

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 1<sup>st</sup>, '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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