsequent bioassay samples bounding of the
17 previous years? That is the question. That
18 is the question, not whether one is worse than
19 the others.

20 MR. FITZGERALD: But, you know, we
21 are using the values in '90 for that five-year

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1 period as the bounding question.

2 DR. NETON: That is all we are
3 saying.

4 MR. FITZGERALD: That is right,
5 and I am just saying that, in doing so -- and
6 you are couching it a little differently --
7 that we are still saying that the values from
8 that five-year period would be bounding,
9 because we can't imagine that the exposure
10 potential would have been higher than that
11 reflected in those bioassays.

12 DR. NETON: For various reasons.

13 MR. FITZGERALD: Yes, and I am
14 just saying that that is a weight of evidence
15 value judgment. I think we said that earlier,
16 and I am trying to reconcile that with the
17 only objective information that I have, which
18 is these values we keep going back to. I am
19 just making the case that I don't think doing
20 a statistical analysis of the early data to
21 compare it with the more contemporary data is

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1 going to demonstrate anything. We already
2 know that data is incomplete and --

3 DR. NETON: You are back to the
4 other aspect, which is what makes sense on an
5 empirical basis of what we know about handling
6 uranium. Can you generate more than 14 dpm
7 per cubic meter on a continuous basis from
8 this operation, knowing we have a lot of data
9 about experience with people dealing with
10 uranium in nonventilated situations, whether
11 they are inspecting something, they are just
12 moving it or shaping it.

13 You have sort of a lot of
14 empirical data out there. It gives you a
15 sense that you can only get so much in the
16 air, doing what we know was done on this
17 project.

18 MR. FITZGERALD: I would --

19 DR. NETON: And that binds up
20 nicely -- matches up nicely with the
21 urinalysis data.

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1 MR. FITZGERALD: I have two
2 problems with that. One, I think from NIOSH's
3 own hierarchy, before we turn to modeling or
4 modeling assumptions, I think we have to look
5 at what hard data exists. I think we have
6 mean excretion rates for both periods of time
7 in question.

8 So, actually, you know, it is the
9 only actual -- you call it empirical --
10 empirical information we have. I think that
11 has got to take precedence over modeling.
12 That is one issue.

13 DR. NETON: We are not modeling.
14 We are validating.

15 MR. FITZGERALD: Well, we are
16 using a set of assumptions based on, whether
17 it is Adley -- we are using those assumptions.
18 I am just saying that we have actual
19 measurements that were taken at the time.

20 The second thing I want to raise:
21 we talked about contamination surveys and air

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1 sampling, but I want to make sure that the
2 Work Group is reminded of a review -- and this
3 is on the SRDB, and I know you guys are
4 familiar with this -- by the Albuquerque
5 Operations Office.

6 They were rather chastened by the
7 Tiger Team when they went through earlier and
8 found a number of serious issues with the
9 internal program, but as you know, Tiger Teams
10 were compliance based. So they didn't go into
11 the actual practices as deep. So Albuquerque
12 ordered up a follow-on evaluation focused
13 specifically on the internal dosimetry program
14 and how it stood up with accepted practice.

15 I want to read just these
16 findings. I want to make sure we are reminded
17 of how things were from the air monitoring
18 standpoint as well as contamination survey
19 standpoint. This is a review that took place
20 October 30th to November 3, 1989, so very much
21 in the same time frame, reflecting backward on

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1 existing practice.

2 "First, no fixed air sampling
3 stations. Second, air monitoring system used
4 as a remote alarming monitoring" -- it is a
5 RAM system -- "and not for quantifying air
6 concentration."

7 So RAMs were designed to detect
8 accidental releases and not breathing zone
9 air, never intended to be representative of
10 air sample, never intended to be used to
11 assess dose. It was simply an alarming
12 system.

13 "There were, and are, no areas
14 controlled for potential airborne or surface
15 contamination except in the 12-44 Cell 1 where
16 the tritium incident occurred. No self-
17 monitoring and no chronic low level airborne
18 contamination monitoring. Self-monitoring was
19 not performed except at the waste compaction
20 operation in the B28 disassembly, and the
21 operating and inspection standard for B28 was

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1 not specific as to who performed personal
2 monitoring" -- this is what Albuquerque says -
3 - "or even if it is performed." So there was
4 some question as to whether or not there was
5 even monitoring performed.

6 "Use of nose swipes or special
7 surveys were at the discretion of the
8 radiation protection technician with little
9 written guidance from written procedures.
10 Evidence that this system was not adequate is
11 most obvious in a recent DU contamination
12 incident" -- which is the one that we have
13 been talking about. "This disassembly program
14 resulting in this contamination was in
15 progress for several years" -- as we know --
16 "before a full assessment of internal exposure
17 potential was initiated. The current
18 contamination monitoring program is not
19 adequate in type and frequency of swipes and
20 surveys to assess workplace contamination."

21 "Disassembly workers observed

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1 visible airborne black dust during the years
2 of routine operations before the incident."

3 The reason I am raising this is
4 that there was not a reliable contamination
5 survey program at the site. The air
6 monitoring results were based on data from the
7 RAMs themselves, and I think that was taken
8 into question by the site.

9 The cautionary note on using a lot
10 of this data pre-1990, before they actually
11 overhauled all these programs, is to keep in
12 mind that they were collected in a way which,
13 even at the time, the Albuquerque HPs and the
14 consultants from the labs that helped the
15 review found wanting.

16 That is the only context I would
17 provide on that one, is that I think we got to
18 be careful if we tag the air monitoring
19 results, survey results, and the contamination
20 survey results too religiously in this case,
21 because at the time they were found to be

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1 inadequate in terms of doing the job.

2 Just as a backdrop -- I read this
3 in your analysis. The thing I keep going back
4 to is I am not sure if you have qualified that
5 so called corroboration -- you are
6 corroborating, I think, some of the data --
7 with the fact that the programs under which
8 that data was collected were wholly deficient
9 as determined by Albuquerque in their review
10 at the time; because this was surfaced by the
11 Tiger Team. They felt they had to go in and
12 look at it, and they found it to be completely
13 inadequate. These are the findings. We have
14 the review.

15 I just want to make sure. It is
16 not every piece of data, but I am just saying
17 that in terms of the programs that were in
18 place to collect the data, I want to make sure
19 that that context is clear.

20 MR. ROLFES: I think you made a
21 couple of points there, and I will try to

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1 address them. The use of the data that was
2 collected in 1990 represents chronic exposures
3 that would have occurred over those past five
4 years. We have that data.

5 So it becomes a matter of
6 interpretation of the data how we completed
7 dose reconstruction, not if we completed dose
8 reconstruction.

9 Regarding the collection of data,
10 yes, there are certainly fewer bioassay
11 results in the earlier years. The first year
12 that they started sampling people for uranium
13 exposure was in 1959. I think there were
14 roughly about 12 or 15 individuals that were
15 sampled, maybe 10. I would have to look back.

16 Then we have some additional data
17 again in 1961. It is about every two years we
18 have a group of bioassay data that is
19 collected.

20 To get back to what you had said
21 about not having a reliable contamination

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1 survey program really bothered me, just
2 because of some of the things. Now I am
3 saying there may be exceptions to this, but we
4 recently came across this memo from 1959. It
5 is from Mason & Hanger-Silas Mason, basically
6 the people operating the Pantex plant.

7 They sent some correspondence to
8 the Y-12 plant, basically describing that,
9 basically, upon receipt everything that they
10 received is placed on brown paper and swiped.

11 Swipes are taken over the entire container
12 and the components themselves.

13 Basically, Pantex has stated, when
14 positive swipes were obtained and verified,
15 the container is cleaned; usually a deep
16 Kleenex is sufficient -- a damp Kleenex,
17 excuse me. You can barely read the writing
18 here.

19 There is an important point here.

20 It says, "We are committed to the Army
21 Ordnance Department to allow no detectable,

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1 removable contamination into the assembly
2 area." So, basically, in 1959 there is data
3 here showing the results of the surveys for
4 shipments to the Pantex Plant, and also a
5 pretty bold statement that says they have
6 committed to the Army that they will allow no
7 detectable, removable contamination into the
8 assembly cell.

9 So, basically, when components are
10 received on site, they are surveyed. If
11 anyone needs to clean them, it would be people
12 that are trained in radiation safety. Those
13 components would be placed in storage or
14 released to assembly as a clean component.

15 So work would be done to assemble
16 that weapon, and then that weapon would be
17 sent out to the military or put into the
18 stockpile.

19 Really, you know, the components
20 may have some removable contamination. There
21 are survey results showing 200 dpm removable

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1 of 1197 dpm. They range from 200 to 1500 dpm
2 here. But that --

3 MR. FITZGERALD: Mark, can I stop
4 you right there? Yes, I know we have had this
5 discussion before.

6 MR. ROLFES: This is new.

7 MR. FITZGERALD: Well, my point
8 is, absolutely, Pantex had a rigorous
9 contamination control program on the assembly
10 side. In fact, they had one mishap, which I
11 won't get into, where some contamination
12 crept in, and it was a big deal, and they
13 actually really had to clamp down even
14 further.

15 So I don't have any argument that
16 the rigor of the contamination control program
17 on the assembly side was there. You could not
18 deliver to the customer something that was
19 even slightly contaminated in Mel's lab,
20 because that would be not good.

21 On the disassembly side, they

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1 shared a blind spot -- I actually talked to
2 Mel about this at breakfast -- a blind spot
3 for depleted uranium that most of the complex
4 had. It was no fault of anybody. It just
5 was, from a dose standpoint, DU just didn't
6 figure very prominently compared with
7 everything else, and wherever low-enriched or
8 depleted uranium was handled in the complex,
9 it just wasn't afforded the attention and
10 rigor and formality that everything else was.

11 That is just the way it was, and
12 it wasn't given that attention until the late
13 eighties, early nineties when a consistent
14 standardized health physics program was put in
15 place by virtue of the orders and the Price-
16 Anderson regulations and the Tiger Team.

17 So that is when you started
18 getting a uniform approach and attention to
19 something that was considered -- remember my
20 old quote from Fernald when I was there in
21 '85: "the only way you get hurt from DU is to

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1 have it land on your foot." That was told me
2 by the plant manager. I was there to do a
3 health physics review. So you can imagine the
4 dissonance there.

5 So I am very familiar with --

6 MR. HINNEFELD: I remember that.
7 It was not the plant manager. It was actually
8 the assistant plant manager.

9 MR. FITZGERALD: Oh, okay. So I
10 am very familiar with the attitude for DU, and
11 I can understand perfectly why, for many
12 years, it just wasn't considered a big deal.
13 As long as you were pristine on the assembly
14 side, a little DU wasn't going to be a big
15 deal on the disassembly side. However, we are
16 talking about trying to figure out a means to
17 dose reconstruct.

18 That is where this blind spot
19 becomes sort of relevant to our issue, which
20 is, because they didn't consider it a big
21 deal, they just didn't monitor for it as they

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1 would everything else, and the data is sparse.

2 It doesn't become plentiful until 1990, and
3 through no fault of anybody. It is just the
4 way it was.

5 The dilemma for Pantex is it was
6 an assembly/disassembly plant, ostensibly
7 pretty damn clean. I mean, I never lost sleep
8 over Pantex and HP at headquarters, but from a
9 dose reconstruction standpoint, because of
10 that blind spot with DU, there is an issue.
11 There is a hole, and that is what we are
12 trying to resolve.

13 so I am not arguing about the
14 rigor of the program on the assembly side. I
15 think, on the disassembly side, you really
16 only had -- the big issue was the 28, and I
17 agree with that. You might have had some
18 issues with the others, but the 28, because of
19 the length of service and the unsealed nature
20 of it and the fact it oxidized like crazy, it
21 was a problem anytime you took it apart.

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1 So there was exposure, and for
2 some workers who handled and were on the line
3 for 30 years, it probably was not
4 insignificant. I don't have any idea what the
5 dose value would be, but nonetheless, it is a
6 real issue.

7 The only question is: how do we
8 reconcile the lack of the data, because very
9 little was collected before 1990, with this
10 question about how do we come up with a dose
11 reconstruction.

12 So I am only raising some issues
13 that are pretty clear but, yes, because there
14 wasn't much attention, the contamination
15 surveying, the air sampling and all the rest
16 just wasn't what it should have been or could
17 have been, and didn't really get changed until
18 you had these kinds of reviews coming out at
19 DOE that said, you know, we can't live with
20 that anymore.

21 I think we have to treat what data

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1 we have before that time period in that
2 context, that yes, we have data, but how it
3 was collected and the quality of the data and
4 all the rest of it comes into play. And
5 whenever we use that to corroborate something,
6 I think you always have to put an asterisk and
7 a footnote saying, yes, but you know, these
8 programs were not sufficient or adequate.

9 I am not saying it directly. I am
10 just quoting the review from '89 when the HPs
11 went in to look at it and said "voila." Now
12 they were suffering from the same thing
13 everybody else suffered. They could have said
14 "voila" a year or two before that. They lived
15 with the system as it was as well.

16 So the no flaw finding that, in
17 '89 the system woke up to the fact that DU
18 wasn't being controlled and surveyed in the
19 way it should have been, and that that is when
20 you started getting the data collection that
21 would provide this program the grist for dose

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1 reconstruction.

2 I guess I would feel differently
3 if we had more objective information that said
4 that the sixties and seventies, even though
5 they were 20-30 years before, didn't appear
6 any worse than the nineties. That would be
7 surprising because of natural evolution of
8 practice, but I can't get past this mean
9 excretion rate that is in the TBD nor the fact
10 that we have interviewed people that said,
11 yes, you know, there were steps over time
12 where things got tighter; they hired HPs and
13 technicians, and there was a little more
14 attention, use of vacuum cleaners. Things got
15 a little cleaner as time went on.

16 I think we are just operating in a
17 range of uncertainty about how much and when
18 and, to the extent that any of these values
19 are truly representative. I think that is
20 where we are. I don't think it can be
21 improved.

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1 The data that we have looked at in
2 the past year for uranium is the same data.
3 We haven't really added data -- I am talking
4 about the bioassays now. We haven't added to
5 that data, and the other data, whether it is
6 air sampling or survey, I guess I would
7 question based on this review and findings on
8 the quality of that information and whether it
9 would be used to corroborate your bioassay
10 issue.

11 MR. BISTLINE: This is Bistline
12 speaking. Could I interject a few thoughts at
13 this point?

14 CHAIRMAN CLAWSON: Sure, Bob, go
15 ahead.

16 MR. BISTLINE: In support of what
17 Joe is saying, the objective information that
18 we have, the differences in the values, the
19 mean values, and then going back to the
20 subjective side of it, in the interviews and
21 so on that took place, we certainly see a

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1 great deal of difference in the process that
2 was taking place in the eighties, the late
3 eighties and early nineties versus what took
4 place earlier on.

5 As you interview all of these
6 different workers, and none of which were
7 linked in any way, you get the same story
8 about coming out black, black on their faces
9 and blowing their noses and having black in
10 their handkerchiefs, and working without
11 gloves and respiratory protection in some of
12 the early cases.

13 I think it behooves us to look at
14 some of the processes and the information that
15 is available through the interviews that have
16 taken place. This goes all the way back.
17 This process engineer that we interviewed
18 talking about how, in modifications those
19 units were taken apart all the way down to the
20 bare bones, and that there was a great deal of
21 contamination present.

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1 I think it is important that NIOSH
2 gets to look at the interview notes that were
3 taken with a couple of these people and the
4 process and the information that they had to
5 provide to us. Thank you.

6 MR. HINNEFELD: This is Stu
7 Hinnefeld. Bob, are those interview notes --
8 have those been cleared and redacted or are
9 those all in Germantown? Even if some of them
10 aren't cleared and redacted, it would be
11 better to look at the unredacted.

12 MR. BISTLINE: Yes. I think those
13 are still in Germantown, and I don't think
14 they have been redacted as yet, and I think
15 that is what Kathy was referring to, is that
16 we really need some of those redacted notes,
17 Jim, but certainly, if you could go back to
18 Germantown and look at the interview notes, I
19 think it would be very, very helpful.

20 MR. FITZGERALD: Well, maybe Kathy
21 can clarify one more time, because the set of

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1 interview notes up to August of last year, as
2 I understand it, were, in fact, redacted and
3 are available. Now the unredacted versions
4 are available as well in Germantown. The
5 interviews since then are the ones we have
6 just done, and they are in Germantown, and
7 they haven't been screened yet, in unredacted
8 form. But there is all the Site Profile review
9 interview notes and summaries have been
10 reviewed and cleared, have they not, Kathy?

11 MS. ROBERTSON-DEMERS: Yes, and
12 that includes SEC interviews up through, I
13 believe, August 2010 also.

14 MR. FITZGERALD: And were they not
15 forwarded?

16 MS. ROBERTSON-DEMERS: They should
17 have been distributed to the Working Group.

18 MR. FITZGERALD: Yes, they were
19 distributed to the Work Group maybe a month
20 ago. They finally came out of the DOE system,
21 and those are actually -- there is a lot of

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1 interviews in there that support what Bob is
2 saying, because the only thing that is lacking
3 is the most recent ones. But the bulk of the
4 ones that Bob is referring to are in that
5 whole group that has now been transmitted and
6 available.

7 So you can look at it now in
8 redacted form, and you can certainly look at
9 the unredacted version in Germantown.

10 DR. MAURO: This is John. Could I
11 also jump with a very quick statement? With
12 that concept of a framework for decision
13 making, the kind of things that we are talking
14 about earlier about weight of evidence, et
15 cetera, seems to me what Bob just described is
16 extremely important in terms of, if there is
17 interview information that says, gee, things
18 were going on here that are quite unusual and
19 our understanding of the processes and
20 activities and the contamination may not be
21 what we think they were, that goes toward our

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1 ability to use the 1990 data to extrapolate
2 backward.

3 I think we are really getting to
4 the heart of where the weight of the evidence
5 lies, and looking at that information, and if
6 that information is indicative of unexpected
7 circumstances that might have existed at the
8 time -- I am presuming this black dust that
9 you are referring to is indicative of a
10 substantial amount of uranium contamination --
11 that perhaps is incompatible with the
12 understanding of the place and the fact that
13 perhaps the 1990 data may not be appropriately
14 applicable or bounding for the early years.

15 I think this gets to the heart of
16 the matter. Anyway, I thought I would add
17 that in as a framework for decisionmaking.

18 CHAIRMAN CLAWSON: I appreciate
19 that. I would like to at this time at least
20 take a 15-minute break. We have all got
21 submarines in our eyes. So, Ted, if we could

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1 just mute it, we will come back in 15 minutes.

2 MR. KATZ: So we will be back --
3 folks on the phone, we will be back around
4 eleven.

5 (Whereupon, the above-entitled
6 matter went off the record at 10:47 a.m. and
7 resumed at 11:00 a.m.)

8 MR. KATZ: All right. We are
9 reconvening after a short break, Pantex Work
10 Group, and we are talking about DU and related
11 matters.

12 CHAIRMAN CLAWSON: With
13 enthusiasm.

14 MR. KATZ: With enthusiasm, yes.

15 CHAIRMAN CLAWSON: I just wanted to
16 make sure that everybody had -- John made a
17 statement there at the very end. We wanted to
18 make sure that, if there was anybody that
19 wanted to respond to that or, if there were
20 questions of what he was saying, to be able to
21 have the opportunity to discuss that.

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1 MR. ROLFES: Yes, I had a couple
2 of points, I think, back to what Joe had
3 mentioned. I know Joe made a few points, and
4 then Bob Bistline made some points, and then
5 John Mauro did. I was trying to wait
6 patiently to, you know, discuss some of the
7 data that we do have available to us that
8 would point as indicators as to exposure
9 potential.

10 Getting back, I think I mentioned
11 earlier on, we had done an analysis of the
12 average air concentrations within the cells in
13 bays. Basically, our initial analysis from
14 about three years ago evaluated 4300 air
15 sample results.

16 We looked at the average air
17 concentration changes over time. We had some
18 bits and pieces of missing information that we
19 now have been able to fill or are in the
20 process of filling, and are using those just
21 as a comparison. You know, we certainly

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1 realize that they are not breathing zone
2 samples, but there are air samples which are
3 taken.

4 We have got monitoring stations
5 set up around the cell and the two bays and
6 equipment rooms in that area, looking at
7 potential airborne releases. We have looked
8 at basically the highest concentrations that
9 were measured and compared those to the
10 intakes that we are assigning based upon
11 uranium bioassay data.

12 The uranium bioassay data related
13 intakes are more representative of actual
14 workers' exposure, and they are also higher,
15 but that higher is likely a result of the
16 minimum detectable amount of the analysis and
17 our interpretation of that data and the
18 assumptions of chronic exposures over time.

19 That data, as we have said
20 previously, was collected during the time
21 period that work was likely the highest

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1 potential for exposure to uranium, because
2 that particular operation, which was conducted
3 in '84 through '89, those were some of the
4 oldest weapons in the stockpile. They had
5 some of the largest uranium source term in
6 them, and the uranium that was there was the
7 most likely type of uranium, we will say, to
8 oxidize, potentially.

9 We can go back -- there are some
10 things that were said about the depleted
11 uranium, that nobody cared about it. To say
12 that, really, is not true.

13 Even if someone says the only way
14 that uranium could hurt you is if it dropped
15 on your foot or head, I am sure that was said
16 jokingly, but the data that are available to
17 us -- for example, from the Fernald facility,
18 if you look at the actual data that were
19 collected pre-1985, we are looking at hundreds
20 of thousands of uranium urinalyses that were
21 collected at the Fernald facility.

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1 So it still appears to me that
2 there was a concern about exposures to
3 depleted uranium, because we have got quite a
4 bit of data showing that they were monitoring
5 workers for potential exposures.

6 The monitoring -- we can get into
7 discussions of why the monitoring was done and
8 such, but we have a Fernald Work Group
9 tomorrow.

10 Let's see. Looking back at some
11 of the historical reports and incidents that I
12 have seen, we have reports of incidents that
13 occurred at the site where uranium was
14 detected. There were elevated air samples.
15 They were investigated. The materials
16 involved were evaluated, and bioassays may
17 have been collected as needed.

18 That was determined based upon
19 surveys of the cells, surveys of the work
20 areas. There are numerous documents that we
21 have available to us in that research

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1 database, as well as health physics appraisals
2 from the earlier time period which indicate
3 that personnel exposure control and
4 radioactive contamination control are
5 excellent.

6 So there is good and bad. We have
7 discussed this before. You have to take a
8 weight of the evidence. You have to look at
9 everything that we have available to us. We
10 have looked at swipe data from the 1990-
11 forward period. We have looked at -- I think
12 there is about 90,000-something swipes, which
13 would show a bounding quantity of
14 contamination build-up during a disassembly
15 period.

16 If a component is clean when it is
17 built into a weapon, the bounding quantity of
18 contamination would be observed during the
19 disassembly period, and the data that we have
20 reviewed, if you look at those 93,000 samples
21 in that characterization database that is on

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1 the K: drive for the Work Group, you can see
2 that the majority of the swipe data indicates
3 no removable contamination.

4 In addition to those electronic
5 data that we have available to us, we had the
6 opportunity to review some earlier swipe data
7 from the 1980s on site at Pantex, and I think
8 we came up with an estimate that there is
9 probably an additional 100,000 to 150,000
10 surveys covering about 30-something or 40
11 different weapon programs.

12 So we have got a pretty broad
13 scope of survey data that shows this is what
14 the worst case scenario observable removable
15 contamination could be from this particular
16 part of this particular program.

17 In looking at the data, at least
18 our quick perusal, it appeared that the worst
19 case scenario was about 1 dpm per square
20 centimeter of the removable alpha
21 contamination. We are talking about a very,

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1 very small amount of removable contamination
2 at the worst case that could be observed.

3 These can be used for dose
4 reconstructions. However, we do not use these
5 for dose reconstructions at this time. We are
6 using this as just another piece of
7 information, in addition to the air monitoring
8 data, to say, hey, is our bioassay data in
9 line with what we would expect.

10 Based upon my review, it looks
11 like it is right in line with what we would
12 expect, and that the approach that we have
13 taken in dose reconstruction, by using the
14 95th percentile, we feel that it would bound
15 potential worker intakes.

16 CHAIRMAN CLAWSON: Ted, I just
17 wanted to make sure the other Board Members
18 and Sara were on the line. Phil, are you on?

19 MEMBER SCHOFIELD: Yes, I am.

20 CHAIRMAN CLAWSON: Okay. Bob?

21 MEMBER PRESLEY: Yes.

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1 CHAIRMAN CLAWSON: Okay. Sara,
2 did you make it back on?

3 MS. RAY: I am back on. Can I
4 make a comment, Brad?

5 CHAIRMAN CLAWSON: Sure.

6 MS. RAY: You know, I have been
7 involved with this for five-plus years, and it
8 sounds to me today, from what I am hearing
9 Mark say, that he has changed his mind about
10 the way that he wants to do it.

11 We are at a time now when all of
12 this should start to be finalized. I have
13 always felt like -- what I am hearing is the
14 records aren't there. I just heard Mark talk
15 about accident -- incident reports. I have
16 seen the listings of them. There are 10-year
17 gaps. Yet all of this information, to him,
18 provides -- to use Joe's term, I think it is
19 objective evidence.

20 I heard Mark talk about
21 interpretation. It is the interpretation.

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1 That is subjective, to me. I have a real
2 problem with the flip-flopping, and it seems
3 to me that there is a certain amount of
4 grasping at straws.

5 The original guidelines, and I
6 have a copy of them on my computer, to NIOSH
7 before any of this started was that dose
8 reconstructions should be attempted, but
9 should not be the cost that would ever be paid
10 to a claimant. This has obviously not been
11 done.

12 The person that all of this is
13 hurting is the individual worker. It sounds
14 to me today, listening, possibly that Mark has
15 not even read the interviews. The worker
16 history is the only, if you will, true history
17 of what has happened, and yet the claimants
18 have continually been left out of the process.

19 They are the really important part
20 of it, and it is just frustrating to me what I
21 am hearing today, and I think NIOSH could be

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1 made to abide by the same rules that we are or
2 a claimant is.

3 There are guidelines, and we
4 follow them. We can't keep changing mid-
5 stream. This cannot go on for another five,
6 too.

7 I appreciate you all listening. I
8 would like to thank Brad and the Board and
9 SC&A for what they are doing, but I am highly
10 disappointed in what NIOSH has done and is
11 attempting to do now. We have got to have
12 constraints on what they are allowed to do.
13 So thank you.

14 CHAIRMAN CLAWSON: Thank you,
15 Sara. I appreciate that.

16 MR. ROLFES: Sara, this is Mark
17 Rolfes. In regard to the interpretation, I
18 don't remember the context of what I said
19 interpretation of the data, but I think what I
20 was referring to: when we interpret the data,
21 if there is uncertainty involved in that data,

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1 we use that uncertainty to the benefit of the
2 doubt of the claimant during the dose
3 reconstruction process.

4 MS. RAY: Well, and another thing,
5 everything I am hearing you say, Mark -- it
6 disagrees with what the Tiger Team said. It
7 disagrees with the Ahearne Commission. There
8 were several groups that looked at all of
9 this, and it sounds like an attempt by you and
10 others possibly -- and I don't mean this
11 accusatory -- but we cannot rewrite history.
12 We have to take history as it is.

13 If you are saying that the DOE
14 reports are wrong, well, then you are taking
15 their record. You can't have everything your
16 way, so to speak. If one record is good,
17 another is good.

18 I just have a real problem with
19 all of this.

20 MR. KATZ: Thank you, Sara.

21 MR. ROLFES: One other thing I

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1 wanted to speak to. We also did hear, Sara --
2 this is Mark again. We also did hear from the
3 workers the exact same concerns that SC&A
4 heard. We are not saying that worker
5 exposures did not occur. That is not what we
6 are saying.

7 We are saying that we have enough
8 data available to us to enable us to bound
9 what the worst case exposure potential could
10 have been, and that is what we would use for
11 dose reconstruction, if we had no data for
12 that individual.

13 MS. RAY: I question whether or
14 not that is what you need to be doing. I
15 doubt if there was just one incident. You
16 have one incident that you are -- one or two
17 that you are dwelling on. But what about all
18 of the other ones that were never recorded?

19 I know you are saying that the
20 number that you are using is higher, and it
21 would be -- you know, higher than a worker

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1 could ever have over that same period of time,
2 and I appreciate the science, that type of
3 science. But I think you are not looking at
4 past practice.

5 There was not one weapon in there.

6 There were multiple weapons. So everything -
7 - it is a different scenario, I think, than
8 what you are looking at. I think you are
9 trying to box it into a neat little box, and
10 there was no neat little box in the 1960s.

11 My experience also -- the comment
12 about the letter, those letters are often
13 written -- the 1959 letter -- in response to
14 something that happened. That wasn't just out
15 of the blue: you are doing a good job. There
16 was some reason that that letter was written,
17 from my experiences in the complex.

18 I just really question that you
19 will be able to go back and, honestly, for
20 every single worker who had the potential for
21 exposure, that you can go back and do a dose

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1 reconstruction that would be fair to all
2 workers using 1989 and 1990 operational
3 processes and records.

4 I don't think that you can take a
5 car today and compare it to my 1955 Chevy
6 pickup. I don't think records on my Navigator
7 are going to, in any way, compare to my
8 pickup. It is just not possible.

9 CHAIRMAN CLAWSON: Thank you,
10 Sara. Joe, did you want to respond to
11 anything?

12 MR. FITZGERALD: Yes. Just taking
13 off from Sara's comment, for the record, we
14 are trying to talk about the normalizing of
15 operations, and we had this conversation one
16 or two Work Groups ago about the fact that
17 trying to take 1990s information and -- I
18 won't use the word back-extrapolate -- but use
19 it backwards to cover or to bound previous
20 operations is troublesome, and for 30 years it
21 is very troublesome.

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1 Sara's comments brought to mind
2 one particular issue, which I think would have
3 a real bearing on this. In the earlier years
4 of Pantex, they had three, four, five units in
5 a bay at once, handling them in close
6 proximity, and you had, just by virtue of
7 handling multiple units, a much higher
8 potential for source term in that area. That,
9 over time, got restricted. They just wouldn't
10 allow you to have that many.

11 Now it got down to three, two, and
12 I think there were some procedures where it
13 would limit it to one, but that is just one
14 example of evolution of operations over that
15 time frame which would have had a fairly
16 significant bearing on available exposure
17 potential, particularly of, say, the Rolf W28s
18 being handled, which was quite plausible.

19 There are other issues in terms of
20 controls and what have you, but those are the
21 kind of issues that we are grappling with when

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1 we talk about normalization of operations in
2 terms of making this kind of backfit, if you
3 will, a viable and plausible way of doing it.

4 I am not going to get into the
5 programmatic issues. I started jotting them
6 down, Mark, but we covered this at the last
7 Work Group meeting, and covered it over about
8 six or seven hours.

9 So all I would say is that
10 programmatically, we can't rely on the
11 programs, the procedures, the good intentions,
12 what is written down as the basis for what
13 actually happened, and whether or not that
14 actually did happen. I don't want to get into
15 that discussion again, but I think at the last
16 Work Group meeting we spent a lot of time on
17 outlining why this program, I think, can't
18 place reliance on program assurance and
19 programs implementation. So on those issues,
20 I would stand pat.

21 Now in terms of the completeness

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1 and adequacy of the air sampling data and the
2 contamination data, we talked about that.
3 Certainly, that data is there. I would only
4 raise the question of how complete and valid
5 it is as you go back before 1990, by virtue of
6 the Albuquerque findings. In fact, they found
7 them to be unreliable. The findings are right
8 there, the basis for the findings are right
9 there. So I will leave it at that.

10 I don't want to go back there, but
11 I still have problems using those calibration
12 points for corroboration, just because the
13 programs have been found to be flawed by
14 contemporary HP views at the time.

15 I guess, in general, my take on
16 the whole thing is that anytime, I think, this
17 program is confronted with a back-
18 extrapolation, taking relatively current data
19 and using it backwards -- as, I think, John
20 pointed out earlier, we have to be extra
21 careful about whether or not one can normalize

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1 across those operations.

2 The longer the time period, the
3 more care I think we have got to take, that in
4 fact, you can make those assumptions. I gave
5 you one example of a major change at Pantex
6 where it went from multiple units to one or
7 two, just simply because that was the change
8 in practice over those 30 years.

9 There are other issues, I think,
10 that we have raised in the past. That is one
11 aspect, but I think also, Jim and I had this
12 colloquial discussion back in Santa Fe about
13 how one approaches exposure potential, and it
14 was a good discussion.

15 We were trying to figure out --
16 Pantex was actually part of the discussion --
17 this notion that you have an exposure
18 potential. How does one walk that down? I
19 think there was agreement that one had to
20 approach it from a quantitative standpoint.
21 Certainly, one can look at programmatic issues

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1 and other issues, but not as a first order,
2 that one started with a quantitative analysis.

3 That is required by the regulations.

4 Then one could go on to perhaps
5 looking at secondary information such as air
6 sample data and what not, and then even so far
7 as to look at source term information in terms
8 of characterizing operations.

9 That is kind of how I looked at
10 uranium -- this issue here, you know, starting
11 with what was actually quantitative, objective
12 information, and we have the bioassay samples,
13 clearly, and we have some of the comparisons
14 that were done, clearly.

15 I think where we stand today is
16 that we have a set of data in the 1990s that
17 is being proposed as a means to bound previous
18 exposures, and I, for one, can't see any way
19 to demonstrate that that necessarily bounds
20 previous exposure scenarios that go back in
21 time, when you might, in fact, have had four

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1 or five W28s in one cell area or you might
2 have had a handling protocol that was less
3 rigorous, maybe fewer surveys by rad techs,
4 because they didn't have very many rad techs
5 in the beginning, but the notion that one can
6 normalize over 30 years and claim that the
7 operations and the controls were essentially
8 bounded by the measurements in 1990, I just
9 don't really find credible.

10 With the additional quantitative
11 information -- again, quantitative
12 information, comparing the sixties mean
13 excretion values with the 1990s mean excretion
14 values, and having a factor of two -- I think
15 that raises a reasonable doubt that, in fact,
16 you necessarily had the same exposure
17 potential between those two periods of time.

18 So that is where we are, and that
19 is where we have been for quite a while. I
20 guess at this stage, what I am thinking about
21 is: Is it likely that the quantitative data -

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1 - I mean the hard data -- is going to be
2 improved at this point? I don't think so. I
3 think we have what we have.

4 We have gone back to the site and
5 dug more, but in terms of the hard data, the
6 bioassay data -- I am talking about the
7 hierarchy of what we look at. We got the
8 bioassay data, for what it is. We have a
9 comparison of that data. We have looked at
10 the operations.

11 I think there is a reasoned sense,
12 and I understand what Jim is saying, but I
13 could make a compelling argument the other
14 way, that the operations did shift over time,
15 and that you did have a changing picture in
16 terms of exposure potential.

17 Now a lot of this is subjective.
18 I think we are, at this point, moving away
19 from what is objective, but to looking at the
20 operations and saying that, yes, there were
21 these changes in practice that would have

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1 altered the potential.

2 Nonetheless, I think you look at
3 that when you try to back-extrapolate, but I
4 think there is some real doubt as to whether
5 the operations remained the same for 30 years
6 such that you could use the bounding analysis
7 that NIOSH is proposing.

8 So without any additional data, I
9 don't see how this really changes. I think
10 the Work Group just has to decide, based on
11 what it has heard, where it wants to go with
12 this particular issue. I don't think it is
13 going to be improved by going back to Pantex
14 or interviewing more people.

15 I think we have interviewed
16 everyone we need to, and we have dug up all
17 the data that we need to. It is what we got,
18 and that is what I would say at this point.

19 MR. ROLFES: Can I please respond
20 to a couple of clarifications?

21 I think earlier on in the meeting,

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1 Joe, you had indicated -- this is Mark Rolfes.

2 You had indicated that the assembly
3 operations, you believed, were clean. You
4 said you had no concerns about assembly
5 operations.

6 MR. FITZGERALD: Relatively
7 speaking.

8 MR. ROLFES: If you consider the
9 number of units that are being assembled in a
10 certain area, they are all clean units early
11 on. The only issue that would be of concern
12 would be external dose rates in that area,
13 primarily. There wouldn't really be any
14 additional concern over an assembly of several
15 units in one area.

16 The internal exposure --

17 MR. FITZGERALD: Put an asterisk
18 on that, by the way.

19 MR. ROLFES: Yes. We need to keep
20 that in mind, but the most significant
21 contributor of concern for dose reconstruction

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1 would be the external dose rates in the area.

2 That is for assembling clean, new parts.

3 There is not going to be an exposure potential
4 in the air.

5 If you take a look at the mean
6 excretion values from the 1960s versus the
7 1990s, you have to use caution, as we said on
8 the break, because there are data that are --
9 I think you might have just cited one
10 particular lab analysis from one year of the
11 several years that we had data in the sixties.

12 So I would have to look back at
13 the mean excretion rates for the other years
14 that we have data as well to compare those to
15 the 1990s data. The other indicator --

16 MR. KATZ: Excuse me. Whoever is
17 trying to break in, Mark is speaking right
18 now. Thank you.

19 MR. ROLFES: The other indicator -
20 - if you look at the history of disassembly
21 operations, disassemblies -- you know, there

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1 were other plants that were involved in work
2 prior to 1975. We had the Iowa Ordnance
3 Plant, as you mentioned in your memo, both the
4 Clarksville and Medina facilities. Pantex
5 wasn't the only one in town that was involved
6 in operations involving nuclear weapons.

7 Really, if you take a look at the
8 operations conducted at Pantex, it is really
9 not until the 1970s forward that you really
10 see the true increase in the number of
11 disassemblies that are being conducted, and
12 that is all part of the picture that you need
13 to consider in looking at exposure potentials.

14 To use data from the 1985-1990
15 period to estimate what intakes could have
16 occurred back in the 1970s is not too far of a
17 stretch.

18 So those are all parts of the
19 things that we would need to consider in
20 determining whether or not we could bound
21 potential intakes to workers.

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1 MR. FITZGERALD: Well, a quick
2 clarification. The W28 did come back.

3 MR. ROLFES: Right.

4 MR. FITZGERALD: I acknowledge
5 that it also went back to Medina-Clarksville,
6 but it did come back to the Pantex for
7 dismantlement for any of these reasons we have
8 talked about, mods, retrofits. So that did
9 happen in the sixties.

10 In terms of looking at the other
11 excretion rate comparison, I think this is
12 something that we talked about in Germantown.

13 I was kind of hoping that we would be able to
14 put that issue to bed, because that was one of
15 the issues we focused on specifically and
16 talked about specifically.

17 At this stage, I think, yes, one
18 could do that, but quite frankly, we have a
19 valid comparison. It is actually cited in the
20 TBD, and as I said earlier, we can dress it up
21 and do all kinds of statistical analyses of

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1 that data, but as a group that data from
2 average standpoint, mean standpoint, comes out
3 appreciably higher than the later data.

4 I think that is what the Work
5 Group has and has had, and it kind of bothers
6 me, because we have had this issue, and we
7 have looked at this issue, and it has been out
8 there for five years, and I think that
9 comparison is a valid comparison and, even if
10 we were to find another lab that didn't find
11 an appreciable difference, we still have that
12 difference there.

13 So I don't know where to go with
14 that, but I just wanted to make that comment.

15 CHAIRMAN CLAWSON: I appreciate
16 that. I want to make a comment now, because -
17 - and please forgive me. I am just -- I am
18 not a political speaker, and I am not very
19 good with a lot of words, but I will tell you
20 something that I have got a lot of issues
21 with, and that is, number one, depleted

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1 uranium showed up at Pantex way early, back in
2 the 1954, '53.

3 And like from our interview, it
4 was a problem child when it came on site,
5 period. They used to have to clean it up.
6 They were having to make special acids to be
7 able to even clean it up to be able to get it
8 to be able to even be -- two HPs in 1989
9 covering all the assembly and disassembly.

10 So that is telling me you have two
11 rad-cons that are making sure the assembly is
12 put together clean and goes out clean. Like
13 Sara said, that letter that they had was
14 probably because they had an "oh, oops" --
15 that is two rad-cons. We are not even looking
16 at that.

17 Right after that, in 1990 time
18 frame, they totally shut Pantex down, because
19 they did not -- they were not meeting the DOE
20 guidelines or anything else like that, and
21 since that time they have quadrupled to -- the

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1 last I heard was 80 rad-con at Pantex.

2 So from 1989 back they had to --
3 and I call them rad-cons. They could have
4 been called rad-safe or safety or so forth.
5 The issue that I am getting into is working in
6 the industry myself, I have got to be able to
7 look at the changes that we went through from
8 1950 to 1989, which were astronomical.

9 There is no way we can be able to
10 do what we did back there. Our production
11 rate has also decreased a lot, because we are
12 not able to do what we used to be able to do.

13 Every time I hear this -- and we
14 are going around and around and around in
15 circles -- we are at the same point that we
16 were five years ago, really. You know, we
17 have gathered a little bit more data. We have
18 got a little bit more understanding, but I
19 think the term that somebody told me a long
20 time ago: no matter how much lipstick you put
21 on a pig, it is still a pig.

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1 To me, no matter how much we go
2 around on this, we are going to be back to the
3 same thing. There is not really good data out
4 there, and for me to be able to take data and
5 go back with it, I think, is totally wrong.

6 In all the sites -- and this is no
7 disrespect to the health physicists or anybody
8 else that was there -- we see this complex-
9 wide. We see it at Hanford. We see it at
10 Idaho. We see it at Oak Ridge. We see it at
11 all.

12 Most of them didn't worry about
13 depleted uranium or uranium. It wasn't the
14 big player. It was plutonium, and that is
15 what they looked at. Later on in the years,
16 we learned more, and we come to find out that,
17 yes, there are other players in the game.

18 I think of the letters that were
19 stated, and the one that pops into mind is a
20 letter that was sent out that the importance
21 of monitoring workers, and we do our best, and

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1 we won't let anything happen. Just like Sara
2 said, it was after an incident, because the
3 one that I read, for me, was after 13 of us
4 went down to the whole body count with
5 uptakes.

6 They take it seriously. It is
7 just the way they do business in there. My
8 point to this is it has been five years, and I
9 don't think that we are going to come -- I
10 don't think we can go out and find any more
11 data. I don't think that we can interview
12 anybody more.

13 So as the Work Group Chair -- and
14 I hope that the rest of the Board Members are
15 listening to this -- right now I would like to
16 take a vote to be able to push this to the
17 full Board, as we have slated for August.

18 I feel that I have done everything
19 I can to get to the bottom of this. I feel
20 that we have gone through every rock. I feel
21 that we have -- NIOSH and SC&A have done a

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1 fabulous job of trying to determine what we
2 can do, but I think basically, what it comes
3 down now is to the Board.

4 So what I would like to do is I
5 would like to propose that we move this to the
6 full Board from the time frame of 1958 to
7 1991, due to the inability to be able to
8 deplete -- or depleted uranium to the Board.

9 MR. KATZ: Brad, can you just -- I
10 don't want to interrupt too much the
11 discussion of your motion, but can you put
12 some flesh on the justification for the time
13 period you are giving?

14 I mean, Joe just made a statement
15 earlier today about the -- what I have heard
16 is '84 to '90 period, that that data was very
17 strong for that period. You are proposing a
18 period that goes to '91, which goes well
19 beyond.

20 CHAIRMAN CLAWSON: Actually, in
21 looking at it, the other weapons, depleted

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1 uranium actually showed up at Pantex in the
2 early 1950s, but the data that I found down
3 there is that they were dealing with depleted
4 uranium in 1958. I can't get into what they
5 were doing, but it was part of the process
6 with the HE, and this is what we came up with.

7 Matter of fact, I went through
8 thousands of files of the shipments to Medina
9 and Clarksville from Pantex.

10 MEMBER BEACH: Can I interrupt? I
11 think that '58 is probably a good starting
12 point. I think the question is the later
13 years. So why did you pick '91?

14 CHAIRMAN CLAWSON: Because '91 is
15 -- and correct me if I am wrong, Mark, but the
16 petitioner stated '91, and I believe that was
17 right. Sara, was it '91?

18 MS. RAY: Yes, it was. It was
19 1991, and that was chosen because major
20 changes were made in rad safety. Rad-con
21 manuals came about in '92-'93. That was '91,

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1 yes.

2 CHAIRMAN CLAWSON: And I can't
3 change that date.

4 MR. KATZ: No, but that is the
5 petitioner's date, and I'm asking about is
6 Joe's statement.

7 MR. FITZGERALD: Let me clarify,
8 and I tried to write this a little bit in the
9 memo I sent. I guess I sent it to you, Mark.
10 We wanted to kind of focus on that
11 particular question, because I think there was
12 some uncertainty when we met in Germantown
13 about some of that. I think the key aspect on
14 the beginning part -- well, first of all, the
15 key aspect is the W28.

16 I think we have all agreed. I
17 don't disagree with Jim's comment that we
18 believe that 28 in particular offers this
19 exposure potential above and beyond the other
20 systems.

21 Looking at the 28, we were looking

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1 at dismantlement. Dismantlement is, in a
2 sense, the opportunity for an exposure
3 potential. Now you could argue about the
4 degree of exposure potential, which means the
5 degree of oxidation and the handling practices
6 and all that, but it is something that one
7 can't easily establish, because, again,
8 records aren't explicitly clear on exact
9 handling and the degree of oxidation.

10 We did interview an engineer who
11 pointed out that with raw, uncased depleted
12 uranium, it oxidizes almost immediately upon
13 contact with air, which means even if you're
14 at the fabrication facility -- I think it was
15 Y-12 -- you start getting oxidation, and that
16 just worsened over time.

17 So even that issue is not clear,
18 whether it took a year or two to get to a
19 point where you would get a reasonable amount
20 of airborne contamination or not. I don't
21 have that specific data.

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1 So we just focused on: when did
2 you have a clear record of dismantlement at
3 Pantex of the W28, and that is where the '58
4 figure comes in, because that is the first
5 dismantlement which was associated with
6 surveillance.

7 Now we tried to go further, and I
8 can't really talk about it. We tried to go
9 further to figure out what the exposure would
10 likely have been, but I think dismantlement is
11 a good trigger point, that you basically -- If
12 you have dismantlement, you have an exposure
13 potential to this uncased depleted uranium,
14 and we leave it at that.

15 We don't have a good means to
16 characterize how much was airborne at the
17 time, which is partly what we have talked
18 about. It is just not easy to do that because
19 of the lack of air samples and bioassays, but
20 we can point to that as being the first
21 dismantlement.

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1 Now going forward from there, I
2 think, as Sara points out, after this incident
3 and after the Tiger Team, very clearly in '91
4 Pantex completely revamped its health physics
5 program and its control -- particularly its
6 control program over the W28 and other units
7 in terms of contamination control and all of
8 these issues that we have talked about.

9 So the endpoint would be a
10 completely different system in terms of
11 routine bioassays, the whole nine yards. So
12 beginning with the 1990s bioassays, they
13 started getting a different regime.

14 MR. KATZ: Joe, I guess the thing
15 I just want to understand is you made a strong
16 statement earlier that the '84 to '90, all
17 that dosimetry that was done for the 300
18 individuals and so on is a very strong basis
19 for --

20 MR. FITZGERALD: That was Jim's
21 comment, I think.

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1 MR. KATZ: No, but you were
2 saying you would be fine if all the data were
3 that, and that your problem was with the older
4 data. You said pretty clearly in this that
5 the data at that later period, all that data
6 that was developed on the 300 individuals,
7 that was good data, good methods and all that,
8 high pedigree, excellent, so that the
9 dosimetry that would be produced based on that
10 would be good, and that is in '84 to '90
11 period. So I am just trying to understand
12 what the basis is for going to '91.

13 MR. FITZGERALD: Well, because the
14 actual sampling in terms of the workers didn't
15 occur until 1990. I am just saying, we were
16 talking about the fact that the campaign was
17 five years long, but until the workers
18 complained, until the management investigated,
19 and until they ordered all those bioassays for
20 305, it didn't become apparent that you were
21 having this degree of contamination and

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1 intake.

2 So as far as when the practice was
3 actually changed, it wasn't changed until
4 after the incident. This was all -- the
5 samplement took place in 1990. It wasn't done
6 across the five years. It was only done in
7 1990. Okay?

8 Now because of the nature of the
9 uranium uptake, you could assume that those
10 bioassays would tell you about the exposure
11 over that time frame, but in terms of when you
12 started having good data across the board for
13 the workforce, that would be when they were
14 doing bioassays for all the workers that were
15 potentially exposed, not just simply the 300
16 that they singled out for the incident.

17 MR. KATZ: So I misunderstood,
18 because I thought the argument was that that
19 was the worst exposure -- at least
20 contemporaneous to the '84-85 period forward,
21 that would have been the worst exposure, and

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1 then you are saying, yes, and their dosimetry
2 that they based on '90 data but covering that
3 period would be good for that cohort that was
4 exposed from '84 to '90. Those are the most
5 exposed people, and your dosimetry on them is
6 good, and that is a bounding analysis for '84
7 to '89.

8 So are you saying that there are
9 other people in Pantex not involved in that
10 incident that would have had higher exposures?

11 MR. FITZGERALD: No, no. But I am
12 just saying there's other people that were
13 exposed, but for that cohort, those bioassay
14 samples would have been representative. Yes.

15 MR. KATZ: So then -- okay. I was
16 just trying to get -- so you have a cohort
17 that is the worst cohort at Pantex from the
18 period '84 to '90, and you can do their dose
19 reconstructions, so it would seem to me that
20 you are arguing that, really, the SEC period
21 would end at '84, because from '84 forward you

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1 have this worst cohort, and you have good
2 dosimetry on them. So that is a bounding
3 analysis for Pantex, starting in '84. Or not?
4 I'm just trying to understand the argument.

5 MR. FITZGERALD: The only issue in
6 my mind -- That is a plausible approach. The
7 only issue in my mind is you have other
8 workers that weren't a part of that cohort,
9 that one would have to establish that the 305
10 were the worst cases.

11 I haven't heard that discussion,
12 but I would assume that, as far as this
13 incident, they would have been. The reason I
14 am hesitating is because you have a five-year
15 period where you have workers that may have
16 come in and out of the program.

17 I don't know if that 305 would, in
18 fact, represent the bounding cohort. I would
19 think intuitively it might.

20 MS. RAY: May I say something?
21 The DOE was not happy with Tiger Team. The

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1 Ahearne Commission was appointed because of
2 the Tiger Team report.

3 MR. KATZ: Sara, we understand
4 that, Sara, but --

5 MS. RAY: They would not have
6 thought of that as good data. I think any
7 ending date has to come after 1990.

8 MS. ROBERTSON-DEMERS: This is
9 Kathy. I think what we have been saying all
10 along is that that data might be bounding, but
11 we need to see the objective evidence that it
12 is bounding for all situations all the way
13 back to 1958.

14 MR. KATZ: No, no. Kathy, that is
15 mixing another issue. We are talking only
16 about for the period from '84 forward whether
17 that is bounding, Kathy.

18 MS. ROBERTSON-DEMERS: Right,
19 right, and like Joe was saying, we have to
20 demonstrate that that is bounding.

21 MEMBER SCHOFIELD: Ted, this is

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1 Phil. I would like to throw something in on
2 that. Okay, we did have these people that
3 were assayed based on that one incident. What
4 we don't have is a lot of the crafts, a lot of
5 the guards, other people that may have come
6 through that area, picked up a dose, who were
7 not on that program, who were not assayed.

8 As we know from their testimony --
9 we went through Pantex -- this is a strong
10 possibility, that this contamination could
11 have been spread. It was spread by people on
12 their hands, on their booties, clothing. So
13 that does not bound everybody at the facility
14 saying everybody that got a dose was covered.
15 You have so many people going through these
16 areas that are not on a bioassay program. You
17 have a lot of people falling through the
18 cracks, and I could not vote and say, yes,
19 that is great.

20 No, there are too many people in
21 that time frame who, until the Tiger Team came

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1 in, ripped them up and said you are going to
2 change this program from top to bottom. Those
3 people -- you don't know who went through that
4 area in every case.

5 They did not keep logbooks of
6 everybody that went past those cells. They
7 did not keep track of every person who came in
8 and out of there.

9 CHAIRMAN CLAWSON: Thanks, Phil.
10 Also, too, I think when Phil or when Joe and
11 Mark were discussing the 1989 data, I think in
12 his reference, yes, it is more scientifically
13 proven than the early years, because,
14 remember, we were talking about the earlier
15 ones.

16 MR. FITZGERALD: I think that it's
17 a valid question as to whether or not the
18 values, and they are credible values that were
19 taken, would in fact envelop those workers
20 that worked on the W28 during those specific
21 years.

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1 The reason I hesitate, even though
2 I think it is a valid concept, is in terms of
3 solubility, and I think NIOSH can answer this
4 maybe at the table now. In terms of
5 solubility class and what have you, would you,
6 in fact, be able to bound just the 305 workers
7 and any other workers?

8 To answer Phil's question, until I
9 -- and if you saw my memo, I did go into some
10 details to other worker categories that would
11 have been implicated, because you just can't
12 confine contamination. There's other people,
13 guards, maintenance people, who become
14 exposed, but I would think -- this is sort of
15 an open question -- that the actual hands-on
16 operators would be bounding, because they
17 would be most exposed continuously; whereas,
18 maybe some other worker categories would be
19 exposed, but not quite as directly and
20 continuously.

21 Now, guards are a question,

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1 because they clearly would be doing
2 surveillance, but, again, I think that could
3 be addressed as well.

4 So I think it is a valid question.

5 I don't think we have actually answered that
6 specifically, and the Board is certainly
7 within its scope to feel that, even though
8 that might be an open question, one could feel
9 that you can make the argument up to '84
10 without any reservations. Certainly, NIOSH
11 can answer the kind of questions that Bill,
12 Kathy and myself would raise about the data
13 versus the four or five years of that specific
14 campaign.

15 We have not, as a Work Group,
16 focused on that, but think it would be
17 something -- given the later time frame, I
18 think it could be answered relatively
19 straightforward, but not keep the Work Group
20 from moving forward on the pre-'84.

21 MR. KATZ: But just to clear about

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1 my role, because I am not trying to engage in
2 the substantive. This is the Work Group's
3 business with its technical staff, not mine.

4 I just want to make sure that,
5 when Brad gives his recommendation to the
6 Board, that the basis that he provides lines
7 up with his dates. What I interpreted you as
8 saying earlier, really, I understood
9 differently than you are pitching it now,
10 which is fine, but which is why I said what I
11 said, to be clear.

12 MR. FITZGERALD: Yes, I think the
13 '84 -- I mean, the bioassay data taken in 1990
14 reflecting the campaign conceptually might be
15 usable for that campaign, but there are a
16 number of questions that come to mind as to
17 whether or not that would be bounding for that
18 campaign, whether or not the 305 workers
19 represents the most exposed individuals,
20 intuitively it sounds like it might, but I
21 think that has to be nailed down.

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1 MEMBER BEACH: Let me just ask a
2 clarifying question. The 305 samples, some
3 of those were taken after -- several months
4 after the actual exposure time period. Isn't
5 that correct?

6 MR. ROLFES: Correct. The
7 exposure potential time period for this
8 particular operation, which was the bounding
9 operation for potential uranium exposure, as
10 indicated by actual survey data, air
11 monitoring data, worker interviews and the
12 bioassay data that we have.

13 There was an operation going on
14 for five years, roughly from 1985 through
15 1989. In 1989, a worker reported basically
16 having oxide on his gloves and on his
17 coveralls, and I will read here just a little
18 excerpt from February --

19 MR. HINNEFELD: The issue here, I
20 think, is one of timing and what the argument
21 is based on. We are talking about the -- I

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1 can talk about this stuff, right?

2 CHAIRMAN CLAWSON: Right.

3 MR. HINNEFELD: We are talking
4 about the W28 dismantlement, meaning they were
5 being retired or not being --

6 MEMBER BEACH: No, there is more
7 to it.

8 MR. HINNEFELD: I am just talking
9 about what the data is purporting. NIOSH's
10 presentation is purporting that this dataset
11 provides a bounding dose for the dismantlement
12 of the W28, and that the W28 is the worst --
13 that dismantlement of the W28 is the worst
14 potential for exposure. That is the NIOSH
15 position. That is all I am saying.

16 I am not arguing it. I am just
17 trying to restate it. So those are the right
18 dates? They started dismantling to remove it
19 from 1984. Is that the correct date?

20 MR. ROLFES: Yes, correct.

21 MR. HINNEFELD: Okay. So that is

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1 then where we considered this bounding
2 approach. So if, in fact, there is a reason
3 to add an -- I have not heard a reason to
4 believe that there is another set of people
5 who would have had a higher dose.

6 Now, Phil, to your point, we are
7 not saying that only the 305 people are going
8 to receive this bounding dose. The
9 potentially exposed people would receive this
10 bounding dose, not just the 305. So the
11 maintenance people and security people would
12 be -- who had gone in there, or we wouldn't
13 maybe know where they went, so they would get
14 the dose.

15 So the fact that not everybody was
16 sampled who was potentially exposed doesn't
17 really relate to the ability of this dataset
18 to bound the dose.

19 I am saying this stuff, and I am
20 asking this stuff not because I am trying to
21 take a side in the argument. But remember

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1 that a designation decision is made by the
2 Secretary. Okay? And I have got to advise my
3 boss what to do and, if I can't explain to him
4 why he should ignore his technical staff, what
5 do you think that is going to say?

6 That is what I am trying to make
7 this argument for. I am just trying to get
8 this out there. I have not heard -- I have
9 been trying to listen. I have not really
10 heard a particular reason to believe, because
11 what I have heard is W28 seems to have been
12 the worst, because it was unalloyed and
13 uncased, that dismantlement is the worst
14 activity, although they did disassemble things
15 for surveillance and modification and stuff
16 like that.

17 The numbers of things done per
18 year were certainly high when they were
19 dismantling from '84 to '89 and when they were
20 doing the maintenance, and I just don't hear
21 much that tells me a reason to believe that

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1 that is not bounding. I am just trying to lay
2 it out here, guys, because this is not
3 something that I have delved into. I have not
4 looked at the technical evidence to the extent
5 that everybody else has, but I am just
6 looking at my path forward going down the
7 road.

8 CHAIRMAN CLAWSON: I understand
9 that, and here is my take on it. Things have
10 changed over the years. We are taking a
11 snapshot of time, five-year time period, and
12 saying, well, this is the worst it could have
13 ever been. This is '84 to '89, and this is
14 the worst it could have been. Nobody could
15 have ever done it, but we don't know, really,
16 the other 30 years.

17 MR. HINNEFELD: My question right
18 now is I am only talking about '84 to '89.
19 That is all I am talking about right now, is
20 '84 to '89. What have we said today that
21 makes us say that '84 to '89, that this data

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1 doesn't bound the doses?

2 MEMBER BEACH: We have to -- I
3 agree. I think that we need to look at that
4 end date, but I think we -- we haven't been
5 focused on the '84 to '89. I think we need to
6 take a look at that and see if that is
7 bounding, so that we can come up with the
8 right end date. I think that --

9 CHAIRMAN CLAWSON: Because at the
10 beginning of this meeting, the process that
11 was going to be done was we were going to take
12 the '84 to '89 data and put it with the early
13 60 years. So now --

14 MR. HINNEFELD: I understand that.
15 I am just talking -- you know, you are
16 talking about -- the discussion here is about
17 a recommendation to go to the Board with a
18 recommendation to add a class for some time
19 period, and you said through '91, and I
20 haven't heard anything that says it should go
21 past '83.

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1 MR. FITZGERALD: Yes, just to jump
2 in again, it is one of these things we really
3 haven't focused on, but I tend to agree with
4 Stu that when we did the comparison
5 contrasting the data, it was clear that we
6 were contrasting data that went back to the
7 sixties, seventies, and early eighties, and I
8 think the question of whether or not that data
9 would bound the campaign itself, I think is a
10 good question.

11 That is why I said it was a
12 legitimate question that was raised, that Ted
13 raised, because we have been looking at it in
14 a different way, but looking at it from that
15 standpoint, I would say, you know, I could see
16 the 305 bioassay samples being bounding of
17 those workers, other workers that weren't as
18 directly involved with. And, yes, I think
19 this is something that we need to do a little
20 bit more homework on just to make sure that
21 that approach, in fact, is valid.

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1 I think it might be, but that
2 would not necessarily hold back the Work Group
3 from accounting up to '83, because I think
4 there I would say those samples aren't going
5 to do you much good, going back before that
6 campaign. That campaign, I think, stands as a
7 specific operation.

8 We don't get into the
9 normalization issue as much with the five-year
10 period that you would for a 30-year period.
11 But I think we had to cross those Ts, because
12 if they went from -- if there were some
13 changes, there were workers coming in and out,
14 I would want to at least be able to see that
15 accounting done that would give confidence
16 that you can back down those five years.

17 I think there is no equivocation
18 before '84. I think that is where all the
19 discussion today brings you to the fact that,
20 yes, it would be a much bigger reach taking
21 that same data and trying to apply it to those

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1 earlier years.

2 CHAIRMAN CLAWSON: And this is
3 what we have done at other sites, you know.
4 Because I'll be right honest, Stu, I now
5 understand what you were saying about it. I
6 was taking it as this whole thing, because we
7 have been told that these 350 are bounding for
8 all years. Then all of a sudden, this has
9 changed.

10 MR. HINNEFELD: I am not trying to
11 change my argument. What I am saying is, what
12 can we conclude from the evidence being
13 provided?

14 CHAIRMAN CLAWSON: Right, and I
15 agree with you, and maybe what I ought to do
16 is --

17 MR. HINNEFELD: Well, I can't
18 necessarily tell you what will be concluded,
19 because there is still a lot of evidence
20 before '83, and I think -- I don't know if we
21 want to get into this before lunch, but I

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1 think we still need to make sure that we are
2 clear on -- you know, NIOSH's argument is that
3 there is sufficient other evidence to believe
4 that these doses from this '84 to '89 campaign
5 would bound all of that work.

6 So some reasons to say that -- now
7 there may be some reasons talked about here,
8 the reasons that the Work Group chooses. You
9 know, what convinced us that NIOSH's argument
10 is not convincing?

11 If that can be set down clearly,
12 it makes the path for the Institute going
13 forward a lot easier.

14 CHAIRMAN CLAWSON: I understand.
15 I understand fully what you are saying, and
16 what I am looking at is: 1984 on we can
17 address. There is an awful lot of petitioners
18 that are leaving this earth, and I would
19 really like to be able to see -- because these
20 earlier years, bottom line I understand what
21 you are saying.

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1 So I am going to re-put this to
2 the Board. What I am going to say is from
3 1958 to the end of 1983 that this go to the
4 Board for an SEC, due on the inability to be
5 able to monitor for -- or however we want to
6 put it, for depleted uranium.

7 Is there any questions by other
8 Board Members?

9 MEMBER PRESLEY: This is Bob. Now
10 are you saying that this is all people that
11 worked at Pantex?

12 CHAIRMAN CLAWSON: Yes.

13 MEMBER PRESLEY: That is not
14 right.

15 MEMBER BEACH: Well, that is the
16 Class Definition that we have to work with.

17 CHAIRMAN CLAWSON: That is the
18 Class Definition, Bob.

19 MEMBER PRESLEY: So we are able to
20 go back in and find the people that worked in
21 that operation. You will have a few we will

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1 have to look for, but there is no way in the
2 world I can go for a --

3 CHAIRMAN CLAWSON: So you are
4 telling me that you can go back and find the
5 security guard?

6 MEMBER PRESLEY: I am telling you
7 that there is going to be people that you
8 can't find and, yes, we can help you, give the
9 benefit of the doubt, too. It is not fair to
10 go in and say that the people that worked in
11 the cafeterias or the people that may have
12 worked in a non-rad building are covered.

13 MR. KATZ: Excuse me. Wait one
14 moment. Bob, we could hear you, sort of, but
15 it is very difficult. I think Sara -- maybe
16 someone has their line open, and we are
17 listening to chatter in the kitchen or
18 something, and it is making it very hard for
19 us to hear one of our Board Members. So,
20 please, mute your phone, *6 if you don't have
21 a mute button, and that will help us a lot.

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1 Much thanks. I still hear -- I think it is
2 you, Sara, but maybe it is someone else.
3 Please mute your phone.

4 MS. RAY: No, it is not me. I am
5 muted.

6 MR. KATZ: I am sorry, but it is a
7 woman, anyway, that we are hearing.

8 CHAIRMAN CLAWSON: Kathy?

9 MS. ROBERTSON-DEMERS: No, I am
10 not in the kitchen.

11 (Laughter.)

12 CHAIRMAN CLAWSON: Well, Bob -- and
13 I understand that to a point, but -- and like
14 I say, you can vote your opinion. Your vote
15 is just as important as mine is or whatever
16 else, but I don't think that you can really
17 single anybody out. I don't think you can
18 single out the people that are bringing in
19 shipments of depleted uranium, but this is
20 your choice. You can air these concerns.

21 My whole thing is that all I am

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1 doing is voting as a Work Group to be able to
2 put it before the Board and start airing these
3 things to the Board.

4 MR. KATZ: But your motion -- just
5 to be clear, Brad, your motion is to say all
6 workers.

7 CHAIRMAN CLAWSON: Yes.

8 MR. KATZ: That you're suggesting
9 to the Work Group to recommend to the Board.

10 CHAIRMAN CLAWSON: Yes.

11 MEMBER PRESLEY: And I don't agree
12 with that. I am sorry.

13 CHAIRMAN CLAWSON: Bob, that is no
14 problem. We all have these opinions, and it
15 is just like a lot of them. I don't agree
16 with them either, and that is what we can go
17 with.

18 MEMBER SCHOFIELD: One of the big
19 problems we have is the fact that how do we
20 know who went in these potentially hot areas
21 and who did not? Unless there is some valid

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1 way that we can selectively say these people
2 went in here and these people did not, but
3 given Pantex's -- the lack of badging, the
4 lack of bioassay for many people who still
5 went through those areas --

6 MR. HINNEFELD: Let me just start
7 on this. This is Stu Hinnefeld. If I am
8 correct, there are pretty comprehensive access
9 records to the various buildings at Pantex,
10 and this is a record underlying some of these
11 testimonies.

12 MR. ROLFES: I just want to
13 clarify. I guess for the earlier years, in
14 our last document review trip at Pantex, I
15 found a box of records that were created in
16 1980-1981 time period. Any employee that was
17 on site at that time period filled out a sheet
18 which showed which buildings they had accessed
19 during which years, from the beginning of
20 their employment up until 1980.

21 Now also beginning in 1970, there

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1 were also access controls.

2 CHAIRMAN CLAWSON: Hold on, Sara.

3 MR. ROLFES: Now, beginning in
4 1970, there was also a system we looked at
5 that had radiation safety training
6 requirements, basically specific
7 authorizations and approvals to work on
8 certain aspects of certain weapons system in
9 certain areas.

10 It wasn't a casual operation. It
11 may have been more casual in earlier days.
12 However, there is documentation which allows
13 us to identify which workers worked on which
14 weapons systems or in which buildings.

15 MR. FITZGERALD: In the category
16 of fly in the ointment, let me make one
17 comment, because we did kind of probe that a
18 little bit in our last site visit.

19 MR. KATZ: I am sorry. There is
20 someone on the line who is speaking. Please
21 mute your phone. Hello, hello? Someone on

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1 the line, a man now, is talking. Please mute
2 your phone, *6 if you don't have a mute
3 button.

4 MS. RAY: This is Sara. Can I say
5 something?

6 MR. KATZ: Well, right now Joe is
7 speaking. Thank you, Sara, but you will get
8 your chance, Sara.

9 MS. RAY: I am sorry. I thought
10 he was finished.

11 MR. FITZGERALD: No, we were
12 waiting to clear the conference phone. I have
13 a short comment, Sara, and certainly bow to
14 you.

15 In my memo, this is something we
16 specifically asked for, which was what other
17 worker categories -- clearly, operators would
18 have been exposed, and they were, in fact,
19 bioassayed. Who else might have been
20 implicated, and could you confine
21 contamination to specific areas?

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1 Granted, this came from an
2 interview. I have to look at the notes, but--

3 MR. KATZ: I'm sorry. Sir,
4 whoever is speaking about '91 and so on, you
5 are not on mute, and you are interrupting Joe
6 Fitzgerald here in the room who is trying to
7 get a few words in edgewise. Would you please
8 mute your phone or stop talking, either one?
9 Thank you.

10 MR. FITZGERALD: Okay. What I was
11 going to say is that we asked the question,
12 what worker categories would have been
13 implicated, not just simply the operators that
14 we focused on. In terms of contamination
15 spread, what areas should you be concerned
16 about, and this individual -- This is kind of
17 the first time we actually raised this in this
18 particular way. He identified technicians,
19 supervisors, engineers, safety personnel,
20 handlers, support personnel.

21 It is sort of the usual range of

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1 characters that would involved that would have
2 frequented these areas. But then he gave me
3 some pause, and I am only putting this out
4 because it is something I hadn't thought
5 about.

6 They had done a chronic beryllium
7 survey of Pantex, because they were concerned
8 about beryllium spread in the facility, and
9 they did this at most DOE sites. They found
10 beryllium in the office areas. They found
11 beryllium in storage areas and hallways.

12 And his comment was, given the
13 controls on depleted uranium in the early
14 days, he would not have been surprised that
15 you would have had residual contamination in
16 the same areas that you found the beryllium,
17 just basically because it might have been
18 tracked out. You just didn't have the
19 surveying and the controls, as I noted in the
20 Albuquerque audit, in the early days.

21 So there is no way to pin that

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1 down, but just saying that that was the
2 observation in terms of some of that. That is
3 in the memo.

4 MR. ROLFES: Just to clarify, what
5 you put in the memo -- it didn't say anything
6 about uranium contamination, just specified
7 beryllium contamination, though.

8 MR. FITZGERALD: Yes. In the
9 context of DU, what I am pointing out is that
10 the comment was in the context of who may have
11 been involved with depleted uranium beyond the
12 operators, and where you may have found
13 similar residual contamination for DU as they
14 had found for beryllium. That was the intent.
15 Maybe I didn't word it very clearly.

16 His point was, given that finding,
17 that we had to be careful about assuming that
18 the depleted uranium stayed in a particular
19 control area, that it never got out. In fact,
20 they had that assumption for beryllium, and it
21 was a false assumption.

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1 So be that as it may, that is
2 about as far as we could take it.

3 CHAIRMAN CLAWSON: There was also
4 some things said in there that, I believe, got
5 redacted out, because he got a little bit into
6 detail.

7 MR. FITZGERALD: Yes. This is the
8 generalized surviving words that I had. That
9 is all I can tell you about that.

10 MS. RAY: Can I make a comment?

11 MR. KATZ: Yes, go ahead now,
12 Sara.

13 MS. RAY: What Joe is just saying,
14 you are talking about basically what I am
15 hearing is individuals carried beryllium and
16 other materials on their coveralls. The
17 coveralls were washed at the plant site, but
18 if someone went through the cafeteria, they
19 took it with them to the cafeteria. If they
20 went to 1236, and they signed a form for
21 payroll deduction or whatever, they carried

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1 that with them.

2 Employees did not shower. They
3 were not swiped at the end of shift. The
4 utility guys, the people that do the air
5 handlers, they changed the HEPA filters --
6 those are nonstandard air handlers. They had
7 to crawl inside those. The fire department
8 has to go in and do PMs. The guards have to
9 respond.

10 I mean, there are so many people
11 that are in and out. The people who carried
12 the cards, and it would have been the old IBM
13 with the cards. It would have been payroll
14 cards that were going up. It would have been
15 disassembly cards that go with the weapons.
16 Those were carried throughout the plant.

17 That material was not contained in
18 the bays and cells. It was not only where the
19 weapons were. It was carried throughout the
20 plant. It was buried. It was burned. There
21 are documents that represent that.

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1 So it has to include everyone.

2 CHAIRMAN CLAWSON: And I
3 understand what you are saying there, Sara,
4 because at many of the sites we have seen the
5 same thing. What this individual was using
6 was because they put so much effort into the
7 beryllium, he was just showing how it traveled
8 throughout the site, and it actually had more
9 controls than what some of the uranium and so
10 forth had on it.

11 MS. RAY: And I saw all the
12 records on the beryllium, and it was basically
13 in every single facility.

14 The other comment that I wanted to
15 make, what Mark was looking at: the plant
16 recognized at some point -- and my husband,
17 Don, participated in this, but they never kept
18 records of what programs people worked on or
19 what facilities they worked in.

20 Don had maybe been working there
21 five or six years, and they called him up and

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1 they said, okay, we want you to write down
2 every program in every facility you have
3 worked on and every operation.

4 How many of you can tell me
5 everywhere that you went last week and track
6 every single step? I cannot do that. I am
7 old. So I get the benefit of the doubt, but
8 that is a difficult thing to do.

9 So I question what Mark is talking
10 about. That was a record created after the
11 fact. It was not one that was maintained
12 throughout the years.

13 MS. ROBERTSON-DEMERS: This is
14 Kathy Demers. I have kind of a simple
15 question for Mark. The records that you are
16 talking about -- are they in -- do they fall
17 into such a category that they could even be
18 released?

19 MR. ROLFES: They are Official Use
20 Only, because they contain Privacy Act
21 information concerning details of the

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1 individuals' work history.

2 MS. ROBERTSON-DEMERS: Okay. So we
3 would be relying on this couple -- a set of
4 records and going into who worked on what
5 program, we might be in another category.

6 MR. ROLFES: It would still
7 contain Privacy Act information.

8 MS. ROBERTSON-DEMERS: What I am
9 getting at is: is that information of such a
10 content that it would have to be secure?

11 MR. ROLFES: Yes, because it
12 contains Privacy Act information.

13 MS. ROBERTSON-DEMERS: No, that is
14 not what I am getting at. So all of this
15 information--

16 MR. ROLFES: To my knowledge,
17 those records that I reviewed were
18 unclassified, and there is no reason that the
19 identify of a particular worker working on a
20 specific weapon program would be anything more
21 sensitive than Privacy Act information.

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1 That is not my call to make,
2 however. It is Department of Energy's.

3 CHAIRMAN CLAWSON: Time frames,
4 when you start putting --

5 MR. ROLFES: Like I said, that is
6 not my call to make.

7 CHAIRMAN CLAWSON: Right. I
8 understand. From what we have learned, you
9 can't -- that is where they get into problems
10 with time frames.

11 MR. FITZGERALD: I guess the other
12 issue -- I heard the end of '83. I was
13 thinking, does that actually mark precisely
14 the beginning of the campaign? I suspect it
15 wasn't January 1st, '84. Five years, I think,
16 is just our shorthand description or term for
17 the campaign, but I would want to nail that
18 down a little better.

19 Then also you -- given the
20 solubility classes, your bioassays, would they
21 -- you know, we are sort of saying that they

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1 would see the five years. Of course,
2 bioassays don't stop at the five years. I am
3 just wondering if -- but we are confident that
4 it would envelop those five years in terms of
5 the results.

6 MR. HINNEFELD: What I said was I
7 didn't -- haven't heard a reason why it
8 wouldn't. So there can be additional
9 discussion going forward, but I haven't heard
10 a discussion today why it wouldn't.

11 CHAIRMAN CLAWSON: My feeling on
12 this is, just like a lot of the other sites,
13 you know what, we haven't looked at this data
14 to be able to use it in just this content.
15 Like I say today, things have changed. Now we
16 are looking at it in a little bit of a
17 different aspect, but I personally don't see
18 anything for 1983 that we can bound -- or '84.

19 MR. HINNEFELD: Yes, '83 and
20 earlier.

21 CHAIRMAN CLAWSON: Yes. I don't

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1 see anything on that. My opinion is that, as
2 I have put out to it, and then we can continue
3 to research this data and go forward from
4 there. If it gets extended a week forward,
5 then that is what we can do from there.

6 MS. RAY: And this is Sara. I
7 would like to request that you also continue
8 to look at the '91 date, because there was a
9 reason for that. I cannot tell you every
10 single reason at this point, because I don't
11 have all of my information. But I think that
12 considering the Tiger Team report is an
13 important thing. I don't think you can set it
14 aside.

15 I think that Stu could go to the
16 Secretary and say this is on DOE findings and
17 recommendations, and that after '91 things
18 changed. I think '90 or '91 should stay the
19 ending date.

20 I appreciate the '83, but I really
21 would like for people to continue to look at

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1 the later date and not just dwell on this one
2 weapon, because I know many other weapons were
3 disassembled, even in recent years and you
4 all, the ones who have clearances, I am sure
5 you know which ones I am talking about. But
6 there are many weapons that are probably not
7 as dirty, but dirty.

8 MR. KATZ: Thank you.

9 MEMBER BEACH: So, for me, I am in
10 agreement with moving forward with a vote
11 between the Board Members on this Work Group
12 to the end of '83 time period, but I would
13 also like to ask Joe, how long will it take
14 you to review the documents for '84 to '91 and
15 get back to us? Is it doable before the
16 August Board meeting?

17 MR. FITZGERALD: I don't think so.
18 I think it is a new line of inquiry.

19 DR. NETON: I think, if you craft
20 the designation such through the Board that
21 you are leaving this period open, you don't

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1 have to go through the 83.14 process. You
2 just say we can go through '83; we are still
3 investigating this latter period.

4 CHAIRMAN CLAWSON: Right.

5 MEMBER BEACH: Which is fine. I
6 was just curious as to how long Joe thought
7 the --

8 MR. FITZGERALD: Well, I think it
9 wouldn't be the next two weeks for sure.

10 MEMBER BEACH: That's fair.

11 MR. FITZGERALD: So it is a new
12 line of inquiry, and I think we have talked
13 about some of the issues, solubility class and
14 whether or not it envelops all the workers
15 that would be relevant, and some of the
16 discussion about whether you can actually
17 locate the affected areas of the plant in
18 terms of access information.

19 That all sounds like a completely
20 different line of inquiry. It is going to
21 some time, but it doesn't, obviously, keep the

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1 Work Group from doing what it can do through
2 '83.

3 MEMBER BEACH: Which I think is
4 important.

5 MR. KATZ: Right, and then the Work
6 Group, in its report to the Board, can talk
7 about what is going on, give them an update on
8 what is going on for the '84 forward period,
9 too. I think that would be a good thing to
10 include in the presentation of the Work Group.

11 MR. FITZGERALD: And, Sara, this
12 is exactly what you are talking about, just
13 being very responsive to making sure that all
14 the Ts are crossed in this five-year period up
15 to '91 before settling on that issue. So,
16 really, trying to settle on what we can settle
17 on in terms of what the technical information
18 -- where the technical information takes you,
19 and where there are some remaining questions,
20 closing that out as quickly as we can.

21 CHAIRMAN CLAWSON: My one question

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1 is: as a Board and so forth like that, we have
2 always been held within the strength of the
3 petition. So if we go past that time period,
4 we are going to have to also designate that in
5 this as a time period that we are looking at.

6 MR. KATZ: So you are bound within
7 the period of the petition's eligibility. So
8 that is '91, the end date, then that is where
9 you are bound for all of your work. DCAS can
10 go beyond that. You can't.

11 CHAIRMAN CLAWSON: Right, and that
12 is what I am wondering, is how we do this
13 because of what Sara just brought up.

14 MR. KATZ: If the petition goes to
15 '91, the Board can consider '84 to '91 down
16 the road, without any -- there's no
17 constraints on that.

18 CHAIRMAN CLAWSON: No constraints
19 on that.

20 MR. KATZ: If you wanted to
21 consider, you know, 2000, of course -- and

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1 that is not within the envelope of the
2 petition -- then you couldn't do that without
3 another petition, but within the envelope of
4 the petition you can consider that full
5 period. So you are apportioning one piece of
6 that petition now. It is fine, and it doesn't
7 constrain you to continue working on the rest
8 of what is enveloped within the petition.

9 MS. ROBERTSON-DEMERS: This is
10 Kathy. Are we going to continue consideration
11 of '51 through '57?

12 CHAIRMAN CLAWSON: Yes. I
13 understand what she is getting at, because in
14 this -- when we went down there, the
15 interviews indicated earlier years, but '58
16 was the only year that we could find the
17 disassembly of the W28. So I guess we need to
18 look at the earlier years in the same aspect.

19 MR. KATZ: So that is another
20 thing that you can report to the Board, that
21 you are still looking at the '51 to '58

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1 period, and explain what the issues might be
2 for the '51 to '58 period. Then they will
3 have a snapshot of all of what is going on,
4 and what you are putting before them to start
5 wrestling with, the '58 to '83 period.

6 CHAIRMAN CLAWSON: So let's recap
7 this to the Board Members that are on there.
8 What we are looking at is to take to the Board
9 in August the 1958 to the end of 1983 for all
10 employees, due to the inability to reconstruct
11 for uranium, depleted uranium. I guess I am
12 looking at the -- and we will look into the
13 earlier years, the 1950 to 1958 and the 1984
14 to 1991. Does everybody understand what we
15 are doing or do we need to clarify it? Phil?

16 MR. KATZ: Phil, are you still
17 with us?

18 MEMBER SCHOFIELD: Whoops.

19 MR. KATZ: There you are.

20 MEMBER SCHOFIELD: I think let's
21 go ahead and just hold off on those latter

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1 years until that gets clarified, but go ahead
2 with an SEC, as Brad has proposed.

3 MEMBER BEACH: The only thing that
4 I would make note on is that you need to
5 clarify, like Bob brought up, who was
6 involved. I think that that may be part of
7 your presentation of clarifying who may or may
8 not have been involved, and why, what our
9 thoughts are.

10 MR. FITZGERALD: That bears on the
11 breadth of the Class, which was an issue with
12 what Bob Presley raised, and I think that
13 might be the basis for a larger Class and a
14 smaller Class. That is arguable, but I think
15 that would be the basis.

16 CHAIRMAN CLAWSON: Well, and I
17 think, when we bring this before the full
18 Board, I think we will be able to write this
19 up in a better understanding of what we are
20 saying with that because I understand Bob's
21 point on it and so forth, but from what I have

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1 seen -- and this is my personal opinion -- I
2 don't know how you would be able to do it.

3 MR. KATZ: So we should just get
4 clarity though. Phil, you support the
5 approach that Brad has put forward, the
6 motion. Is that correct?

7 MEMBER SCHOFIELD: Correct.

8 MR. KATZ: Okay, and then let's
9 just get Bob Presley. You position is what,
10 in support or opposed?

11 CHAIRMAN CLAWSON: But also did he
12 understand what I said? Do you understand
13 what I propose there, Bob?

14 MEMBER PRESLEY: I understand what
15 you propose, but if we vote on it -- if I vote
16 on this thing, then how are we going to bring
17 it to the full Board that there are some
18 reservations on the Class?

19 MR. KATZ: So, Bob, you just need
20 to state so that we are clear what it is you
21 support or don't support, so that when Brad

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1 reports out -- and I would suggest that Brad
2 share with the rest of the Work Group Members
3 what he is planning to present, but so that he
4 can accurately represent where you stand as a
5 Member of the Work Group.

6 MEMBER PRESLEY: Okay.

7 MR. KATZ: So that is what he
8 needs to hear from you now, just you can be
9 supportive, opposed to the whole thing,
10 supportive but you are not supportive of a all
11 workers Class. Whatever your position is,
12 that is what we need to hear.

13 MEMBER PRESLEY: My position is
14 that I am supportive of the Class, but not for
15 everybody that worked at Pantex.

16 CHAIRMAN CLAWSON: I understand.

17 MR. KATZ: Okay. Your statement
18 on the record before fleshes that out nicely.

19 Josie?

20 MEMBER BEACH: I am in support of
21 the motion.

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1 MR. KATZ: In support, and those
2 are all the Members. Thank you.

3 CHAIRMAN CLAWSON: Now my question
4 is -- and this is to you, Ted -- because we
5 have not looked at this time frame in this
6 aspect, do we need to task SC&A to do that?

7 MR. KATZ: No. So what you are
8 asking -- this is not for the pre-August Board
9 meeting, but yes. I think SC&A needs to
10 scrutinize the question as it is on the table
11 now in terms of the post --

12 MR. FITZGERALD: I think Jim and I
13 are on the same page.

14 DR. NETON: I would suggest that
15 NIOSH --

16 MEMBER BEACH: NIOSH, I was just
17 going to say --

18 DR. NETON: -- because we have
19 changed our position --

20 CHAIRMAN CLAWSON: Oh, you know,
21 you are absolutely right, Jim.

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1 DR. NETON: -- and I think we need
2 to take the opportunity to flesh this out in
3 more detail. I would acknowledge that what we
4 have on the table right now doesn't have
5 sufficient detail to demonstrate -- clearly
6 demonstrate it.

7 MR. FITZGERALD: I think we -- we
8 put -- some of our questions I think I
9 expressed -- I think those are the kind of
10 things --

11 MR. KATZ: So this is -- this is
12 step-wise, that's fine, I mean, so NIOSH needs
13 to put on the table -- I mean, NIOSH hasn't
14 necessarily withdrawn its position, as Stu
15 said, that it can cover it all. Anyway, if it
16 comes to this, NIOSH needs to put its position
17 on the table as to how it would address the
18 period of '94 forward -- '84 forward, and at
19 that point I don't think we need a new
20 tasking. You know, Joe, that at that point
21 you would be scrutinizing that.

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1 CHAIRMAN CLAWSON: And the '50 to
2 '58, because --

3 MR. KATZ: That is ongoing, '50 to
4 '58. So you don't need a new tasking. That
5 is ongoing, and I assume you will continue
6 marching down that road.

7 MR. FITZGERALD: -- that some
8 questions came up about earlier systems. We
9 don't know.

10 MR. KATZ: Right. Anyway, no new
11 tasking needed for that.

12 MEMBER BEACH: So we get work
13 product from NIOSH; SC&A reviews it.

14 CHAIRMAN CLAWSON: I just wanted
15 to make sure we weren't held up with any kind
16 of a tasking, and you are absolutely right,
17 Jim. I apologize. I was looking at it as the
18 tasking part of it instead of what it was.

19 MR. KATZ: In terms of time frame,
20 I imagine -- DCAS can speak for itself, but
21 they are not going to march down that road

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1 until some of this gets addressed at the Board
2 level because it sort of depends on what
3 happens at the Board level how they handle
4 that question.

5 CHAIRMAN CLAWSON: Right. The
6 time here is 12:30. We are going to break for
7 lunch. So we will come back about 1:30.

8 MR. KATZ: One-thirty? Is that
9 good?

10 MR. ROLFES: I had a question.
11 Brad, I don't know. What are your plans for
12 discussion after lunch? I just wasn't -- I
13 was looking, I think we covered most --

14 CHAIRMAN CLAWSON: We have still
15 got the draft completeness. We are not even
16 done with this paper. We got thorium.

17 MR. ROLFES: Okay. I just wanted
18 to check with you.

19 CHAIRMAN CLAWSON: And we wanted
20 to go over this memorandum that we have been
21 talking about from our last site visit, and

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1 then just an overview of our path forward.

2 MR. ROLFES: We have been covering
3 a little bit of each.

4 CHAIRMAN CLAWSON: This is why I
5 have been trying to sit here and -- thanks,
6 Joe, I forgot all about thorium. So that is
7 what we will do after lunch.

8 MR. KATZ: So at 1:30, we will
9 reconvene. We are in recess now. Thank you,
10 everyone on the line. See you again at 1:30
11 or hear you again.

12 (Whereupon, the above-entitled
13 matter went off the record at 12:28 p.m.)

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1 morning we made it through the first --
2 halfway through the first item. We still have
3 -- on bounding uranium and thorium, we need to
4 finish up the thorium part. So with that, I
5 will turn it over to Joe.

6 MR. FITZGERALD: Actually, I think
7 format-wise I guess we just would need a
8 summary from Mark.

9 MR. ROLFES: In our document that
10 I sent out last week on Pantex bounding
11 uranium and thorium intakes, we had the
12 uranium discussion. Then also we have got a
13 section on thorium.

14 Basically, to go through some of
15 the points that we have made, there is
16 additional documentation that back up the
17 summarization of this report, but basically we
18 reviewed the potential for exposure to
19 thorium. The potential for exposure to
20 thorium at Pantex was much lower than a
21 potential for exposure to depleted uranium.

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1 We looked at a Los Alamos
2 scientific laboratory 1976 report regarding
3 the health physics and industrial hygiene
4 aspects of thorium. The analysis, documented
5 in this report, concluded that there was no
6 airborne contamination problems associated
7 with the thorium material because of the large
8 particle size involved.

9 Pantex investigated this on their
10 own as well and took hundreds of swipes of
11 components which they collected and analyzed.

12 They found that a posting of a contamination
13 area wasn't needed to handle thorium and that
14 respiratory protection was not needed either.
15 They analyzed 73 worker breathing zone samples
16 which showed that there was no airborne
17 activity detectable in the air in the Pantex
18 workplace.

19 Let's see. Just another point
20 here, Pantex plant had been operating under a
21 thorium-232 removable contamination

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1 administrative control level of 40 dpm per 100
2 square centimeters, which was below the
3 regulatory limit of 200 dpm per 100 square
4 centimeters.

5 There is also employee-specific
6 bioassay data for thorium, was monitored via
7 nasal swipes, urine and fecal samples, as well
8 as direct radio-bioassay, which would be in
9 vivo lung counting that was done on site.

10 The years that are covered by
11 these analyses were 1983 forward, roughly, and
12 we have got some references here in the Site
13 Research Database that have the results of
14 these analyses.

15 Basically, we currently have a 40
16 DAC-hour intake of thorium in our Site
17 Profile. However, based upon updated
18 information, we have actually looked at the
19 air sampling data available to us, and have
20 analyzed the amount of uranium and thorium in
21 air, using the air monitoring results.

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1 We were able to develop a ratio of
2 how much thorium would be present in the
3 workplace versus how much uranium airborne
4 activity would be present in the workplace,
5 and we have agreed to revise our Site Profile
6 to assign thorium intakes based upon a ratio
7 of the airborne depleted uranium.

8 The analysis that we were able to
9 do using these breathing zone samples from
10 disassembly operations showed that about two
11 percent of the alpha activity that is airborne
12 during certain operations is a result of the
13 thorium that is present, while the 98 percent
14 that is present in air would be the result of
15 depleted uranium alpha activity.

16 We also are changing the mode of
17 thorium intake from a previous acute intake to
18 a chronic low level exposure as well.

19 MR. FITZGERALD: You did say
20 breathing zone. So these were true breathing
21 zone samples that were taken?

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1 MR. ROLFES: That is correct.

2 MR. FITZGERALD: Kathy, are you
3 still on?

4 DR. MAURO: Joe, while we wait for
5 Kathy, I got a quick question for Mark. This
6 is John. When you say you have thorium
7 airborne samples, I know in the past,
8 especially when you go back in time, it was
9 just a gross alpha count, and you are not
10 really sure whether it is uranium or thorium-
11 232 that you are looking at.

12 How do you know you are looking at
13 thorium-232 as opposed to uranium?

14 MR. ROLFES: Well, what they did,
15 they took a look at the air filters and ran
16 ICP-MS, inductively coupled plasma mass
17 spectrometry, and scanning electron microscopy
18 to specifically identify which particles were
19 uranium and which particles were thorium.

20 DR. MAURO: Thank you. You
21 answered my question.

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1 CHAIRMAN CLAWSON: Mark, who was
2 doing these swipes and stuff like this?

3 MR. ROLFES: These were air
4 samples.

5 CHAIRMAN CLAWSON: Air samples?

6 MR. ROLFES: The swipes that I
7 mentioned earlier were done by an industrial
8 hygienicist/health physicist at the site.

9 MR. FITZGERALD: I guess we had
10 talked about trying to normalize across some
11 of these systems and operations. How does
12 that account for, I guess, a sufficient --
13 conservatisms -- envelope thorium use? You
14 know, it wasn't as lengthy, obviously, as DU.

15 MR. ROLFES: Could you repeat
16 that?

17 MR. FITZGERALD: Well, I am just
18 saying, you are using these ratios, and the
19 two percent was based on these measurements.
20 I guess my question goes to the thorium
21 systems that would have been handled. Does

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1 this, in fact, bound --

2 MR. ROLFES: This particular
3 weapons system was also one of the ones that
4 was said to have been a worst case type
5 potential for exposure. It was one of the --
6 we have identified a list of -- let me get
7 back to it. Wanted to go back to the specific
8 list of -- okay, here at the top of page 4 in
9 our evaluation, the 28 program, since that was
10 one of the ones that resulted in the highest
11 potential for contamination. We also asked
12 about some of the other weapon programs.

13 One that was responsible for the
14 thorium was also one of the ones that Mason &
15 Hanger-Silas Mason personnel were aware of and
16 knew that there would be a greater potential
17 for exposure due to contamination. So once
18 again, it appears to me that we have chosen
19 the bounding situation for possible thorium
20 exposures.

21 MR. FITZGERALD: Okay.

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1 MEMBER BEACH: Mark, can you give
2 us a list of the assemblies and disassemblies
3 for everything that had uranium and thorium in
4 them?

5 MR. ROLFES: Yes.

6 MEMBER BEACH: From '58 through --
7 so you can go all the way back to the early
8 years?

9 MR. ROLFES: Yes, I can tell you
10 the source term for every program.

11 MEMBER BEACH: Okay. Is that
12 available?

13 MR. ROLFES: That information is
14 very, very well documented from the beginning
15 of time of our weapons programs.

16 MEMBER BEACH: Okay, great.

17 CHAIRMAN CLAWSON: But some of
18 them came on-line and went off-line before a
19 lot of the more stringent monitoring came on-
20 line. I guess I was just wondering how we
21 were going to account for those where we don't

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1 really have any data on them.

2 You know, when we pulled up that
3 chart down to Pantex, I noticed that is a
4 classified document, but numerous ones came
5 on-line that had the thorium issues and the
6 thorium problems, also some other problems,
7 but they also went away quite rapidly, too,
8 for some of those reasons.

9 You know, we have got data for the
10 `70s era and so forth, and I just -- when does
11 the data actually start that we have the
12 thorium smears for? Is it the beginning of
13 the `70s?

14 MR. ROLFES: The earliest smear
15 for thorium that I am aware of would have been
16 collected back in 1968, I think.

17 CHAIRMAN CLAWSON: Maybe this is a
18 loaded question or whatever, but what time
19 frame do we really -- because in the early
20 years they were just trying to get a handle on
21 how to deal with thorium. What time period, I

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1 guess, does NIOSH feel that they have a robust
2 thorium monitoring program that they could
3 really hang their hat on?

4 Many of these sites, I have never
5 really seen the time frame when you could hang
6 your hat on it, is basically what I am trying
7 to say.

8 MR. ROLFES: What we have in our
9 Pantex bounding uranium and thorium intakes,
10 since we are proposing to use basically two
11 percent -- we would have assigned a depleted
12 uranium intake first, and then assign an
13 intake of thorium-232 equal to two percent of
14 depleted uranium intake on top of those. So
15 we'd reconstruct the depleted uranium intake
16 and then add an intake, two percent of the DU
17 intake as thorium.

18 MR. FITZGERALD: I guess, going
19 back to -- you know, we are talking about a
20 particular system. You are talking about
21 assigning a chronic exposure based on DU. But

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1 wouldn't the workers who were directly
2 involved in the dismantling of that particular
3 system be getting more of the direct intake
4 potential?

5 It sounds like what we are doing
6 is a generic chronic intake factor of two
7 percent for everybody. Right?

8 MR. ROLFES: Correct.

9 MR. FITZGERALD: I am thinking
10 about the workers who are working with the
11 unit directly as opposed to the general
12 operator population. I am just trying to
13 reconcile whether they, in fact, are being
14 shortchanged by that approach or not.

15 MR. ROLFES: I am not following
16 where you're --

17 MR. FITZGERALD: Well, I'm saying
18 it sounds like -- maybe I am misunderstanding
19 you. It sounds like you are assigning a two
20 percent of the DU as being a chronic exposure
21 for all the operators or just the thorium

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1 operators, the ones working on this particular
2 system?

3 MR. ROLFES: What we have -- here
4 is what we have laid out in our Pantex
5 bounding uranium and thorium intakes. Getting
6 back to the uranium intakes, we are using the
7 1990 bioassay data. If an individual doesn't
8 have any thorium monitoring in their file, for
9 example, we would make the assumption that
10 they were potentially exposed to both uranium
11 and also to thorium.

12 So we would assign our uranium
13 intakes based upon the analysis of the data
14 from 1959 up through 1990, about 400 uranium
15 bioassay results which we've proposed here;
16 assign that uranium intake, and add in an
17 intake of thorium equal to two percent of the
18 depleted uranium intake.

19 DR. NETON: Can I interrupt? Am I
20 missing something? I thought that the Working
21 Group is already recommending they can't do

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1 any DU dose reconstructions prior to 1984.

2 CHAIRMAN CLAWSON: This was my
3 next--

4 DR. NETON: If that is true, then
5 this is all irrelevant.

6 MR. FITZGERALD: I know. I am
7 just trying to figure out just --

8 MR. KATZ: Well, it's not -- but
9 that's just --

10 MR. HINNEFELD: Our position is we
11 can do the dose reconstruction.

12 DR. NETON: Right. Right.

13 MR. HINNEFELD: So if, in fact,
14 the Work Group and the Board determine that
15 dose reconstruction for uranium isn't feasible
16 up through '83, then if we are tying thorium
17 intakes, then they are also -- but now we have
18 the years from '84 forward.

19 DR. NETON: Right, but that's
20 slightly different, I mean think about what
21 quality of data we have for thorium. So what

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1 I'll say is it doesn't seem productive for us
2 to debate whether we can reconstruct thorium
3 prior to 1984 until the Board meeting because
4 if the Board accepts the Class Definition
5 prior to '84 --

6 MR. FITZGERALD: This reminds me
7 of the -- wasn't there an issue at Mound where
8 we were going to park something, and then we
9 couldn't do it, because -- as a matter of
10 fact, as far as resources, why don't we wait
11 and apply those resources maybe more
12 efficiently by addressing this later? But
13 just even clarifying the approach would be, I
14 think that's all we're doing is understanding
15 it better.

16 CHAIRMAN CLAWSON: Well, and I
17 will be honest with you. Maybe this is -- you
18 know, I feel that you guys went to some work
19 on this, and we really haven't got into the
20 thorium issues, and I just wanted to make sure
21 that I understood how it was being put,

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1 because the next question I was going to ask
2 was, with what happened today, how will this
3 hold together?

4 MR. KATZ: My point of view is
5 just that we don't know what the rest of the
6 Board is going to say about what the Work
7 Group is going to recommend, but they may then
8 have different issues about the thorium. For
9 some Board Members, the thorium may be a more
10 compelling issue than the uranium. I have no
11 idea.

12 DR. NETON: If the uranium -- if
13 you can't reconstruct uranium --

14 MR. KATZ: I know.

15 (Simultaneous speaking.)

16 MR. KATZ: That is one
17 possibility. Another possibility is Board
18 Members are not persuaded on the uranium
19 question, but they may have issues with the
20 thorium even if they are not persuaded on the
21 uranium, in which case they would need to

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1 understand whether the thorium can be
2 reconstructed.

3 MS. LIN: -- you can reconstruct
4 thorium.

5 MR. KATZ: No? I mean, what if a
6 Board Member says I don't buy it; I think the
7 NIOSH argument is fine for uranium, but what
8 about thorium. Then we don't -- any advance
9 through the question on the thorium thing.

10 So whether you want to just wait
11 and have that discussion, should that arise,
12 that is one thing. But if the Work Group
13 wants to sort of plow that ground now so that
14 it will have been discussed, it is up to you.

15 CHAIRMAN CLAWSON: I had several
16 questions I wanted to get. First of all, I
17 wanted to understand if this thorium --
18 because the way I read it, everything was tied
19 to depleted uranium. If we decided we
20 couldn't do depleted uranium, was there -- or
21 do we have anything else so that we could

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1 cover thorium? That was going to be my
2 question, Jim.

3 I did not understand how the
4 process was, plus also, too, NIOSH has put
5 quite a bit into this, and I know that it was
6 bounding uranium and thorium intake, but they
7 were separated out. I wanted to make sure
8 that I had an understanding of how the thorium
9 process worked, and if this DU problem came
10 into this, did we have another way or is it
11 ultimately tied?

12 My next question out was going to
13 be do we need to address this as uranium and
14 thorium to the Board because they are
15 ultimately tied together.

16 MR. KATZ: You don't need to
17 because you have the uranium and your reasons
18 for the uranium. You don't need to address
19 thorium. The only other issue with thorium is
20 that if you add a Class and some people are
21 not covered and you want to reconstruct their

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1 thorium doses, if you have already decided you
2 can't reconstruct uranium, I think it puts it
3 out of the ballpark because it is based on the
4 uranium. If you can't reconstruct the
5 uranium, then you can't reconstruct the
6 thorium either. They don't get credit for
7 those doses either.

8 CHAIRMAN CLAWSON: Right, and that
9 is why I was wondering if we needed to address
10 that along with the uranium because I want to
11 make sure people understand that that is part
12 of the -- you can't do uranium or thorium.
13 Everything is based on it. That was going to
14 be my next question.

15 DR. NETON: I think what we are
16 going to end up with here, if we continue down
17 this thread, is the quality of the thorium
18 data we have available establishes percentage
19 probably much better after 1983.

20 MR. ROLFES: Yes, there's bioassay
21 data.

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1 DR. NETON: We are going to have
2 similar issues that we have with the uranium.

3 So I don't know that it is going to be a
4 productive use of our time this afternoon to
5 sit here and debate about the quality of the
6 thorium data we have prior to 1983, if in fact
7 it has been decided that we can't reconstruct
8 uranium.

9 CHAIRMAN CLAWSON: Jim, I
10 understand wholeheartedly that maybe this is a
11 futile effort, and maybe it can be just summed
12 up to me as the Work Group Chair, because my
13 question was, and what I was hesitant about,
14 is we had only been talking about uranium. So
15 that is how I posed it.

16 I am wondering if we needed to tie
17 thorium to it, because basically we are into
18 the same ballpark of it. It all depends on
19 the DU. I will be honest with you. The
20 programmatic part of this is baffling to me of
21 what we can and how we do it.

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1 MR. HINNEFELD: This is Stu
2 Hinnefeld, and I just want, for clarity -- I
3 haven't studied this or had any conversations,
4 I guess we could have had these ahead of time.
5 But for my edification, trying to get the
6 dates for this data is collected -- hundreds -
7 - in Pantex, their second bullet, hundreds of
8 Pantex swipes of components were collected and
9 analyzed, and that covers -- what time period
10 does that cover?

11 MR. ROLFES: The swipes that I
12 have seen cover -- you know, I have seen bits
13 and pieces here and there of swipes in the
14 early `60s. However, most of the data that we
15 have available would be during the disassembly
16 time period, which was, let's say, later on in
17 the operating history, during the `80s, `90s.

18 MR. HINNEFELD: Yes, I don't know
19 that we can talk about it, but do we know when
20 thorium weapons, for instance, were in the
21 surveillance program? I am sure we had to

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1 dismantle them because I have seen the
2 document that shows the dismantlement
3 schedule. You guys apparently know which ones
4 had thorium in them.

5 So I know we know what years they
6 had the dismantling. I assume we have some
7 breadth of years that covers the presence of
8 thorium in either a surveillance or
9 dismantlement for both those sections. I know
10 we have dismantlement.

11 MR. ROLFES: Yes, we do have that
12 information.

13 MR. HINNEFELD: You say you have
14 seen some data in the '60s, and then there's -
15 - the bulk of it, you say, was later. Can you
16 give me a year?

17 MR. ROLFES: 1980s is when the
18 true bulk of all the swipe data that has been
19 collected, at least that we have seen so far.
20 We hear that data exists from earlier years,
21 but most of it has been within incident

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1 reports. We found it all in a consolidated
2 box from 1980 and then an electronic database
3 from like 1990 forward.

4 MR. HINNEFELD: So then the 73
5 worker breathing zone samples that didn't
6 apparently show any airborne activity date
7 from what period?

8 MR. ROLFES: That would have been
9 in the '90s.

10 MR. HINNEFELD: Did you say that
11 if we have thorium bioassay for a person, that
12 we would rely on that for that person? Is
13 that what I heard, or are we relying on the
14 ratio for everybody?

15 MR. ROLFES: If they don't have
16 data, we would rely upon that ratio. If we do
17 have data on thorium bioassay, we would use
18 that data for that individual.

19 MR. HINNEFELD: Okay. Certainly,
20 the in vivo would work.

21 Now then the ratio is established

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1 by samples collected on a specific program,
2 W55. So do we know enough about relative
3 abundance of the items of the two materials
4 for the other thorium series to know that that
5 provides us something we can use for all time?

6 MR. ROLFES: Yes, and we selected
7 this particular program as a result of the
8 potential for contamination and oxidation that
9 was based upon some of the worker interviews
10 and also the listing of programs that were
11 identified by the Health and Safety staff at
12 Pantex, which were the worst ones that could
13 have presented a contamination potential.

14 MR. HINNEFELD: Essentially then,
15 the worst of the thorium-containing weapons,
16 in terms of its potential for contamination?

17 MR. ROLFES: Yes. I would say
18 that.

19 MR. HINNEFELD: That is kind of
20 what we said, like W28 is the worst based on
21 our argument as the worst.

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1 Okay, you understand where I am
2 going? We have a ratio set up on this one
3 system, and if it, in fact, has the highest
4 ratio of thorium to uranium in the thorium
5 series weapons, then you certainly have a
6 bounding value. If not, there is an argument
7 that can be made that this ratio doesn't bound
8 the potential ratios that would be encountered
9 in other systems. That is just where I am
10 going, just the logic of it. Things don't
11 work out later on.

12 CHAIRMAN CLAWSON: That was --
13 part of my question was coming from of the
14 earlier years because some of those weapons
15 came on-line and went off-line relatively
16 fast, and the time period we are talking about
17 here, those weapons would have already gone
18 away.

19 I am just wondering how that
20 worked because 55 may have been the worst
21 actor, but we really don't have any data for

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1 the other ones. Were they worse or was 55 the
2 one that we have the most information for?

3 MR. ROLFES: The 55 would have
4 been the worst. It's not the only one that we
5 have information for.

6 CHAIRMAN CLAWSON: Now this is
7 where it really comes back to me, especially
8 looking at the roadmap or whatever you want to
9 call it, because it was very -- you know, get
10 printout at Germantown, stuff like that, and
11 said this is when it came on-line, this is
12 when it went off-line, and this is what it has
13 in them. We really don't have any data for
14 those.

15 I just want to make sure that we
16 are bounding it. From the perspective in
17 hindsight, well, maybe 55 was worse or one of
18 the others. That is where I am going at with
19 this, and part of my question came up with
20 that, plus also what Jim has brought up about
21 how it affects us with the DU.

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1 I am wondering of how to be able
2 to handle the thorium issue. I guess that is
3 what I am looking at because we are kind of in
4 a conundrum right here.

5 MR. KATZ: I think it --

6 DR. NETON: The Class of workers
7 is the same, all workers --

8 CHAIRMAN CLAWSON: Right.

9 DR. NETON: -- or all people who
10 worked --

11 CHAIRMAN CLAWSON: Right.

12 DR. NETON: And it doesn't add
13 anything by saying you can't reconstruct
14 uranium and thorium. It's the same people who
15 are going to be in the Class, unless there are
16 people who only worked with thorium.

17 CHAIRMAN CLAWSON: Yes. You know,
18 they had several different programs that they
19 did deal with a lot of thorium. There were
20 thorium parts that were coming in and so forth
21 like this, and this is why I didn't want to

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1 say that, no, NIOSH can't reconstruct thorium
2 either because this is why I wanted to talk
3 this out -- is, can we? Are we confident we
4 would be able to do that without the data?

5 MR. ROLFES: We have proposed that
6 we can bound both uranium and thorium intakes
7 for all years, basically, in this report. So
8 that is --

9 MR. KATZ: But from your
10 perspective, Brad, once you say you can't
11 bound the uranium, since it requires that
12 uranium data to do the thorium, you are saying
13 you can't do either?

14 CHAIRMAN CLAWSON: Well, yes, that
15 --

16 MR. KATZ: With the exception of
17 where they have personal monitoring on thorium
18 for an individual -- obviously, those
19 individuals you could use it for some
20 monitoring. It is listed in your
21 recommendation that you are making to the

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1 Board that thorium is a non-starter, too.

2 CHAIRMAN CLAWSON: Right. This is
3 my issue. I am sorry that I can't express
4 myself better, but in reading this, it is hard
5 to understand what is tied to what, when I was
6 getting this, and when we went through what we
7 did this morning, this was one of my concerns,
8 but we hadn't talked about it yet, and I
9 wanted to discuss it out and see where we go
10 from there.

11 So, to me, it sounds like that, if
12 we can't -- if the Board recommends we can't
13 do uranium, basically, thorium is going to be
14 right along with it. That's where I was
15 wondering if we needed to put that into the
16 recommendation.

17 MR. KATZ: I think it is fine to
18 note that as a consequence of this, too, and
19 to note that some individuals will have
20 personal monitoring on thorium, and those
21 individuals, of course, might have their

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1 thorium doses reconstructed even though they
2 won't have a complete dose reconstruction.

3 CHAIRMAN CLAWSON: Okay.

4 MR. FITZGERALD: Just one more
5 question. The ratios are based on air samples
6 that were done on the W55 in June of '96. Now
7 this is, unlike some of the other analyses and
8 samples taken -- we are talking about DU --
9 this was taken after they had revamped the
10 overall HP control program for contamination
11 control and air sampling and everything.
12 Presumably, they had down-draft tables and all
13 the things that they had installed.

14 MR. ROLFES: No, they did not.

15 MR. FITZGERALD: Okay. so for
16 thorium, they did not have the upgraded
17 controls?

18 MR. ROLFES: There is no down-
19 draft tables on site that I am aware of at
20 Pantex, you know, with an exception possibly,
21 but it is not going to be routine --

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1 MR. FITZGERALD: That is
2 interesting because we did get some
3 documentation -- I may have to go back and
4 take another look -- that they had upgraded
5 the control system, including a down-draft
6 table to reduce the dissemination
7 contamination for the DU program -- DU system,
8 W28. This is post-'89. I was wondering if
9 those same kind of controls were put in place
10 for thorium, but you are saying there was no
11 upgrade of those kind of controls after the
12 incident.

13 MR. ROLFES: I haven't seen any
14 documentation of a down-draft table at Pantex.

15 MR. FITZGERALD: Okay. Well, that
16 is something that we have a number of sources
17 on. So the notion there was to improve the
18 contamination control, given the fact that you
19 had this stuff that was flying around.

20 What I am trying to get to in this
21 thing -- I guess we can investigate that

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1 further, but if the controls for the 55
2 program in '96 -- this is getting way down the
3 pike -- were much improved, given all the
4 experiences and lessons learned, then your
5 samples, I would assume, would be much lower
6 than what you would have found maybe 10 years
7 before.

8 I am just trying to reconcile
9 whether or not that would --

10 (Simultaneous speaking.)

11 MR. HINNEFELD: I think, though,
12 that would speak to the total activity --

13 (Simultaneous speaking.)

14 MR. HINNEFELD: -- but would
15 really, with the additional controls, would
16 they preferentially collect the thorium versus
17 the uranium? It would seem like it would
18 collect both contaminants to the same extent
19 in general.

20 MR. FITZGERALD: Maybe. I was
21 just trying to think how this is going to be

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1 run out because we are taking very late
2 samples and then using those samples to create
3 ratios to apply back into the '60s, and I am
4 just trying to make sure I understand how that
5 is being proposed.

6 So the notion is that they would
7 be equivalent -- the ratios would end up being
8 equivalent, irregardless of any upgrades that
9 may have occurred, the major overhaul of the
10 system that took place in '90-'91, that kind
11 of thing. This normalization question, I
12 guess, is what I am raising.

13 MR. HINNEFELD: Well, it would
14 seem to me that, going forward, there are a
15 number of things that could happen at the
16 Board. The Board could act in accordance with
17 the recommendation of the Work Group, in which
18 case everything '83 and earlier, unless a
19 person got bioassay data that is off the table
20 and we can't be -- then the thorium post-'83
21 becomes part of the overall post-'83 Class.

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1 We know we are going to continue on. So that
2 is one outcome.

3 Another outcome would be that the
4 Board would say, well, you haven't convinced
5 us on the uranium; maybe there -- maybe NIOSH
6 has already -- that there is a way to do this.

7 And at that point, where we are today is that
8 thorium would be an open question. We
9 haven't explored it. And this report is
10 pretty recent, you know, people really haven't
11 had much time to evaluate this report. So
12 that would slide it out.

13 I am just trying to think of what
14 other possible outcome could come out of the
15 Work Group. I mean, I can't. That is pretty
16 much it, right?

17 MR. FITZGERALD: To me, we could -
18 - I'm sorry, go ahead.

19 MS. LIN: If the Board also
20 decided that the '84 to '89 data was good
21 enough to be back-extrapolated as the basis

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1 for thorium, you can use only that five years
2 for thorium.

3 DR. NETON: Right. We still have
4 to address is the thorium back-extrapolation
5 valid as well.

6 MS. LIN: So you still just have
7 to address --

8 MR. FITZGERALD: That is kind of
9 what I was driving at.

10 DR. NETON: The question of the
11 uranium back-extrapolation is on the table.
12 The Board says, well, we agree that they can
13 back-extrapolate, but then the thorium back-
14 extrapolation is still out there.

15 MR. KATZ: That is what I raised
16 originally.

17 DR. NETON: And that is what I was
18 trying to point out earlier. We could talk
19 all day.

20 MR. FITZGERALD: I think that is
21 all I am going to raise, but again it strikes

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1 me that one contrast with the back-
2 extrapolation issue for DU is the fact that we
3 are using data that even actually comes more
4 recent in time and after all the other --

5 DR. NETON: And it has its own
6 nuances such as you pointed out, that it is a
7 ratio as opposed to an actual activity.

8 MR. FITZGERALD: But I would
9 disagree. If this is a question we are going
10 to know in a couple of weeks, then I would --
11 you know, if there are other questions, we can
12 certainly look at this later. I would propose
13 that we wait and do our research after we have
14 some clarity as to where this goes.

15 CHAIRMAN CLAWSON: And I
16 understand that. I'm kind of new to this, and
17 I just wanted to make sure, though, that what
18 I was addressing or bringing forth before the
19 Board was correct and that I could portray it
20 to them in the right content because there are
21 things that are tied to it.

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1 When I read this, I didn't know if
2 there was another process that NIOSH had that,
3 no, we can do this. I didn't want to go in
4 and say that you can't do thorium either if
5 NIOSH did have something else. That is why I
6 was bringing up the question, is if I ought
7 to, in bringing this to the Board, bring it up
8 as uranium and thorium.

9 Jim, I understand fully what you
10 are saying. I guess, more for me, I was
11 wanting to make sure that what I am presenting
12 to the Board and also to the public is correct
13 and not saying something that you guys might
14 have something different.

15 So is there any more discussion on
16 the White Paper of uranium and thorium that
17 anybody wants to address? Bob or Phil, do
18 either of you have anything that you wanted to
19 say on thorium?

20 MEMBER PRESLEY: I am fine right
21 now. This is Bob.

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1 CHAIRMAN CLAWSON: Okay, thank
2 you, Bob. And nothing from Phil? Maybe we
3 can continue on.

4 MEMBER SCHOFIELD: No, I don't
5 have any comments there, Brad.

6 CHAIRMAN CLAWSON: Thanks, Phil.

7 Okay, NIOSH's response to the SC&A
8 Draft Completeness and Adequacy Review for the
9 Pantex Plant. I guess, Mark, it is up to you.

10 MR. ROLFES: All right. Let me
11 see if I can find my hard copy of this. All
12 right.

13 I guess a lot of the same issues
14 that we have been discussing have primarily
15 been related to, you know, our dose
16 reconstruction methodology for the earlier
17 years. How do we account for the lesser
18 numbers of uranium bioassay? There were some
19 questions regarding external dosimetry.

20 I don't know if we want to go
21 through each of the issues that are presented.

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1 I mean, the first issue here was that not all
2 workers were monitored, and we understand
3 that. There is a reason why early workers
4 weren't monitored, really because there were
5 no radioactive materials on site. They were
6 focusing on the production of high explosive
7 components.

8 The only people who were monitored
9 in those very earlier years were the
10 radiographers. As you see fissile materials
11 coming onto the site in the late 1950s, you
12 see an increase in monitoring, external
13 dosimetry, and then also as well you see the
14 bioassay sampling program beginning in 1959.

15 I guess on to -- I don't know.
16 Would you like for me to go through each of
17 the sort of summary issues?

18 CHAIRMAN CLAWSON: I guess we
19 could question that not all the workers were
20 monitored and so forth like that.

21 MR. FITZGERALD: Can I address one

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1 thing, though?

2 CHAIRMAN CLAWSON: Sure.

3 MR. FITZGERALD: This is one of
4 these "ships passing in the night" issues.
5 The Data Completeness Report -- you remember
6 our discussion in the May Working Group
7 meeting was held up in DOE review for about
8 four months, and didn't actually get forwarded
9 until about the time of the Work Group
10 meetings. We couldn't address it there.

11 During the Work Group meeting,
12 going through this revised matrix, we actually
13 closed some of the issues or at least
14 dispositioned some of the issues, and that
15 account is in here, I believe. Yes, down
16 below, if I can refer you to this package.

17 So this is kind of a curious
18 situation. We had issues back in December --
19 November-December when this White Paper was
20 put together on data adequacy, and it got into
21 the system and popped out of the system after

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1 six months. In the meantime, we had a Work
2 Group meeting where we engaged on some of
3 these issues and reached some degree of
4 closure.

5 I just want to provide that
6 backdrop because I would certainly hate to re-
7 fight some -- or not re-fight, but re-discuss
8 some of these issues that, frankly, we've
9 already were able to disposition at the last
10 Work Group meeting, and that is all, I think,
11 laid out in this matrix.

12 So what I would suggest, because I
13 sort of recognize this issue now because of
14 the timing question of these different
15 reports, is that perhaps we could review this
16 -- we have only had it for a couple of days
17 anyway; so we haven't had a real good chance
18 to look at even the reference documents and
19 data that are behind this -- and disposition
20 it with a view toward what occurred at the May
21 meeting.

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1 So if it has been closed, sort of
2 God bless, you know, we are fine, and whatever
3 issue we might have had originally we were
4 able to work out, and just kind of narrow it
5 down to what may still be outstanding issues
6 and maybe see where we are going with that. I
7 think in the Germantown discussions, I think
8 we narrowed it down to issues like uranium and
9 thorium, and felt that some of these other
10 issues, while legitimate, were -- and I think
11 you say this in your piece -- were beginning
12 to tilt toward Site Profile.

13 So maybe we need to take a good
14 look at this, array it against the results of
15 the May Work Group meeting, and see what is
16 left. I don't think, frankly, there are a lot
17 of big issues left. There are some issues
18 that we need to disposition.

19 MEMBER BEACH: Joe, with that,
20 when did you -- the latest matrix I have was
21 May 2011.

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1 MR. FITZGERALD: Yes.

2 MEMBER BEACH: Is that the most
3 recent?

4 MR. FITZGERALD: That is the most
5 recent, and --

6 MEMBER BEACH: Has that been
7 updated to reflect the minutes or what we
8 discussed in the May meeting?

9 MR. FITZGERALD: This was updated
10 May 25th. So, yes.

11 MEMBER BEACH: Because mine still
12 says March. It says cover letter written May
13 2011, and then in the body of it, it says at
14 the bottom -- it says March 27, 2008. So that
15 is why I was questioning whether I --

16 MR. FITZGERALD: Yes, I had the
17 one that has updated May 25, 2011 on the lower
18 righthand corner.

19 CHAIRMAN CLAWSON: You are right.
20 You guys haven't even had time to be able to
21 really look at that.

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1 MR. FITZGERALD: We can go through
2 it. I just want to suggest that, you know,
3 this is maybe a little confusing, given the
4 progress that was made on some of these issues
5 at the last Work Group meeting, and the fact
6 that the White Paper on data completeness was
7 held up so long that, by the time it did get
8 in, we had made some progress on some of those
9 issues, and that is laid out. I am sure it is
10 laid out in the minutes, but I think, based on
11 the update of the matrix, that maybe it will
12 take care of it from that standpoint. It is
13 up to you.

14 MR. KATZ: I am just thinking,
15 between the new paper and Mark's presentation
16 on that and the matrix, you are going to need
17 to, at this Board meeting, also cover that
18 topic. So to the extent that -- some of it
19 may not be resolved yet because you haven't
20 had a chance to dig into the new material, but
21 to the extent that things have been resolved

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1 and then you know what work there is to do, it
2 would be good to be telling the Board where
3 that all stands. So whatever discussion is
4 useful for that, you should have.

5 MR. FITZGERALD: Yes, except we
6 haven't had a chance to really go behind the
7 new analysis, given the fact we have had it
8 for a couple of days. I am just saying that
9 we can listen to the presentation, but I don't
10 think we have anything to clarify or respond
11 to at this point. It is just too early.

12 It is up to you, Brad. What do
13 you want to do with this?

14 CHAIRMAN CLAWSON: I don't know
15 really what benefit it would bring. We have
16 got several things that have come to closure.
17 This was, at the last Work Group meeting, I
18 believe, was something that we were waiting
19 for from NIOSH, and you guys haven't even had
20 a chance to review what has been said.

21 I think it would be -- I don't

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1 think it would do us any good to go through
2 this unless there is something that Mark
3 wanted to bring out specific that changed. I
4 notice that there was a few things in there
5 that NIOSH had decided to change and, I guess,
6 give Mark -- I guess my biggest thing was to
7 make sure that Mark had an opportunity to
8 express this paper that they did all this work
9 on off-line.

10 MR. ROLFES: Well, thanks, Brad.
11 I appreciate that. I think everything -- you
12 know, the majority of everything -- as Joe did
13 say, we came to agreement on just about
14 everything. It was the basis for
15 reconstructing uranium and thorium intakes,
16 which was the primary issue that we left with
17 at the last Work Group meeting.

18 I think we have come to agreement
19 or decided that, you know, the other issues
20 aren't SEC issues, that we are able to bound
21 doses for any of these other issues, and so we

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1 sort of left it as Site Profile type issues.
2 Which correction factor do we apply for this
3 or which correction factor adjustment do we
4 make for that sort of issue?

5 I don't believe, you know, there
6 is anything -- the most significant things
7 that we put together for this meeting were
8 really the information that allows us to bound
9 uranium and thorium intakes for all
10 operational years.

11 CHAIRMAN CLAWSON: Then, to me, I
12 guess this is basically in your hands, Joe.

13 MR. FITZGERALD: Yes. I'm just
14 saying, for efficiency's sake, since we have
15 actually made progress on these issues and,
16 for example, tritides and some of the other
17 ones, that I think we have agreed that these
18 have tilted toward Site Profile questions.

19 I think for purposes of the
20 meeting coming up, we can go through what
21 happened at the May Work Group meeting, you

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1 know, certainly reflect this White Paper and
2 share with you back where we think things
3 stand on the balance of the issues outside of
4 uranium and thorium, and then try to
5 characterize that as accurately as we can,
6 understanding that there were a lot of things
7 that were going past each other at the same
8 time.

9 So we will take that on to go
10 ahead and work that issue, and be able to put
11 in your hands collectively now here is what it
12 looks like as far as where these came out. I
13 don't think we got transcripts for May, did
14 we, or did we? We do now? Okay.

15 CHAIRMAN CLAWSON: Yes, there was
16 kind of a mix-up. It got kind of lost.

17 MEMBER BEACH: No, the January one
18 did.

19 CHAIRMAN CLAWSON: The January
20 ones got lost.

21 MEMBER BEACH: But they are both

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1 out.

2 MR. KATZ: They didn't get lost,
3 but anyway --

4 CHAIRMAN CLAWSON: No, excuse me.
5 They didn't get -- they hadn't reviewed them,
6 and I just got a deal yesterday to review them
7 and go from there, and I thought, well, wait a
8 minute, I just took these and -- well, then --

9 MR. FITZGERALD: I will certainly
10 make use of the May transcripts just to make
11 sure that everything seems to be where it
12 needs to be as far as what came out, so there
13 is a record, a public record that brings us up
14 to date. But that would be, I think, the way
15 to deal with this one.

16 CHAIRMAN CLAWSON: Okay. Well,
17 and I also know that you haven't had time to
18 see it much.

19 So we can continue on. We have a
20 summary, and I know that we worked on this
21 down at Pantex.

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1 MR. FITZGERALD: Yes, let me make
2 sure. Is Kathy on the line? She put her
3 heart and soul in this piece. I don't want to
4 shortchange, if she had any questions for
5 Mark. I don't think she is, though. Okay.

6 CHAIRMAN CLAWSON: I know that we
7 went through quite a bit to be able to get
8 this memo out, and I wanted to know if you --
9 we have gone quite in depth through it, but if
10 you want to give us a summary of what we found
11 down there and what we learned.

12 MR. FITZGERALD: Yes. We focused
13 on the W28, just because out of the Germantown
14 meeting, given the timing of the on-site
15 visit, it was natural to try to pin down some
16 of the questions that came up in our
17 Germantown meeting as far as gaps in our
18 knowledge and timing questions and scoping
19 issues.

20 So I wanted to highlight that in
21 this note that we sent through DOE to make

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1 sure it was clear. These are just basically
2 the highlights. The originals are in
3 Germantown, and I would invite you to look at
4 the transcripts of the interview we did.

5 The interview was pretty good. We
6 talked to HPs and rad techs, but we finally
7 got around to talking to a sort of operating
8 site engineer who seemed to really have his
9 finger on a lot of the operational issues. We
10 found that quite valuable and got a lot of
11 insights out of this. We allude to some of
12 the comments that he had on the W28, but he
13 also had a number of general comments on
14 operations.

15 At any rate, the highlights on
16 this thing, again, is that -- I think I said
17 this earlier -- is that you did have the 28s
18 coming through on a continuous basis,
19 different types of dismantlements, that he in
20 his view felt there were at least two more
21 incidences or releases before the one that we

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1 have been talking about that were, in his
2 view, as bad, if not worse, from the
3 standpoint of contamination. But, again, that
4 was a recollection.

5 MR. ROLFES: Are you aware of
6 which incidents they were? Did he mention --

7 MR. FITZGERALD: No. We were
8 trying to -- obviously, trying to pin down,
9 but off the top he couldn't remember exact
10 dates. But what he was trying to say is the
11 same thing that, I think, we have been asking,
12 too, which is what can you recollect 20 years
13 ago in terms of these incidents.

14 His take, though, on the '89 -- is
15 it '89 or -- '90 is the data; '89 was the
16 release. His characterization, and he was
17 there -- he was assigned to the 28 program at
18 that time.

19 His take on it was simply, you
20 know, we had these releases in the past, and
21 what changed in '89 was the environment that

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1 was going on in the Department in terms of the
2 scrutiny, and the workers were becoming more
3 mindful and they finally raised their hand,
4 and management in that time frame really
5 decided to take action.

6 It wasn't so much the incident
7 that pushed things. It was just, frankly, the
8 circumstances that the plant was under and the
9 fact that DU was finally seen as a
10 radiological issue that had to be addressed.
11 He felt that that is what kind of made this
12 thing as noteworthy as it came to be, and that
13 other than that, it was business as usual.

14 Before that, they had releases of
15 the same nature, and there wasn't that cloud.

16 You know, the circumstances weren't such that
17 the workers would have raised their hand, and
18 it is tough for a worker in the circumstances
19 of Pantex to complain about contamination, as
20 you can imagine.

21 So, yes, the circumstances in '89

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1 were such that this happened, but his point
2 was it could have happened well before that,
3 given the actual contamination situation with
4 the 28.

5 CHAIRMAN CLAWSON: And, Mark, he
6 did call out that it wasn't numbers; it was
7 the inner parts of it. He said, these
8 problems will but, you know as well as I do,
9 we are not going to be able to talk outside of
10 the confidential area.

11 When we put it out -- and what
12 came forth to me was when we said, and we
13 understand that the 28 was really the worst
14 one, he said, no, it wasn't; there's just more
15 who were working on it. We had this, that it
16 is just the change of the environment in this
17 time that it became more brought forth. He
18 says, in my personal opinion, we had several
19 ones that were a lot worse. But he tied them
20 to an object and stuff, you know, that we
21 won't be able to discuss.

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1 MR. ROLFES: That is why I was
2 asking. You know, I wondered what the
3 specific occurrences were because we do have
4 documentation of other incidents similar to
5 the B28. That is why I wondered. I wanted to
6 get a sense of which ones he was referring to,
7 so that we could do a comparison or a source
8 term analysis to basically ensure that the W28
9 exposure pathway is truly bounding. That is
10 why I am trying to ask for what specific
11 sources.

12 MR. FITZGERALD: It was the 28,
13 but he couldn't pinpoint the actual release
14 time frame or, if there was an incident, what
15 was the incident that might have been worse.
16 We were trying to get some more specifics,
17 just so we would have that, but he could not
18 remember. And to be fair about it, 20 years -
19 - I just wanted to understand, did this stand
20 out from a magnitude standpoint to be the most
21 significant release or -- and his response

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1 was, not from a magnitude standpoint, just
2 from the standpoint that management -- it was
3 significant from a managerial standpoint, and
4 management responded. That was the difference
5 with that particular incident, more than
6 anything else.

7 MR. ROLFES: I am just saying, I
8 have seen similar responses earlier on besides
9 the W28 incident. That is why I wanted
10 clarification because there are bioassay data
11 collected as a result of other contamination
12 incidents that occurred with different weapon
13 programs surrounding this time period as well.

14 MR. FITZGERALD: He did say it was
15 the 28, but he just couldn't pinpoint any
16 particular event as a certain date or -- that
17 was all we could get out of him at that point.

18 MR. HINNEFELD: And you
19 interviewed this person this year?

20 MR. FITZGERALD: This was the last
21 trip, right. The raw notes are in Germantown,

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1 and the name is there, too. So it is all --
2 He is down there. He is still working.

3 CHAIRMAN CLAWSON: Actually -- and
4 this is what is interesting about him -- he
5 lives and works at Pantex and has for numerous
6 years, but he works for Los Alamos now, as
7 being there. This is why he didn't show up as
8 a Pantex employee, but he is there at Pantex.

9 MR. ROLFES: And there is Sandia,
10 Livermore, Pantex people down there.

11 MR. FITZGERALD: That is why he
12 didn't jump out earlier because he wasn't
13 listed as a Pantex employee.

14 The other thing that he indicated
15 -- and this goes to the earlier discussion we
16 had on the pre-1958. He sort of said, well,
17 you know, just so you know, while the W28
18 series was apparently the earliest series that
19 was viewed significant at Pantex, units
20 containing DU from earlier series -- the Mark-
21 15 Mod 2 was an example -- may have been

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1 handled earlier at Pantex.

2 So he was just cautioning that, as
3 far as DU significance, there were systems
4 predating the 28 that we ought not just forget
5 about or not at least address that early on.
6 So he did mention that.

7 MR. ROLFES: That is pretty much
8 the same kind of program as the W28.

9 MR. FITZGERALD: And you can read
10 the memo. I mean, they were in disassembly
11 and heavily oxidized units.

12 The initial work was done in the
13 absence of gloves and respiratory protection.

14 If a worker requested a dust mask, the
15 company provided one, and this is the approach
16 pretty much through '89, at which point down-
17 draft tables were installed.

18 So I actually read that. Before
19 we interviewed him, I had read that elsewhere.

20 So that would be something I would love to
21 know for sure because I have heard it in more

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1 than one place that down-draft tables were
2 installed after the incident for purposes of
3 contamination control.

4 We talked about worker categories.

5 MR. ROLFES: Joe, could I ask a
6 question about the previous statement there?

7 The initial disassembly of all
8 both clean and heavily oxidized weapons
9 doesn't involve gloves or respiratory
10 protection because you have got a complete
11 unit coming out of the field. You know, the
12 initial work is done outside of a Gravel
13 Gertie where there is essentially no potential
14 for exposure until you really start breaking
15 the thing down into pieces.

16 So all initial work -- I mean, the
17 first initial work might be, you know, some
18 loosening of some screws or bolts or
19 something. So I just wondered if -- what you
20 meant by the initial disassembly. I was going
21 to say, the initial disassembly of any kind of

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1 --

2 MR. FITZGERALD: Well, I didn't
3 say initial disassembly. I said during the
4 disassembly of heavily oxidized units.

5 MR. ROLFES: The initial work?

6 MR. FITZGERALD: The initial work
7 was done in the absence of gloves and
8 respiratory protection.

9 MR. ROLFES: I am just saying that
10 both heavily oxidized as well as clean, you
11 know, because it is not every unit is
12 oxidized, obviously, and the majority of them,
13 in fact, aren't. So I just wondered. You
14 know, the initial handling of any component
15 would be done without gloves or respiratory
16 protection.

17 MR. FITZGERALD: Well, I think in
18 terms of dismantlement down to the DU, what we
19 are getting from the interview and from the
20 documentation was just that they did not have
21 the respiratory protection. They could, in

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1 fact, get some of these items, but they had to
2 request it. So that was just the distinction
3 that was being offered. It wasn't a rigorous
4 procedure to wear that or don that.

5 MR. ROLFES: Okay. I just want to
6 point out that we wouldn't reduce the intake
7 that we assign based upon respiratory
8 protection factors.

9 MR. FITZGERALD: No, no. I didn't
10 put it there for that intention.

11 The next issue was simply to point
12 out the one we talked about, that the types of
13 workers -- again, this is from the interview -
14 - types of workers that would be implicated in
15 terms of the DU contamination were the ones I
16 have listed.

17 Not surprisingly, they involve
18 sort of a broad range of people that would
19 frequent those areas, not just the operators,
20 but technicians, the maintenance staff, safety
21 people, handlers, folks that actually moved

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1 things in and out of the bays, and that we
2 talked about the beryllium as an issue, just
3 as a marker, if you may, for the possibility
4 that, in fact, the DU was likewise spread in
5 the same way.

6 That was the comment that was made
7 again by the engineer who was familiar with
8 this thing, and he brought that up. You had a
9 question?

10 MR. ROLFES: I was just thinking.
11 I mean, you know, it is hard to compare,
12 because I don't know if -- you know, there
13 were different requirements for fissile
14 materials and high explosives where that work
15 had to be done. So beryllium work might have
16 been done somewhere outside of the bays
17 themselves.

18 So it is not really a direct -- I
19 am just trying to think. You know, it could
20 speak, obviously, to contamination being found
21 in other parts of the plant, but it doesn't

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1 necessarily say that uranium would also
2 follow.

3 MR. FITZGERALD: No, I think it is
4 just a cautionary note that before they did
5 the beryllium survey, they felt the beryllium
6 was confined to the actual handling locations,
7 and it turned out it was actually fairly
8 widespread. But that is not uncommon at other
9 DOE sites, actually.

10 In this case, I think the issue is
11 what would have precluded spreading that kind
12 of contamination outside the cells when you
13 have, as noted in the Albuquerque audit, that
14 you really didn't have a rigorous
15 contamination program and self-monitoring and
16 other things, egress monitoring, that would
17 have guarded against someone having it on
18 their coveralls and going out into the hallway
19 or the office areas, and over time that,
20 obviously, would have contaminated those
21 areas. So just again an observation.

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1 It actually bears on this question
2 of what workers would be located in this.

3 This one is baffling to me,
4 because -- well, I will have to go back. We
5 did request the documentation. We had
6 material, actual material, at Pantex that
7 should be in Germantown that talked about the
8 spectrographic analysis of black powder.

9 This came up in our discussion, as
10 you recall, a couple of times before that,
11 that even though workers were complaining
12 about being covered with black powder -- I
13 think, Mark, either you or somebody, maybe it
14 was Mel, was talking about, yes, but this was
15 hardly depleted uranium; it could have easily
16 been a lot of other things, including lead.

17 So we were looking for that when
18 we down to the site, and actually we did find
19 a document that nailed it down because when
20 they had the incident, they actually did a
21 spectrographic analysis following the incident

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1 to establish what the composition was.

2 I don't know if I read a different
3 document, but what I reported was predominant
4 presence of uranium followed by smaller
5 concentrations of lead, chromium, cadmium, and
6 other metal compounds.

7 Jim, what you were saying seemed
8 to be the opposite. So that is puzzling to
9 me, and when I get back to Germantown, I will
10 go back to that document and get you a
11 specific reference. It is not cleared yet,
12 but --

13 MR. HINNEFELD: It will be in the
14 holdings in Germantown.

15 MR. FITZGERALD: Yes. So the
16 spectrographic analysis following the incident
17 -- the black powder, I think, is very germane,
18 but what I recorded, it was mostly depleted
19 uranium but did, in fact, include other
20 concentrations of metals.

21 DR. NETON: Well, that's

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1 inconsistent with how they followed up the
2 incident, though, because they took blood lead
3 samples because they felt that the blood was
4 going to be a more sensitive indicator because
5 the lead was higher than the uranium.

6 MR. FITZGERALD: Like I said, I
7 say it is baffling because it is baffling.

8 DR. NETON: I am not saying the
9 blood level's the right way to go.

10 MR. FITZGERALD: Well, there might
11 have been enough lead because I had lead
12 recorded second. It might have been enough
13 lead.

14 DR. NETON: It was -- two percent,
15 and uranium was under one percent.

16 MR. ROLFES: There were also zinc
17 protoporphyrin samples that were taken as a
18 result of that incident.

19 MR. FITZGERALD: And this is a
20 secondary issue because we are not talking
21 about how big the source term is per se, but I

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1 again wanted to hit that issue while we were
2 down there because of the questions that were
3 raised about the black powder.

4 The last item, you know, we did
5 look at Medina-Clarksville, and I don't know
6 if that is germane for this work -- probably
7 not. So I will leave that out, but again
8 there is some information that was coming out
9 of that, I guess the Work Group did -- but it
10 is not germane to the SEC question. So I am
11 going to leave that out unless you feel
12 otherwise, Brad, on Medina-Clarksville. It is
13 in the memo.

14 CHAIRMAN CLAWSON: Right. It is
15 just that it pertains a little bit to Pantex
16 because at this time Pantex was shipping to
17 Medina and Clarksville, and probably this Work
18 Group -- you know, we are kind of hitting all
19 three of these, and the one good person that
20 came from -- from Medina?

21 MR. FITZGERALD: Yes.

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1 CHAIRMAN CLAWSON: -- to Pantex
2 that was still there that is seventy-something
3 --

4 MR. FITZGERALD: Yes. He was the
5 interviewee.

6 CHAIRMAN CLAWSON: Just in terms
7 of the DU because -- the question being, Ted,
8 is because the earlier years DU was there a
9 lot sooner than '58.

10 MR. KATZ: At Medina, you mean?

11 CHAIRMAN CLAWSON: No, at Pantex,
12 but we couldn't -- we found shipments of HE
13 which -- along with, but we couldn't find
14 anything that called it right out. They
15 called it by a part number, and we couldn't
16 find anything to tie it to that.

17 You know, we can keep that with--

18 MR. KATZ: Exploring that early
19 period.

20 CHAIRMAN CLAWSON: Right, with the
21 earlier periods.

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1 MR. FITZGERALD: But there is a
2 considerable amount of information that was
3 collected on that interview as well as the
4 documentation on Medina and Clarksville that
5 is also in Germantown. So I think a lot of
6 progress was made on that, too. So just for
7 the record.

8 That is kind -- again, that is the
9 tip of the iceberg. That is all we could get
10 through the system for this meeting.

11 CHAIRMAN CLAWSON: And that took a
12 lot of effort, which I have been in contact
13 with Mr. Lewis on, and he is trying to assist
14 me. I know that we have kind of taken a hit
15 with the problems with Michael, too. So I am
16 sure that Isaf will help us through that, and
17 we will go from there.

18 I guess my question is is we have
19 got the Work Group's recommendation for the
20 full Board --

21 MR. KATZ: Yes. I would just like

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1 to suggest that Joe help you put together some
2 flesh on the bones for when you make your
3 recommendations, so that you have sort of some
4 bullet points on what is the basis behind for
5 what you have discussed today, so that you can
6 -- you know, because the Board -- this is all
7 coming out of the blue to the Board. So they
8 are going to need some context.

9 I am planning to send to all the
10 Board the documents that we have that we can
11 provide.

12 CHAIRMAN CLAWSON: Right.

13 MR. KATZ: As well as transcripts,
14 so that the Board can review all that material
15 and have some background when they hear from
16 you, but I would try to do a reasonably robust
17 presentation because, again, they are coming
18 at this pretty new, to be frank.

19 And likewise for DCAS. You know,
20 there's two stories to tell, and DCAS will
21 want to tell a story, too, to help the Board

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1 get up to speed and perspectives on these
2 matters.

3 MR. ROLFES: Just as a matter of -
4 - if it is for the next Board meeting, though,
5 the problem is our presentation deadline has
6 already passed for the meeting. So if we were
7 to give a presentation to the Board, it would
8 just have to be like a verbal thing because it
9 is sort of past our --

10 MR. HINNEFELD: I can waive that.
11 We will get something together.

12 MR. KATZ: Okay. I think it is
13 important that the Board get some context.

14 MR. HINNEFELD: What we presented
15 here was essentially a weight of the evidence
16 argument. Here are some pieces of things, and
17 these are our reasons to believe that what we
18 presented is a bounding approach for the work
19 there. Okay.

20 So our presentation should be very
21 concisely that, you know, not a lot of other

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1 stuff, not a lot of talking about -- you know,
2 just these are the pieces of information that
3 we are using to conclude that this period was
4 the bad period, and we can bound it based on
5 this data set, and that's it. That is
6 essentially the extent that we would do.

7 I don't see it being particularly
8 long, but we really should provide, because
9 you know, our Evaluation Report still says
10 dose reconstruction is feasible. We need to
11 provide a concise description of why we think
12 that is true.

13 MR. KATZ: Right. And, again,
14 they will have the transcripts from the Work
15 Group meetings that we have had previously.
16 They won't, obviously, have the transcript for
17 this one, but that is part of what will get
18 accomplished in the summary that Joe helps
19 Brad with. Circulate it if you can -- if you
20 have time.

21 MR. FITZGERALD: Right. I think

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1 it certainly needs to be up by early next
2 week, and I will use words that are already on
3 the table and have been screened by DOE -- or
4 not screened by DOE, but -- yes, screened by
5 DOE, so I don't have to send this presentation
6 through. It won't be ready by then.

7 MR. KATZ: And it should be
8 completely derivative.

9 MR. FITZGERALD: Right, derivative
10 and focused, as Stu is pointing out, on
11 strictly the issue at hand which is the
12 depleted uranium.

13 MR. HINNEFELD: Yes, and
14 particularly why is something -- I think we
15 have presented the various things here. We
16 should try to get it together pretty quickly
17 because your discussion is going to be why is
18 this not convincing to us.

19 MR. KATZ: Well also touch on
20 thorium and touch on completeness of data,
21 too.

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1 DR. NETON: Why don't you believe
2 we can extrapolate before --

3 MR. FITZGERALD: Before 1984.

4 MR. KATZ: Just so that they have
5 a sense of what was discussed here in context
6 with the transcripts that they get that lead
7 up to this meeting.

8 CHAIRMAN CLAWSON: The January
9 transcripts -- I haven't reviewed them for
10 accuracy yet.

11 MR. KATZ: But that is fine for
12 the Board. The Board can get them before --
13 it is not a problem for the Board.

14 CHAIRMAN CLAWSON: They are
15 online.

16 MR. KATZ: It would be good to get
17 them, be able to review them, the public --
18 well, the public gets it, too, PA cleared.
19 They just don't get the one with your stamp on
20 it.

21 CHAIRMAN CLAWSON: Right. I just

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1 wanted to make sure that you knew that these
2 just came to me, and I am --

3 MR. KATZ: No, that is fine. So
4 it is not a worry that the public has it, too,
5 in one version.

6 CHAIRMAN CLAWSON: Okay. We are
7 through the agenda. I want to make sure that
8 everybody has had an opportunity to voice what
9 their concerns are, or if there are any
10 questions on our path forward.

11 I have several, to make sure that
12 SC&A is covered by their tasking or whatever,
13 but there shouldn't be any ongoing problems,
14 and when we bring this up, we are going to
15 look at the earlier years and on, but what we
16 are going to bring before the Board is '58 to
17 the end of '83, and that we will continue,
18 because I want to make sure that the
19 petitioners understand that things have kind
20 of changed a little bit today and that we are
21 still looking at that. I just want to make

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1 sure that we are there.

2 My question -- and I know -- I
3 guess my question is do we tie -- how we tie
4 thorium to this DU concern. Do I need to
5 bring that up? Do I need to change what I am
6 bringing forward to the Board and add thorium
7 to it or would it be understood that thorium
8 and uranium --

9 MR. KATZ: I think you just need
10 to give the context that this will also mean
11 that thorium can't be reconstructed because
12 thorium is dependent on the uranium
13 reconstruction, the DU reconstruction. I
14 think that's probably adequate.

15 CHAIRMAN CLAWSON: You know, we
16 came out with Medina and Clarksville on here,
17 and I just wanted to help everybody understand
18 why this kind of played into it. It is
19 because this is probably going to be the Work
20 Group that is able to do those, but also, too,
21 when we go to these sites, it better utilizes

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1 our time, because it is interesting that Los
2 Alamos and Sandia and everything else like
3 that is a large amount of the data for these
4 three sites, Pantex, Medina and Clarksville.
5 There is a lot of data there, and that is why
6 SC&A sometimes gets double things that they
7 are looking at down there. That is why we got
8 into that.

9 MR. KATZ: I would just also note
10 for your thought about the Work Group taking
11 on then the new assignments and so on, and we
12 have Sandia coming up, too. Right? A Work
13 Group on Sandia is getting assembled, I
14 believe. Right? Jim has asked for volunteers
15 for that, and we actually have a couple of
16 more Board Members who will get cleared, who
17 will get clearances to work on these Work
18 Groups, too. So that is going to be helpful.

19 MR. FITZGERALD: And by the way,
20 that is going fairly well with Sam, just to
21 kind of weave us in on it. So we are not

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1 starting from scratch.

2 MR. KATZ: Yes. So that has been
3 very good, I think, the coordination on that.

4 MEMBER BEACH: So can we go over
5 action items? I have a couple of them listed,
6 but I wanted to make sure I didn't miss
7 anything.

8 For -- because I know NIOSH is
9 going to look at the uranium for the years '84
10 to '91 and then '51 to '58. Correct? I think
11 that was the only assignment you guys have.

12 DR. NETON: Fifty-one to '58 is
13 what it is.

14 MEMBER BEACH: That one is not
15 going to be included?

16 DR. NETON: Well, I had thought
17 that our only action item was to go and put
18 forth our model for -- analysis model for 1988
19 '89 -- based on the 1990 data.

20 MR. HINNEFELD: Yes, it would be
21 '84 to '90, actually, and then presumably

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1 there's a routine --

2 DR. NETON: That was our action
3 item, to shore that up and explain our
4 rationale.

5 CHAIRMAN CLAWSON: And SC&A was
6 going to, after they get that, review that,
7 but they were also going to continue the
8 earlier years. When we were down there, we --
9 that kind of falls into SC&A for the earlier
10 years.

11 MEMBER BEACH: And then SC&A is
12 going to review the responses for NIOSH on the
13 data adequacy and completeness paper?

14 CHAIRMAN CLAWSON: Yes.

15 MEMBER BEACH: And then the
16 matrix?

17 CHAIRMAN CLAWSON: Right.

18 MR. KATZ: Very good. Thank you,
19 Josie.

20 CHAIRMAN CLAWSON: And Joe is
21 going to help me put a slide together.

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1 MEMBER BEACH: I put that down on
2 my list for you.

3 CHAIRMAN CLAWSON: It is not on my
4 agenda to do. Also, to -- and this is kind of
5 SC&A's and also NIOSH's -- is to make sure
6 that all the documentation that the Board
7 would need -- do you want us to run that
8 through you and disseminate it?

9 MEMBER BEACH: Ted said he was
10 going to send it.

11 MR. KATZ: I am going to send to
12 all the Board Members transcripts and the
13 products that have been delivered to the Work
14 Group that can be disseminated. So all those
15 things I will send, and I will also ask Zaida
16 to put it in the folder, so it is in the
17 Board's folder, if it is not already there,
18 and it will be on the memory sticks for the
19 Board's computers. So I will take care of
20 that.

21 CHAIRMAN CLAWSON: Yes, I just

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1 wanted to make sure that they have the
2 information.

3 MR. KATZ: I am going to do the
4 same for Fernald, for that matter, tomorrow.
5 I will talk about that tomorrow.

6 CHAIRMAN CLAWSON: Okay. And we
7 have gotten the up to date matrix?

8 MR. FITZGERALD: Yes. It is up to
9 date as of the May 4th Work Group meeting.

10 MR. KATZ: Was that distributed to
11 the whole Work Group? Okay. So then I have
12 that. So that would be part of what I will --
13 they will get everything -- everything that
14 the Work Group has had to consider.

15 MR. FITZGERALD: Before that, I
16 think there was a March 10th piece that was an
17 email that was sent out.

18 MR. KATZ: There's two -- Right.
19 There's two memos and whatever.

20 MR. FITZGERALD: Whatever,
21 different types.

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1 MR. KATZ: You will all be copied
2 on that. So if I miss a piece somehow, by all
3 means, let me know when I send that. If there
4 is another piece that I have missed, please
5 cover me.

6 CHAIRMAN CLAWSON: Yes. I just
7 wanted to make sure who was going to do that
8 or so forth because I want to make sure that
9 gets out to the Board as soon as possible.

10 MR. KATZ: How many transcripts --
11 we only have three transcripts, three meetings
12 on Pantex?

13 MEMBER BEACH: January, March.

14 MR. FITZGERALD: Three Work Group
15 meetings.

16 MR. KATZ: Right. That is what I
17 am saying. Including today or this is the
18 fourth?

19 MEMBER BEACH: I think it is
20 today, including today.

21 MR. HINNEFELD: There won't be a

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1 transcript -- for Germantown.

2 MR. KATZ: No, there is no
3 transcript of that.

4 MR. HINNEFELD: A series of
5 redacted interviews was sent to us within the
6 last month or two ago. It was redacted and
7 provided to the Working Group. Did Nancy send
8 them? I can't find the message from Nancy
9 about that.

10 MR. ROLFES: It was last month.
11 It was from July.

12 MR. KATZ: Yes, I recall it.

13 MR. HINNEFELD: And it is a series
14 of interviews?

15 MR. FITZGERALD: It is all the
16 interviews up through --

17 MR. KATZ: August of last year.

18 MR. HINNEFELD: Okay, thanks,
19 Mark. I couldn't find it.

20 MEMBER BEACH: So it is July 2011?
21 That is the document? It is July 2011 is the

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1 Pantex site, expert interview summary.

2 MR. KATZ: Right. Correct.

3 MR. HINNEFELD: Okay. I'm sorry,
4 I have that one.

5 CHAIRMAN CLAWSON: So everything
6 that Nancy sent out and stuff like that will -
7 - Okay.

8 With that, is there anything else
9 that anybody feels we need to discuss? Phil
10 or Bob?

11 MEMBER SCHOFIELD: No, not on my
12 part.

13 MEMBER PRESLEY: I'm in good
14 shape.

15 CHAIRMAN CLAWSON: Okay.
16 Appreciate that. As soon as we get something
17 together, I will send it out to the rest of
18 the Work Group, my presentation and so forth,
19 and if that is it, we are adjourned.

20 MR. KATZ: Thank you, everybody.

21 (Whereupon, the above-entitled

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1 matter went off the record at 2:50 p.m.)
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