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2 deferred till the next meeting. The issues  
3 will be individuals who were exposed -- or were  
4 monitored or should have been monitored for  
5 neutrons, so that's a -- probably a large  
6 number of people, individuals exposed to  
7 thorium, and then the -- the building 81 issue,  
8 so --

9 **MR. GRIFFON:** Yeah.

10 **UNIDENTIFIED:** (From the audience and off  
11 microphone) How are you going to  
12 (unintelligible) the contractors are  
13 (unintelligible) documentation (unintelligible)  
14 prove you were out there?

15 **UNIDENTIFIED:** (From the audience and off  
16 microphone) (Unintelligible)

17 **UNIDENTIFIED:** (From the audience and off  
18 microphone) (Unintelligible) report.

19 **DR. ZIEMER:** I'm -- a question --

20 **UNIDENTIFIED:** (Unintelligible) the steel  
21 workers signed the cards, they kept records for  
22 the steel workers. You have numerous vendors,  
23 contractors, people that moved in and out of  
24 those buildings prior to '59. How you going to  
25 prove who it was that came and gone? How --

1           how you going to prove it? A lot of them are  
2           probably not even around anymore.

3           **DR. ZIEMER:** Thank you. Gen, did you have an  
4           additional comment, or -- okay.

5           Members of the press, do you have any  
6           additional questions that you need clarified?  
7           Okay.

8           Dr. Lockey has a comment.

9           **DR. LOCKEY:** This comment is -- is more generic  
10          in nature, and it has to do with when the  
11          EEOICPA law was passed, it was a laudable  
12          effort initially to recognize and provide at  
13          least some compensation for people who were  
14          injured in the nuclear production industry. It  
15          was a patched-together law -- I think Jim would  
16          probably support that -- trying to get it  
17          passed through a very difficult political  
18          situation.

19          Over the ensuing years, as NIOSH and SC&A and  
20          this Board have tried to work -- and  
21          petitioners, particularly petitioners -- have  
22          tried to work with this law, there are parts of  
23          it that don't work. It's created conflict and  
24          it's created frustration and it's been very  
25          time-consuming. And there's no -- there's no

1 question about that. So there's parts of this  
2 law that need to be streamlined and fixed --  
3 fixed.

4 Now you know, we go to St. Louis and we pass  
5 Mallinckrodt, and the Congressional delegation  
6 is there, like they are here today, supporting  
7 their constituency. They get their SCE (sic).  
8 But you know, I'm not -- it's not clear to me  
9 that, other than representing their state,  
10 we're representing everybody in the United  
11 States. This is a bipartisan issue --  
12 Republican, Democrat -- 'cause these plants  
13 were spread throughout the United States. The  
14 law needs to be updated, streamlined and made  
15 more user-friendly.

16 If I was in your situation and I got a 48  
17 percent PC, and my neighbor that I worked with  
18 for 30 years got a 52 percent PC, then I would  
19 be just beside myself. That's understandable.  
20 That is clearly understandable, and that type  
21 of conflict needs to be eliminated. There's  
22 ways to do it and Dr. Melius has suggested ways  
23 in the past.

24 It's really your Congressional people who need  
25 to step forward and not just represent you here

1 in Colorado, but represent the rest of the  
2 workers in this industry throughout the United  
3 States to streamline this law and update it to  
4 make it more user-friendly. It's their duty.  
5 We're trying to work within the law, and we  
6 have good people in NIOSH who are -- who are  
7 public servants, who are preventive health,  
8 public health oriented. They're doing their  
9 damnedest to get the work done, and SC&A's the  
10 same way, and people on this Board are the same  
11 way. But we were constrained by a law that has  
12 a catch-22 -- 180 days to reconstruct radiation  
13 doses, generate new science that takes -- that  
14 can take years? That's what the law is -- it  
15 put us into conflict, and it needs to be  
16 changed. It needs to be updated. It needs to  
17 be streamlined, and the conflict needs to be  
18 taken out of it. Thank you.

19 **DR. ZIEMER:** Okay. Thank you very much.

20 **MS. FRANK:** I'm Laura Frank from the *Rocky*  
21 *Mountain News*. So the press just wants to be  
22 clear for what we report next. The petition  
23 before you includes everyone who ever worked at  
24 Rocky Flats. You have carved out, if I'm  
25 clear, a 1952 to 1958 piece of people who were



1 exposed -- potentially, who -- which should  
2 have been monitored or were monitored for  
3 neutron dose. Does that mean the rest of the  
4 potential class is still before you, or only  
5 those people who fall into the three categories  
6 that you're continuing to look at for next  
7 month?

8 **DR. ZIEMER:** Only th-- only those other  
9 categories that we're looking forward to.

10 **MS. FRANK:** So everyone else is out.

11 **DR. ZIEMER:** Yes.

12 **UNIDENTIFIED:** (From the audience and off  
13 microphone) (Unintelligible)

14 **DR. ZIEMER:** That's right.

15 **UNIDENTIFIED:** (From the audience and off  
16 microphone) (Unintelligible)

17 **DR. ZIEMER:** No, no, next month we would be  
18 looking at the other time periods.

19 **UNIDENTIFIED:** (From the audience and off  
20 microphone) (Unintelligible)

21 **DR. ZIEMER:** Right --

22 **MR. GRIFFON:** Only three categories.

23 **DR. ZIEMER:** -- right.

24 **UNIDENTIFIED:** (From the audience and off  
25 microphone) (Unintelligible)

1           **DR. ZIEMER:** That's correct. That's correct,  
2           that's correct.

3           Okay. Let's take a brief ten-minute break. I  
4           know the press folks may have additional  
5           questions. We'll -- we'll catch our breath  
6           here and then we'll resume. Thank you.

7           (Whereupon, a recess was taken from 2:20 p.m.  
8           to 3:00 p.m.)

9           **DR. ZIEMER:** Okay, let's -- I'd like to ask you  
10          to be seated and we'll come back to order.

11          It's -- it's very clear to the Chairman that  
12          there's been a lot of confusion on what action  
13          was taken and -- and what was covered and what  
14          wasn't. Let -- let me try to clarify and I --  
15          I'm aware that sometimes clarifications make  
16          things even more confusing.

17          The action that the Board has taken will  
18          recommend to the Secretary the addition of  
19          special cohort status to a group of individuals  
20          from the '52 to '58 time frame who were  
21          monitored, or should have been monitored, for  
22          neutrons. So it's a subset of the total group  
23          in that time period.

24          We have not taken specific action on the rest  
25          of the time periods, including '59 to '64,

1           which was segmented out; '65 to '68; '69 to  
2           '70; or '70 and onward.

3           Now there was some question as to -- since the  
4           neutron, the -- and thorium in Building 81  
5           issues tend to focus on those three middle  
6           groups, did that automatically exclude '70 and  
7           beyond. It's the Chair's ruling that the '70  
8           and beyond is still an open question for two  
9           reasons. Number one, the thorium issue could  
10          indeed extend beyond '70; we don't know that.  
11          Number two, it would be my intent that the  
12          Board specifically go on record with '70 and  
13          beyond period, to either vote it up or vote it  
14          down, so it's very clear where the Board stands  
15          on that; that it not simply be -- fall by the  
16          wayside simply by exclusion. So it would --  
17          it's the Chair's intent that at our next  
18          meeting we take specific action on all of the  
19          remaining time periods so that everybody knows  
20          what the recommendation is on all of those and  
21          what groups are specifically covered.

22          So what is -- what has transpired is the  
23          recommendation to add one subset to the Special  
24          Exposure Cohort, and the possibility then is  
25          open to add additional subsets from the

1 remaining time periods. So I hope that is a  
2 little more clear than it apparently was at the  
3 time of the break. And we're --

4 **UNIDENTIFIED:** (From the audience and off  
5 microphone) (Unintelligible)

6 **DR. ZIEMER:** -- we're not -- we're not sure  
7 whether the media will make it more or less  
8 clear as they attempt to explain this, because  
9 they've talked to different folks and I think  
10 have gotten different versions of what Board  
11 members thought they were voting on, and so --  
12 and that's unfortunate, and I'm -- I'm sorry if  
13 that occurred. But we -- we -- we hope that  
14 that adds some clarity.

15 Yes, I'll allow a question here.

16 **UNIDENTIFIED:** May I ask a question?

17 **DR. ZIEMER:** Yes.

18 **UNIDENTIFIED:** Okay, you say you're going to  
19 vote on people prior to '59 on for thorium and  
20 -- 'cause the neutron -- photon thing -- photon  
21 thing. How you going to prove from '59 on up  
22 for everybody else that might have been exposed  
23 to thorium?

24 **DR. ZIEMER:** Well, I think that remains to --  
25 for the Board when we get our material next

1           time. I can't predict what the Board might do  
2           at that point, but at least those time periods  
3           are still open before us, so that will be the  
4           main order, and basically the only order of  
5           business as we return, hopefully in a month,  
6           and -- and try to pin down the final answer on  
7           those.

BETHLEHEM STEEL SEC PETITION  
DR. SAM GLOVER, NIOSH, OCAS  
PETITIONER

1           **DR. ZIEMER:** Now we have a -- another SEC  
2           petition. It's Bethlehem Steel. Is Sam here?  
3           We're going to have a presentation from Sam  
4           Glover of NIOSH, and then we'll hear from the  
5           petitioner on this one. Sam Glover.

6           **DR. GLOVER:** Sorry for the unannounced change  
7           in the schedule. Some of the people calling in  
8           from the east coast -- Ed Walker -- I think  
9           this helps with some of the -- just timeliness.  
10          So this is a -- something that's been worked on  
11          for a long time with the Board and SC&A. I  
12          started work with NIOSH January -- let's see,  
13          over two -- a little over two years ago. When  
14          I came in the door, Bethlehem Steel was the  
15          topic that I was handed to begin work on.  
16          So what today we'd like to talk about is the  
17          SEC petition 56 concerning Bethlehem Steel.  
18          I'm going to -- I have a lot of slides.  
19          There's about 48. Some of them, however, are  
20          going to go fairly quickly. Some of this is to  
21          put some of this in background and perspective.  
22          Most of the Board was present during this time  
23          frame, but I thought we'd go ahead and take a  
24          little bit of time and -- we've spent a lot of

1           time on these issues and so I thought -- as  
2           Larry said, take as much time as necessary, so  
3           I thought I'd make them -- all the issues  
4           clear.

5           A large -- Bethlehem Steel is a large  
6           manufacturing facility located in Lackawanna,  
7           New York. Bethlehem Steel Corporation  
8           purchased the facility in 1922, and by the end  
9           of World War II there were over 20,000  
10          employees at Lackawanna.

11          Now I want to make clear that Bethlehem Steel  
12          is a large corporation, whereas this is the  
13          Bethlehem Steel Corporation at Lackawanna, New  
14          York.

15          The facility in question -- I'm trying to see  
16          if we have a laser pointer -- is a state-of-  
17          the-art continuous rolling mill that was added  
18          in 1947. It's called the ten-inch bar mill.  
19          And I apologize for the lack of clarity.

20          There's not a lot of pictures available for  
21          Lackawanna facility, but there's actually a  
22          book called *Fire and Ice*, and they document the  
23          changes with time. Here you can see just the  
24          general size. It's the only real purpose that  
25          I added for this. The scale is -- for every

1           little increment of measurement, we have about  
2           500 feet. This is a large plant with many  
3           facilities, and of which -- this is a 1930 --  
4           of which in 1947 they added the ten-inch bar  
5           mill.

6           Mr. Walker provided this very nice picture of  
7           the ten-inch bar mill, showing one of the  
8           fastest and most up-to-date mills in the  
9           country in this time frame. It was actually an  
10          18-stand rolling mill, of which the last six --  
11          which were later renumbered one through six, if  
12          you actually look at the records -- were used  
13          to roll uranium. So here you see the long  
14          string of stands that would just continuously  
15          crush the ur-- the metal rods into the shape  
16          that was desired.

17          So a little bit about the time frame. In this  
18          time, there was a need by Hanford to have  
19          metallic uranium, which -- in billet form,  
20          rolled into rods which could be put into the  
21          reactor for plutonium production. These are --  
22          essentially came from Mallinckrodt, a subject  
23          which you guys have spent a lot of time on, in  
24          four and a half inch diameter by 12 to 20-inch  
25          length materials. They were rough-rolled -- or



1           actually the first phase was Hanford actually  
2           extruded them. From 1944 to 1947 they would  
3           make a one and a half inch rod 12 to 14 feet  
4           long. These rods were straightened, cut,  
5           machined into eight-inch slugs which then were  
6           packaged for irradiation to make plutonium.  
7           At that time frame, though, they began having a  
8           lot of problems with the plugging of the tubes  
9           in the reactors. And so because of that, what  
10          they noticed was that there was a metallic  
11          phase -- a very detailed, metallurgical problem  
12          -- that it would cause expansion if it was in  
13          the wrong form. And so they thought well, if  
14          we roll the material, we're not seeing those  
15          same problems. So they went from an extrusion  
16          process to a rolling process.  
17          Also, another change occurred in 1947. The New  
18          York Operations Office took control of the  
19          uranium supply, so this also changed some of  
20          the politics and -- and how things were  
21          occurring in the country, so that would have  
22          been when AEC took control of the -- of the  
23          entire program.  
24          So 1948 Hanford switched to an off-site rolling  
25          program that reduced the cost and had better

1 metallurgical properties versus the extrusion  
2 process. These off-site rolling programs were  
3 expected to be a short-term solution.

4 Two other sites which you guys are probably  
5 taking up, or at least discussed, were Josylin  
6 Manufacturing, and also Simonds Saw and Steel.  
7 These two facilities provided much of the  
8 rolled material from the late 1940s to the  
9 early 1950s.

10 So detailed health -- let's see. The Health  
11 and Safety Laboratory of New York Operations  
12 Office, later called HASL; the Environmental  
13 Measurements Laboratory -- or actually its  
14 correct name in 1946 would have been the Health  
15 and Safety Division of the AEC -- was  
16 responsible for the safety aspects of the  
17 uranium programs of the NYOO. The AEC  
18 recognized that long-term off-site rolling  
19 programs was inappropriate. They recognized  
20 that they had overexposure situations. They  
21 documented that in a 1949 status report.

22 In 1952 or thereabouts Fernald was created to -  
23 - to stop this temporary solution, to bring the  
24 Mallinckrodt and these rolling programs into  
25 one facility.

1           So then the AEC contracted with Bethlehem Steel  
2           to improve the rolling pass schedules for a  
3           continuous rolling mill, which is what was  
4           expected Fernald to be. They expected to use a  
5           continuous rolling mill process, and so they  
6           needed to understand how was this process going  
7           to be implemented. Bethlehem Steel had an up-  
8           to-date, modern rolling mill -- continuous  
9           rolling mill, and so they found an opportunity  
10          to do experimental runs to validate the Fernald  
11          pass. So the goals of the Bethlehem Steel  
12          rolling program were to finish roll rough-  
13          rolled bars that came from either Simonds Saw  
14          or Aliquippa on an experimental basis. Not all  
15          of the rods from Simonds Saw, not all the rods  
16          from Aliquippa, but before they came to  
17          Bethlehem Steel they had been rough-rolled into  
18          a smaller diameter.

19          They also wanted to compare lead bath and salt  
20          bath technologies. Before this the material  
21          had just been rolled in a raw form. They had a  
22          lot of oxidation problems associated with that,  
23          so by using a lead bath they found that it  
24          coated the material and provided reduced  
25          oxidation. And they also wanted to test what

1 happens with a salt bath, which was eventually  
2 used at Fernald. That would -- to increase the  
3 product through-put and also increase health  
4 and safety consequences.

5 They also were interested in seeing whether  
6 they heat-treated the rods and billets after  
7 they were rolled, could that induce the same  
8 phase changes that would not cause the problems  
9 of -- in the reactors. They were, again,  
10 having the issue with the material expanding  
11 and plugging up the tubes, which was costing  
12 production.

13 The production of finish-rolled rods from rough  
14 rods, that was the final main purpose.

15 So they started with that and that set the  
16 background a little bit, why was Bethlehem  
17 Steel involved with this, what were some of the  
18 other facilities around them.

19 The SEC submission was submitted on 3/13/2006.  
20 It was qualified on October (sic) 29th, 2006.  
21 It designated as SEC-56, *Federal Register*  
22 notice posted 9/7/2006 and an evaluation report  
23 issued February 21, 2007. The proposed class  
24 was submitted to NIOSH on behalf of a class of  
25 employees consisting of the millwrights,

1 welders, electricians, brick layers,  
2 carpenters, all maintenance, testers, rollers,  
3 supervisors, crane operators, hookers, clean-up  
4 crews and grinders who worked in the 10-inch  
5 bar mill and Blooming Mill from the years '49  
6 to '52. This is a 10-inch bar mill, and the  
7 blooming mill is a roughing area, for a rough-  
8 rolling area.

9 NIOSH evaluated the following class: All  
10 Atomic Weapons Employer personnel at the  
11 Bethlehem Steel Corporation who were monitored,  
12 or should have been monitored, for exposure to  
13 uranium during uranium-rolling activities at  
14 the Bethlehem Steel, Lackawanna, New York  
15 facility from January 1, 1949 through December  
16 31st, 1952.

17 So we removed those exclusions. We -- all  
18 employees at the facility.

19 Sources that were evaluated for this included  
20 the site profile documents, and these were --  
21 as you know, you were involved with a great  
22 deal of changes that went on. SC&A and NIOSH  
23 did a lot of work and were -- ingestion and a  
24 lot of different -- how -- what models were  
25 used to interpret -- and triangular

1 distribution versus a lognormal -- how did all  
2 these things affect the probability of  
3 causation, so a great deal of input and  
4 workload of the Board was done. We had the  
5 first Technical Basis Document, which was done  
6 at the very beginning of the program, Technical  
7 Basis 1, Rev. 0, issued March 31, 2003;  
8 superseded later by a June 29th, 2004 document.  
9 And that was most recently supervi-- superseded  
10 by Rev. 1 of -- it should actually be Rev. 0  
11 because we actually -- that became a NIOSH  
12 document. That should be OCAS Technical Basis  
13 003 Rev. 0 issued July 21, 2006.  
14 Another site profile document that's referenced  
15 is a Simonds Saw and Steel document which we'll  
16 discuss.  
17 Technical Information Bulletins included the X-  
18 ray procedures and the maximum plausible dose  
19 to workers of Atomic Weapons Employers.  
20 A lot of outreach efforts were conducted -- May  
21 4th, 2004; July 1st, 2004. On January 12th,  
22 2004 there was a town hall meeting. On June  
23 26th, 2006 there was a very detailed worker  
24 outreach meeting that was conducted to get  
25 worker input. Had extensive discussions with

1           the Board, with Mr. Walker, with individuals  
2           from this class. During the site profile  
3           evaluations we also conducted some -- an  
4           interview with a former employer on October --  
5           employee on October 26th, 2006 to get  
6           additional information.

7           A hundred and forty-one documents were  
8           evaluated as -- in our SR -- site research  
9           database. These contain information on the  
10          background, process information, trip reports,  
11          air sampling datasheets, Formerly Utilized Site  
12          Remedial Action Program reports and residual  
13          contamination surveys; documentation and  
14          affidavits provided the submissioner (sic)  
15          included 69 affidavits. The Wayne Range  
16          letter, which we also had previously, was also  
17          submitted. This has been included in our  
18          Technical Basis Document.

19          So as I discussed, the site -- the Bethlehem  
20          Steel site profile was the subject of an  
21          extensive Board review that has lasted at least  
22          a year and a half. It had two separate reviews  
23          by SC&A, numerous Board working group meetings  
24          at which Bethlehem Steel profile was discussed.  
25          At the end, we believe that all open items were

1 closed and that a new -- prior to the issuance  
2 of a new site profile in July of 2006.  
3 The NIOSH Claims Tracking System -- now this  
4 was as the time the pro-- that this was  
5 submitted, my boss, Larry Elliott, had probably  
6 the most up-to-date statistics of which  
7 Bethlehem Steel would have been evaluated, but  
8 this record -- I just left this as the document  
9 was -- was written -- 732 cases which matched  
10 the class definition; 634 for which dose  
11 reconstruction has been completed. We do not  
12 have internal dosimetry information, no  
13 bioassay. We don't have external dosimetry  
14 information directly on these individuals. We  
15 do have air monitoring data that was conducted  
16 at Bethlehem Steel. We also have Computer-  
17 Assisted Telephone Interview information from  
18 workers and their surviving spouses -- the  
19 survivors.  
20 So the -- I'm going to read an extensive  
21 petition basis, parts that were included in the  
22 petition. These included that information from  
23 Simonds Saw and Steel was not a valid  
24 comparison to Bethlehem Steel. They also  
25 (unintelligible) that other buildings were



1           involved in the uranium work, including the  
2           blooming mill, that we did not consid-- NIOSH  
3           did not consider the sub-basement under the  
4           cooling bed, nor the cooling bed above; that  
5           there were no records for the time period from  
6           '49 to 1950. The workers were not supplied  
7           with personal protective equipment. Thirteen  
8           tons of radioactive materials were left at  
9           Bethlehem Steel site. The amount of uranium  
10          rolling that was listed could not have been  
11          done in a 10-hour day. The work at Bethlehem  
12          Steel involved more manual labor than Simonds  
13          Saw and Steel -- this was discussed in the site  
14          profile document as a part of it, about why  
15          Simonds Saw would be a bounding -- and we can -  
16          - we'll discuss that briefly; that the  
17          government admitted to destroying records. The  
18          work areas could not have been cleaned in one  
19          day.

20          NIOSH -- that -- further, NIOSH initially  
21          stated that the highest dust levels were at the  
22          rollers and then later that NIOSH stated that  
23          the highest exposures were somewhere else; that  
24          grinding had not been initially recognized or  
25          incorporated into the Bethlehem Steel Technical

1           Basis Document. The workers ate and drank in  
2           dusty areas and could have ingested uranium;  
3           that workers wore contaminated clothing.  
4           So let's discuss some of the radiological  
5           operations.  
6           Uranium billets were prepared by Mallinckrodt.  
7           It's documented that they were rough-rolled at  
8           Simonds Saw, and after that at Aliquippa Forge.  
9           They were shipped to Lackawanna on freight cars  
10          for finish rolling. Based on numerous  
11          documents, the work was involved only at the  
12          10-inch bar mill.  
13          The rollings typically occurred on the weekend  
14          because of production needs of the mill during  
15          the work week. Documents interviews report  
16          strict accountability practices regarding the  
17          collection of scale, residues, fines and  
18          cropped ends. We actually have a document that  
19          -- from the Tonawanda sub-office that actually  
20          reports that -- how many bundles of cobbled  
21          rods and the number of drums of scrap material  
22          that were shipped from Bethlehem Steel, so --  
23          and that went to Lake Ontario Ordnance Works,  
24          and that was November, 1951.

25

1 We're actually investigating trying to see if  
2 we can find further documents, but this is 50  
3 years ago so we don't have a full accounting.  
4 Department of Labor originally established the  
5 period from 1948 to 1949. NIOSH obtained  
6 documents showing that the rollings occurred --  
7 we found that the rollings occurred from '51 to  
8 '52 and DOL extended the time period. The  
9 first documented rolling occurred in April of  
10 1951. In addition to the documented rolling  
11 days, NIOSH assumed one rolling day per month  
12 beginning in January, 1948 and ending in  
13 December of 1952, has continued to evaluate the  
14 '49 -- actually should be January of 1949 to  
15 December of 1952 -- the '49 to '50 time period  
16 as if one rolling occurred per month to ensure  
17 claimant favorability. I apologize for that  
18 error on the slide.

19 No bioassay or external dosimetry data is  
20 available for Lackawanna. As Larry pointed out  
21 yesterday, this is a modeled analysis.

22 The Health and Safety Laboratory, and later  
23 National Lead -- Fernald -- conducted air and  
24 surface radioactivity monitoring during the  
25 various rolling activities. Data are evaluated

1 with the rolling (sic) collected at Simonds Saw  
2 and Steel for rollings conducted in the '49 to  
3 '50 time period. I'll discuss that in the next  
4 slides. We assumed a heavy worker model to  
5 evaluate intakes.

6 Why is Simo-- why -- why Simonds Saw and Steel?  
7 Simonds Saw and Steel was one of the largest  
8 suppliers of rolled uranium for Hanford. In  
9 October of 1948 -- October 27th, to be specific  
10 -- the -- Simonds Saw had not implemented the  
11 recommended changes by the Health and Safety  
12 Laboratory. We have air monitoring data that  
13 occurred before they made changes to the  
14 facility, which included additions of ducts and  
15 addition of grading and other materials which  
16 makes the exposures higher than later on, so we  
17 only used data from that one day, that 19--  
18 that October 27th, 1948 rolling.

19 The uranium was not coated with lead or salt  
20 during this time period. Furthermore, samples  
21 were collected for extremely short periods of  
22 time during the periods of the highest  
23 concentration. That data, those very short  
24 spikes in the air concentration, was what was  
25 used for the entire 10-hour day, and you'll see

1           what those numbers -- the highest exposed  
2           worker by the Health and Safety Laboratory was  
3           -- was calculated to be about 190 MAC at  
4           Simonds Saw and Steel. One MAC, or Maximum  
5           Acceptable Concentration, is 70 dpm of natural  
6           uranium.

7           This -- sorry, this -- this graph shows 95th  
8           percentile, the 553 MAC, which is used to  
9           evaluate the workers at Bethlehem Steel from  
10          the Simonds Saw and Steel data. Unfortunately  
11          I don't have a laser pointer, but you can see  
12          we use -- in this -- again, part of an  
13          extensive discussion, but the 95th percentile  
14          is used to evaluate those entire -- that entire  
15          period. Originally a triangular distribution  
16          was used. Eventually this was the updated  
17          Technical Basis Document. You see only one  
18          datapo-- that's two datapoints collected that  
19          entire day, exceed that number, and those --  
20          what drives most of this is the rolling mill.  
21          The rolling process is what drives this 95th  
22          percentile.

23          Data collected at Bethlehem Steel from 1951 to  
24          1952 during various rollings. Data consists of  
25          204 measurements, one of which was considered

1 illegible. We actually went and got the  
2 original documents from the DOE, looked at the  
3 legibility, verified what the numbers actually  
4 said, got the best information that we could  
5 and one of them still couldn't be read.  
6 They're paper -- they're onionskin records,  
7 five of which were QC, so that left us with 198  
8 measurements at various locations in the mill.  
9 They were evaluating salt and lead bath  
10 technologies, so these were at -- measured  
11 during various times; when those technologies  
12 were used what was the efficacy of the salt  
13 bath.  
14 The fraction of breathing zone samples was not  
15 as large at Simonds Saw and so a -- what they  
16 call a supplemented dataset wa-- using  
17 surrogate breathing zone samples was evaluated,  
18 or was actually used. So we said all right,  
19 well, here are the general air samples at  
20 Simonds Saw; here's the breathing zone samples,  
21 what kind of a ratio do we see, so we could get  
22 a larger breathing zone set. Those  
23 measurements actually drive the upper end of  
24 our -- of the distribution that you're going to  
25 see.

1           In addition to the breathing zone and general  
2           air samples, we also supplemented this with  
3           process samples, and I apologize for getting  
4           into the detail, but of those measurements --  
5           process samples are things right over top of  
6           the -- of a process, where a worker would not  
7           be expected to be, right over -- you know, so  
8           this -- these are not -- by HASL definition,  
9           were not supposed to be used, that they were  
10          not appropriate for worker exposures, that they  
11          would be -- it's not an area where a worker  
12          would -- would be able to be.

13          This graph shows -- these are the actual air  
14          monitoring results during the various time  
15          frames. You can see that in the very  
16          beginning, 1951 -- of -- of May, or actually  
17          that's that April rolling, you see a pretty  
18          good spread. And the 225 MAC is what the TBD  
19          now is eval-- how it's being used to evaluate  
20          workers during this time frame. We had a 225  
21          MAC and later 70 MAC, which 400 -- 4,900 dpm  
22          per meter cubed. This is the actual  
23          measurements. You see only one measurement  
24          point exceeded that 225 MAC.

25          These are the actual -- do we have a laser?

1 Ah, see what happens with a little bit of  
2 training? It's not big, but there we have --  
3 so here we have actual and augmented data for  
4 Bethlehem Steel. This is where the general air  
5 samples were taken using the factor determined  
6 at Simonds Saw and Steel from the -- the ratio  
7 of general air to breathing zone samples, and  
8 we basically created additional breathing zone  
9 samples, which really drive these data up here  
10 -- actually, I'm sorry, this data here is  
11 driven by these created samples. You can see  
12 here the 95th percentile of the actual data is  
13 87 MAC. When we supplement the dataset, the  
14 95th percentile becomes 225 MAC, so a  
15 significant increase by using this data. Some  
16 of that was driven by the lack of information  
17 on the sheets. They did not include whether it  
18 was a process or general air sample, and so  
19 therefore, even though they were very high,  
20 they were assumed to be GA samples and this  
21 factor was applied to them. Again, a lot of  
22 that upper end data is because of that.  
23 This summarizes the rollings that are  
24 documented. Here's the April 26th, the 27th,  
25 1951. This is designated experiment number one,



1           26 billets were rolled, both lead and salt were  
2           evaluated. We have air monitoring data. I'm  
3           not going to belabor this slide, but you can  
4           see in the very beginning they had both lead  
5           and salt bath. That was that initial period  
6           why we have that 225 MAC, and then they went to  
7           only salt rollings. The first five rollings  
8           were designated experimental, and then they  
9           began some production runs.

10          This was driven because Fernald was not ready.  
11          Savannah River needed uranium, and so these  
12          production runs were essentially to support the  
13          Savannah River start-up. So you can see the  
14          number of billets that were rolled, and we have  
15          air monitoring data in this time frame, as  
16          well.

17          I don't want to get too detailed. You have  
18          this -- and I apologize if the size is not good  
19          for a slide, but we have the general -- how we  
20          do dosimetry at Bethlehem Steel in these  
21          various time frames. From '49 to '50 in the  
22          10-inch bar mill, although no documentation or  
23          records have been found to substantiate the  
24          rolling operations were actually performed,  
25          uranium rolling is assumed to have been

1 performed. Simonds Saw and Steel is used as a  
2 surrogate, assuming no protective coatings or  
3 ventilation was applied.

4 So I want to make it clear that the data  
5 includes the roughing operation. Simonds Saw  
6 roughed the rolls and then finish-rolled them,  
7 so in the data that we used for that October  
8 27th rolling, roughing is included in that as  
9 part of the assessment.

10 All workers are assumed to be affected at the  
11 95th percentile value of the maximum dose  
12 potential dataset. We have added a cobble-  
13 cutting dose model. We've added a number of  
14 particular issues which were also discussed,  
15 including ingestion and contaminated workers --  
16 contaminated clothing.

17 From January '51 to September of '51 both lead  
18 and salt bath technologies were being utilized.  
19 Mostly GA samples were being performed, and we  
20 talked about the breathing zones and GA ratios  
21 and the surrogate data that was used. Again,  
22 all workers are assumed to be affected at the  
23 95th percentile. Again we've also included  
24 cobble-cutting dose model for people who may  
25 have been cobble cutters.

1 From September of '51 through the end of '52  
2 the salt bath technology only was utilized.  
3 This resulted in an extremely large decrease in  
4 air concentration at the rolling mill. So  
5 other potential technologies and processes  
6 became potentially limiting. One sample, a  
7 grinding operation, a process sample was used  
8 which had a 4,900 dpm per meter cubed for the  
9 entire period as a bounding air sample, so the  
10 se-- that 70 MAC air, that's where that number  
11 comes from. It is a process sample for -- and  
12 that is in line with other grinding samples  
13 that were taken at other facilities, and that  
14 is used as the bounding number as treating  
15 everybody basically as a grinder.

16 Now these various -- the original TBD -- some  
17 of the different discussions that occur in the  
18 petition -- use a triangular distribution over  
19 the entire time frame. This period we've done  
20 quite a bit more with effective -- of time and  
21 -- and so because of that, time becomes more  
22 important potentially on how worker -- the  
23 doses are actually calculated because if you  
24 worked in a later frame you see that there's a  
25 significant reduction, from 553 MAC to 225 MAC

1           to 70 MAC during those various time frames.  
2           An area we spent a great deal of time on was  
3           cobble cutters. A cobble is -- I like what --  
4           is -- is a train wreck, is what we've been  
5           describ-- basically these rolling mills had to  
6           operate in sync, and if they -- if something  
7           got out of sequence, a little bit of a bend in  
8           the bar, a cobble would occur and that bar  
9           coul-- it couldn't pass through the rolling  
10          mill. That material had to be removed. Work--  
11          worker discussions included -- you know, they  
12          would cut out what they could, but they want to  
13          keep the bar mill operating. The -- they have  
14          a crane appli-- a crane would actually take  
15          this material, remove it to a fac-- another  
16          area and someone would cut that up to a  
17          manageable unit.  
18          We evaluated the frequency of the cobble --  
19          these are things they were concerned about.  
20          They want to know how often these different  
21          pass technologies would create a cobble, and so  
22          they actually record, in the day we have air  
23          sample data, in the rolling reports how many  
24          cobbles they had. So we used that information,  
25          worker interviews assisted with the location

1 and nature and time of the cobble-cutting. The  
2 Tonawanda reports clearly show repeat (sic) of  
3 both drum residue and bundles of cobbled rods  
4 from Bethlehem Steel as part of the scrap  
5 program.

6 There was some discussion at one time about  
7 cutting up into very small pieces and put them  
8 all in drums. We've seen actually where  
9 material had been -- rods had been removed from  
10 the Tonawanda facility for various applications  
11 at Hanford, who was interested in what the  
12 metallurgical properties were, and also based  
13 on the Tonawanda reports -- so cobbles were  
14 essentially taken off-line using crane  
15 necessary cutting allow the rolling to  
16 continue.

17 Based on interviews, the cobbles were cut up by  
18 one employee. We evaluate the intake rate,  
19 time required and particle size during a  
20 cutting, and essentially about two hours per  
21 day the cobble cutter is assigned 600 MAC at .5  
22 micrometers. That's based on data that was  
23 developed for high temperature operation  
24 cutting operations. Eight hours a day they're  
25 evaluated at 70 MAC exposure using a 5 micron

1           particle size, 'cause if you were a cobble  
2           cutter you weren't also going to be a roller,  
3           not on a continual basis. Rollers could  
4           potentially help remove the cobble from the  
5           line.

6           Employees ate and drank in the areas, so this  
7           was something that the Board and SC&A -- we  
8           worked on to include ingestion in the Bethlehem  
9           Steel models. This is assumed to occur both  
10          during the rolling days and between the rolling  
11          days. Air concentration was used to determine  
12          the surface loading, and a dilution model --  
13          because five out of the seven days they were  
14          using this -- actually 29 out of the 30 days of  
15          the month they were rolling steel.

16          So this graph kind of gives you an idea of the  
17          surface contamination versus the air  
18          concentration data. This is a compilation of  
19          data from both Simonds Saw and Bethlehem Steel.  
20          Rolling data was used to determine the rolling  
21          day surface contamination values, and general  
22          air samples were used to determine non-rolling  
23          day data.

24          Mr. Walker should have been an artist. He  
25          provided us a very nice sketch -- to SC&A and

1           to NIOSH -- as part of this process. This is  
2           the sub-basement area below the cooling beds,  
3           and you see a very large 70-foot wide basement  
4           area with various machinery down here. This is  
5           obviously one of the areas they're concerned  
6           about. Uranium would fall through the grating,  
7           as would steel, and occasionally this material  
8           would have to be cleaned out. This basement  
9           area was specifically evaluated to ensure that  
10          we included the basement area. It required  
11          occasional cleanup. Worker interviews indicate  
12          intermittent occupancy. Somebody was not  
13          always down in this facility.  
14          Source term data, if you're at the rolling mill  
15          as a roller, that will bound your inhalation  
16          exposure. We also -- that steel and uranium  
17          will mix to dilute the source term as a  
18          function of time during the month.  
19          External sources of exposure include uranium  
20          dust, which if you look at the TBD, this is a  
21          very low dose. Direct contact with uranium,  
22          primarily a shallow dose but it also has a deep  
23          dose component. Residual contamination, reuse  
24          of contaminated clothing, workers could work up  
25          to two weeks without washing the clothing. And

1           also occupational medical dose.  
2           So direct contact dose with the billets was ev-  
3           - was evaluated using a triangular distribution  
4           to look at the shallow dose and the beta  
5           particles. Minimum was calculated using -- a  
6           worker was one meter from the uranium source  
7           for one hour per day for -- he had a 10-hour  
8           shift, which evaluates to 90 millirem per  
9           rolling day. The mode of that was set as the  
10          survey data from Simonds Saw and Steel, which  
11          is determined to be about 150 millirem per  
12          rolling day. The maximum was calculated to be  
13          six hours at one foot from the extended uranium  
14          source, which is 150 millirad per hour, and  
15          four hours at one meter from the source at 90  
16          millirads per hour. Each of these was  
17          multiplied by the number of rolling days that  
18          occurred, and also the deep dose was evaluated  
19          also on a triangular basis.  
20          Residual contamination, the Simonds Saw and  
21          Steel, which rolled many, many, many tons more  
22          than Bethlehem Steel did, was used as a  
23          bounding situation. We assumed that 1.25 times  
24          ten to the seventh dpm per meter squared were  
25          on the surfaces at all times for the entire



1 four-year operations. These are the annual  
2 doses to the skin, which is the largest dose  
3 from this, bone surfaces, and other organs --  
4 primarily the skin, at 1.7 rem per year is the  
5 major source -- or major dose.  
6 Contaminated clothing was -- based on worker  
7 interviews, was assumed to be worn for two  
8 weeks after the rolling. Mallinckrodt  
9 clothing, from their laundry experience where  
10 they had lots of radium and other contaminants,  
11 was used to calculate the bounding dose.  
12 Assigned 1.5 millirem per hour to the skin at  
13 ten hours per day. This results in 1.8 rem per  
14 year shallow dose.  
15 As you're familiar with, occupational medical  
16 dose -- the AEC did require at several  
17 facilities. There is no real documentation at  
18 Bethlehem Steel if this was required, but we do  
19 assume a pre-employment and periodic annual X-  
20 ray in keeping with AEC practices at larger AWE  
21 facilities.  
22 We did -- actually the Bethlehem Steel site has  
23 been a part of probably a number of the Board's  
24 reviews and dose reconstruction processes. We  
25 did six dose reconstruction examples just to

1 provide some flavor of how the thing changed  
2 with -- with time. Some of the original ones,  
3 again, were done with triangular distribution,  
4 and now we have this changing exposure models  
5 as a function of when you may have begun  
6 employment. We looked at several cancers,  
7 employment periods, and also cobble-cutting  
8 activities. And this period was also part of a  
9 large Program Evaluation Report which Larry  
10 discussed yesterday.

11 Lung cancer -- obvi-- you're not going to see  
12 97 percent POCs in our reports because we would  
13 stop after you get to 52 -- 50 percent. But  
14 just to give you some feeling for -- if from  
15 the '49 to '52 time frame, if you had a cancer  
16 sometime later, former smoker, the POC, 97  
17 percent. If you were a cobble cutter, again,  
18 the result -- a cobble cutter would not get  
19 that high rolling dose during the Simonds Saw  
20 time frame. They would get two hours at 600  
21 MAC and 70 MAC for the rest of the day, so it  
22 actually would reduce your overall exposure for  
23 your lung cancer.

24 Kidney dose, or kidney cancer, not a smoker,  
25 not applicable; cobble cutter, no; worked from

1 '49 to '52, a POC of 47.9 percent. Obviously  
2 this is getting in area where you start -- it's  
3 -- you know, that it's close to compensable.  
4 Colon cancer, if you worked from 10/51 to '52,  
5 (unintelligible) the entire time frame, the  
6 POC's only 2.39 percent -- just showing the  
7 difference in a non-metabolic organ for uranium  
8 versus -- and also of course the incidence of  
9 cancer from -- or its radiogenic -- based on  
10 the radiogenic models in IREP.  
11 If you worked only part of the time, still lung  
12 cancer is paid, whether you're a cobble cutter  
13 or not a cobble cutter, this was not -- this is  
14 a hypothetical situation. Some people had  
15 cancers only a few years after their exposure,  
16 in which case this would not hold true, but  
17 these are just some examples to show what kind  
18 of probability of causations are -- are  
19 calculated, and I know you guys have looked at  
20 a lot of these different issues. But still,  
21 lung cancers are going to be paid at Bethlehem  
22 Steel what -- no matter what period you would  
23 have started working in, depending on the  
24 scenario.  
25 So as the evaluation report, NIOSH evaluated

1 the petition using the guidelines of 83 -- 42  
2 CFR 83.13, submitted an evaluation finding and  
3 petition evaluation report to the Advisory  
4 Board and to the petitioners. This was issued  
5 on February 21st, 2007. NIOSH found that  
6 available monitoring records, process  
7 descriptions and source term data were adequate  
8 to complete dose reconstructions with ade--  
9 with sufficient accuracy for the proposed class  
10 of employees, and thus a health endangerment  
11 determination is not required.

12 So a summary of our feasibility, that uranium,  
13 beta/gamma and occupational medical X-rays are  
14 all inclu-- as being -- dose reconstruction is  
15 feasible.

16 You can find additional documentation regarding  
17 this in the document review \ AB document  
18 review \ Bethlehem Steel subfolder.

19 So with that, I'd take any questions from the  
20 Board.

21 **DR. ZIEMER:** Thank you, Sam. Of course we've  
22 had Bethlehem Steel on and off our -- our scope  
23 for a long time. I think almost all the cases  
24 from Bethlehem Steel have been previously  
25 reconstructed anyway, as -- as I recall, so I

1           guess the -- the remaining issue was the issue  
2           of using the Simonds Saw's model, as it were,  
3           for this facility, and it seemed to be a  
4           continual concern. But the recommendation then  
5           that comes from NIOSH is that you can  
6           reconstruct dose, that's the bottom line.

7           **DR. GLOVER:** Yes, sir.

8           **DR. ZIEMER:** Now let's open the floor for  
9           questions. Jim Melius, yeah.

10          **DR. MELIUS:** I wasn't here -- can you hear me  
11          okay or do I need to get a little closer?  
12          I wasn't here yesterday, but I noticed in  
13          Larry's presentation the -- he has a  
14          distribution of probability of causation for  
15          Bethlehem Steel and it's the -- a very odd  
16          distribution, at least in comparison to most  
17          other sites. It's a bifurcated distribution.  
18          I don't know if he commented on that yester--

19          **DR. ZIEMER:** Yes, indeed, he did. Larry, you  
20          may want to repeat that comment, but it is due  
21          in part to the fact that the -- the model is  
22          applied I think to all workers at this site,  
23          and that makes a big difference, versus --  
24          well, here's Jim.

25          **DR. NETON:** I'm not Larry Elliott, but I think

1 I might be able to address the question. That  
2 odd distribution is -- is an artifact of the  
3 fact that it is a model that's applied to all -  
4 - all workers, one size fits all, and that as -  
5 - as Sam pointed out in his slide, that the  
6 respiratory tract cancers are virtually 100  
7 percent compensated at this site, in addition  
8 to a number of the skin cancers because the  
9 skin cancer doses are -- the skin doses are  
10 also very large. And then, save the skin  
11 cancers and the lung cancer models, the rest of  
12 the organs that don't concentrate uranium  
13 internally receive a very low dose. Same  
14 showed one example for the colon that had I  
15 think a two-point-something percent probability  
16 of causation. You would see very similar  
17 probability of causation calculations for  
18 organs that don't concentrate uranium, such as  
19 the prostate or the bladder or any other organ  
20 that doesn't -- doesn't concentrate those  
21 radionuclides, so you do have that real  
22 bifurcated distribution at Bethlehem Steel  
23 that's unusual compared to other sites.

24 **DR. MELIUS:** Yeah, I -- I would just point out  
25 probably as an observation, yeah -- and I think

1 I mentioned this before, this model's basically  
2 -- just takes into account the number of days  
3 that you worked there, or time period, and your  
4 -- and the organ site, and is -- actually is  
5 the SEC model that the Board rejected when  
6 NIOSH first appro-- in terms of the model  
7 approach for all SECs. Remember that first set  
8 of regulations that you presented to us was  
9 sort of an organ-specific one and we --

10 **DR. NETON:** But this is not organ-specific.  
11 This is --

12 **DR. MELIUS:** Well --

13 **DR. NETON:** -- individual calculation is done  
14 for each organ, and where the numbers fall,  
15 they fall.

16 **DR. MELIUS:** Yeah.

17 **DR. NETON:** Now the end result may be it  
18 appears to be somewhat organ-specific, but --

19 **DR. MELIUS:** In -- in effect.

20 **DR. NETON:** -- your point's taken.

21 **DR. MELIUS:** In -- in effect it is.

22 **DR. NETON:** One thing I might add, though, this  
23 is not the only site that we have a one size  
24 fits all model. Many of the AWEs are -- are  
25 done this way.





1           thank you again for letting me (unintelligible)  
2           the meeting, I really appreciate it. And I do  
3           have (unintelligible) try to keep it down  
4           (unintelligible) kept it down (unintelligible).  
5           I'm very, very disappointed (unintelligible)  
6           program rationale and they did (unintelligible)  
7           expert workers (unintelligible) technical  
8           (unintelligible) months before anyone talked  
9           (unintelligible) not including (unintelligible)  
10          I don't believe (unintelligible) --

11         **DR. ZIEMER:** Ed, let me interrupt you a minute.  
12         We're having a great deal of difficulty  
13         understanding you. Are you on a speaker phone  
14         or --

15         **MR. WALKER:** (Unintelligible) phone  
16         (unintelligible).

17         **DR. ZIEMER:** Are you on a --

18         **MR. WALKER:** Is that better?

19         **DR. WADE:** Yes.

20         **DR. ZIEMER:** Much better.

21         **MR. WALKER:** Is that better?

22         **DR. ZIEMER:** Yes.

23         **MR. WALKER:** Can you hear me better now?

24         **DR. ZIEMER:** Yes, that's much more plain.  
25         Could you proceed again?

1           **MR. WALKER:** Sure. And one of the most  
2 important things was that site expert workers'  
3 input was (unintelligible) part of the  
4 (unintelligible), and here our -- our technical  
5 base (sic) document was 16 months old before  
6 (unintelligible) during a period it was  
7 (unintelligible) their conversation. So  
8 (unintelligible) it was never looked into, it  
9 is my understanding. I had a call prior to the  
10 technical base (sic) document where I asked a  
11 question and (unintelligible) the building was  
12 still there, which tells me (unintelligible) at  
13 all 16 months after the technical base (sic)  
14 document (unintelligible), and at that point I  
15 (unintelligible) asked (unintelligible) to come  
16 up and meet with the claimants (unintelligible)  
17 the site with the claimants -- come up and to  
18 listen to some of the (unintelligible). We  
19 take (unintelligible) NIOSH (unintelligible)  
20 come up at all and this is 16 months after  
21 (unintelligible) I was (unintelligible) I  
22 watched (unintelligible) work there. I worked  
23 there for 40 years and I know the conditions in  
24 the plant. And I know from what I heard in  
25 that (unintelligible) years, it's

1 (unintelligible) people at NIOSH, they do not  
2 realize what those workers went through and the  
3 dirt and the (unintelligible) many times  
4 (unintelligible). So I know, I was there. I  
5 (unintelligible) to get some information  
6 (unintelligible) talked to some  
7 (unintelligible) experts and (unintelligible)  
8 to talk to our people (unintelligible)  
9 researched (unintelligible) with NIOSH on  
10 (unintelligible) the people that  
11 (unintelligible) and make sure they were people  
12 that (unintelligible) at the plant and really  
13 worked there (unintelligible) I was very  
14 careful. I didn't want to (unintelligible)  
15 NIOSH (unintelligible) come out and tell the  
16 truth, so I'm very disappointed the way they  
17 approached that, the claimant input, and I  
18 think (unintelligible) after we had that  
19 (unintelligible) months after (unintelligible)  
20 I was told that you used surrogate information.  
21 I have to be (unintelligible) from Simonds Saw,  
22 it would be very reasonable to understand  
23 (unintelligible) Simonds Saw (unintelligible).  
24 When I inquired about it, Simonds Saw  
25 (unintelligible) hadn't even been completed, so

1 (unintelligible) months after you were  
2 (unintelligible) information from  
3 (unintelligible) that didn't even  
4 (unintelligible) and a question about surrogate  
5 information (unintelligible). I couldn't hear  
6 very well, but I think that Dr. Melius  
7 (unintelligible) there was some question and  
8 (unintelligible).

9 **DR. ZIEMER:** Thank you, Ed.

10 **MR. WALKER:** (Unintelligible) talking about our  
11 people (unintelligible).

12 **DR. ZIEMER:** Thank you very much, Ed, for your  
13 comments.

14 Board members, do you have comments, questions,  
15 either of Ed or of -- of NIOSH staff?

16 (No responses)

17 I want to ask Dr. Melius, you raised an -- a  
18 question regarding -- I -- I think you used the  
19 term legality of the use of the other  
20 facility's data -- am I quoting that right?  
21 Were -- were you suggesting a particular action  
22 or just -- I -- I assume it was more than a  
23 rhetorical question.

24 **DR. MELIUS:** Well, it's more than a rhetorical  
25 question. It's been raised by a number of the

1 Congressional representatives --

2 **DR. ZIEMER:** Yeah, I understand that.

3 **DR. MELIUS:** -- about that and -- and I guess  
4 my personal view was I was not ready to take  
5 any action on this particular petition since  
6 it's -- the actual dose reconstruction is so  
7 dependent on the use of data from Simonds Saw  
8 and, to a lesser extent, from Mallinckrodt that  
9 -- until I've had a chance to hear some  
10 presentation from NIOSH regarding this issue.  
11 We had asked that it be put on the agenda and  
12 it's on the agenda tomorrow.

13 **DR. ZIEMER:** Well, I guess -- that was the  
14 question, are we going to hear from counsel on  
15 -- or -- yeah.

16 **DR. WADE:** Yes, we're all right. Tomorrow it's  
17 scheduled at 10:00 o'clock.

18 **DR. MELIUS:** Yeah.

19 **DR. ZIEMER:** Yeah, so the issue will arise. We  
20 don't need to take any action today --

21 **DR. MELIUS:** Yeah.

22 **DR. ZIEMER:** -- so then we can continue. Let's  
23 see where we are here -- I think we can go  
24 ahead --

25 **MR. BROEHM:** Actually, Dr. Ziemer, I just

1           wanted to read into the record a letter that  
2           was received --

3           **DR. ZIEMER:** Oh, this --

4           **MR. BROEHM:** -- by the Board from the New York  
5           delegation.

6           **DR. ZIEMER:** -- right, and this is from the New  
7           York delegation --

8           **MR. BROEHM:** Yeah.

9           **DR. ZIEMER:** -- and it's pertinent, so Jason,  
10          if you would read that into the record we'd  
11          appreciate it.

12          **MR. BROEHM:** Okay. This is a letter from  
13          Senators Hillary Rodham Clinton, Charles  
14          Schumer, and then Representatives Brian  
15          Higgins, Thomas Reynolds and Louise Slaughter.  
16          (Reading) Dear Dr. Ziemer: We urge you to  
17          recommend approval of the petition to create a  
18          Special Exposure Cohort for former Bethlehem  
19          Steel employees who worked at the plant from  
20          January 1st, 1949 through December 31st, 1952.  
21          We believe this petition should be promptly  
22          approved so as to give the necessary relief to  
23          former workers and their families who have  
24          struggled for decades because of dangerous  
25          exposure to radiation and other particulates.

1           The former Bethlehem Steel plant in Lackawanna,  
2           New York played a crucial part in the Cold War,  
3           and was a linchpin in western New York's  
4           industrial economy for over a century.  
5           Thousands worked long hours and under very  
6           difficult conditions to create modern machines,  
7           weapons and devices that were the technological  
8           innovations of their time. Work intensified  
9           throughout the first years of the Cold War as  
10          our country's demand for modern weapons and  
11          machines increased.  
12          Work at the Bethlehem Steel plant was  
13          hazardous, but at the time workers had no idea  
14          of the immense health risks associated with the  
15          uranium rolling. Specifically, during weekend  
16          shifts workers would process upwards of 350  
17          tons of uranium metal -- material, unknowingly  
18          ingesting radioactive dust during the process.  
19          Decades later, only after hundreds of former  
20          workers developed cancer, did the federal  
21          government take responsibility for this  
22          travesty. Passage of the Energy Employees  
23          Occupational Illness Compensation Program Act  
24          in 2000 was meant to provide compensation and  
25          relief to workers like those at Bethlehem Steel

1           who developed debilitating or fatal diseases  
2           due to work-related exposure to radioactive  
3           material in service to our nation. The law  
4           directed the Department of Labor to establish a  
5           process known as Special Exposure Cohort to  
6           decide groups of claims for facilities where a  
7           lack of data prevented dose reconstructions  
8           from being completed with sufficient accuracy.  
9           Bethlehem Steel workers did not wear individual  
10          radiation exposure monitors when uranium  
11          rolling occurred. The few ambient air samples  
12          from between January 1st, 1949 and December  
13          31st, 1952 were taken at monitors that were far  
14          removed from the rollers where exposure was the  
15          greatest. Yet in spite of this complete lack  
16          of data about uranium exposure at Bethlehem  
17          Steel, NIOSH has used data from other  
18          facilities to reconstruct individual radiation  
19          doses for Bethlehem Steel claimants. In  
20          addition, NIOSH completed its initial profile  
21          of conditions at Bethlehem Steel, the document  
22          that is the basis for dose reconstruction,  
23          without even interviewing surviving workers.  
24          Former workers then came forward with  
25          information that demonstrated major flaws in



1 the site profile.

2 While NIOSH has made some improvements to their  
3 site profile, the data needed to accurately  
4 reconstruct dose exposure for Bethlehem Steel  
5 workers does not exist. Under these  
6 circumstances, EEOICPA requires that Bethlehem  
7 Steel be placed in a special cohort.

8 Finally, the denials are not based on records  
9 from the Bethlehem Steel plant, but from  
10 calculated reconstructions based on sampling  
11 from similar plants. Simply stated, it is  
12 wrong to deny the former employees at Bethlehem  
13 Steel the compensation which, through their  
14 hard labor and sacrifice, they have so  
15 obviously earned. They served our nation in  
16 her time of need. They suffered as a result of  
17 this service, though no fault of their own.  
18 And now they deserve justice in the form of  
19 compensation from the very system that was  
20 established to aid those in exactly this  
21 situation.

22 There are 717 cases arising from the exposure  
23 to nuclear materials at the Bethlehem Steel  
24 plant. According to NIOSH, as of March 20th,  
25 2007 less than half of those claims have

1           resulted in compensation. We believe that this  
2           record is unacceptable, and that the proposed  
3           SEC petition would present a much more  
4           equitable and fair result for these families.  
5           Therefore, we respectfully request the Board to  
6           recommend approval of the petition so that this  
7           terrible situation can be laid to rest, and the  
8           many families who have been wrought with so  
9           many tragedies can finally have peace of mind.  
10          Sincerely, Senator Hillary Rodham Clinton,  
11          Senator Charles E. Schumer, Representative  
12          Brian Higgins, Representative Thomas Reynolds,  
13          and Representative Louise Slaughter.

14          **DR. ZIEMER:** Okay. Thank you very much, Jason.  
15          Then let's proceed to the Los Alamos SEC  
16          petition, and Dr. Greg Macievic is here today -  
17          - I think Greg's here -- there he is.

18          **MR. BROEHM:** Actually, I'm sorry, one more --

19          **DR. ZIEMER:** Oh, we've got one more. Greg,  
20          hold up -- hold up a moment.

21          **MR. BROEHM:** I've been told by Representative  
22          Shimkus's staff that he is calling in right now  
23          --

24          **DR. ZIEMER:** Oh, okay.

25          **MR. BROEHM:** -- and would like to make comments

1 on the Dow petition, so --

2 **DR. ZIEMER:** Yes, we -- we will waive -- or  
3 insert that here, even though we're not on the  
4 Dow topic, to fit his schedule. Are we -- are  
5 we on the line yet?

6 (No responses)

7 (Pause)

8 **DR. WADE:** (Off microphone) (Unintelligible)

9 **DR. ZIEMER:** Okay. Are we on the line yet?

10 (No responses)

11 **UNIDENTIFIED:** (Unintelligible)

12 **DR. WADE:** Representative Shimkus, are you on  
13 the line?

14 (No responses)

15 **DR. ZIEMER:** Representative Shimkus?

16 (No responses)

17 Okay, we'll hold just a moment.

18 (Pause)

19 **UNIDENTIFIED:** (Unintelligible)

20 **DR. ZIEMER:** What'd she say?

21 **DR. WADE:** He's dialing now.

22 **DR. ZIEMER:** Oh, dialing now. Thank you.

23 (Pause)

24 **DR. WADE:** Representative Shimkus, are you on  
25 the line?

1           **REPRESENTATIVE SHIMKUS:** Hello?

2           **DR. ZIEMER:** Hello, Representative Shimkus?

3           **REPRESENTATIVE SHIMKUS:** Yes, sir.

4           **DR. ZIEMER:** Yes, fine, we're pleased to have  
5 you address the Board here. The podium is  
6 yours.

7           **REPRESENTATIVE SHIMKUS:** Thank you. First let  
8 me introduce myself. I am Congressman John  
9 Shimkus of the 19th District of Illinois. My  
10 District does not include where the Dow plant  
11 sat in Madison, but many of the workers from  
12 Dow live in my District. I have been involved  
13 with many of these claims for six years. I  
14 want to thank Dr. Ziemer and members of the  
15 Board for allowing me the opportunity to  
16 address you by phone today. I'm at the airport  
17 actually, trying to catch a plane, but votes in  
18 Washington prohibited me from being there  
19 personally. But my District Director, Deb  
20 Detmer, is there representing me. She also  
21 represented me at a meeting in Cincinnati and  
22 previous meetings in St. Louis.  
23 I'm not going to take much of the Board's time,  
24 but do have two issues I would like to raise.  
25 One, I realize there has been some discussion

1           internally regarding the validity and  
2           credibility of the workers' affidavits. I want  
3           to stress strongly to the Board that these  
4           affidavits should be taken at face value. I  
5           have personally met with several of these  
6           workers who provided the Board an affidavit. I  
7           know their stories. To suggest that these  
8           stories are anything less than credible is an  
9           affront to these men.

10          Second, I want to stress my very strong opinion  
11          that the residual period for uranium should be  
12          covered under the SEC through 1998. Many of  
13          these workers have been waiting for dose  
14          reconstructions and for their cases to be heard  
15          for years. The Board has the authority and the  
16          power to add the residual period into the SEC,  
17          and I strongly urge you to consider that  
18          option.

19          I want to thank you for your service on this  
20          Board. Thank you for taking time to listen to  
21          me, and in closing urge you to give my requests  
22          every consideration.

23          **DR. ZIEMER:** Thank you very much,  
24          Representative Shimkus. We appreciate your  
25          taking the time. We hope you catch your plane.

1                   **REPRESENTATIVE SHIMKUS:** I think I will. Thank  
2                   you very much.

**LOS ALAMOS NATIONAL LABORATORY SEC PETITION**  
**DR. GREG MACIEVIC, NIOSH, OCAS**  
**PETITIONER COMMENTS**

3                   **DR. ZIEMER:** Now we'll proceed to the Los  
4                   Alamos presentation, and Greg -- there you are  
5                   -- please take the podium.

6                   **DR. MACIEVIC:** Slowly making my way up here.  
7                   My name's Greg Macievic and I'm a health  
8                   physicist with the Office of Compensation  
9                   Analysis and Support, and I'm here to present  
10                  the SEC petition evaluation report for the Los  
11                  Alamos National Labs.  
12                  Los Alamos -- the petition was submitted to  
13                  NIOSH on behalf of a class of employees. The  
14                  initial class definition that all workers of  
15                  LANL working in all technical areas from 1943  
16                  to 1979 was developed and submitted. The  
17                  number of claims submitted for energy employees  
18                  who potentially meet the proposed class  
19                  definition criteria is 657.  
20                  The evaluation is a two-pronged process  
21                  established by EEOICPA and incorporated into 42  
22                  CFR 83.13(c)(1) and 42 CFR 83.13(c)(3). And  
23                  one, is it feasible to estimate the level of  
24                  radiation doses of individual members of the

1 class with sufficient accuracy; and two, is  
2 there a reasonable likelihood that such  
3 radiation dose may have endangered health of  
4 the members of that class.

5 Los Alamos is a unique site in that you have  
6 areas that are essentially production-like and  
7 also areas that are highly labor-- laboratory-  
8 like and do research and special types of  
9 projects. There are over 80 -- 75 technical  
10 areas, and the prim-- they are primarily  
11 concerned with nuclear weapons development,  
12 testing and related activities. There is  
13 biomedical -- there are biomedical studies of  
14 tritium and plutonium, experimental application  
15 of mesons to medical therapy, fission products  
16 studies, dynamic testing of uranium, neutron  
17 cross-section measurements, source development,  
18 criticality studies, reactor developments and  
19 controlled fusion studies.

20 The covered employment period begins in 1943  
21 when the site opened, and continues to the  
22 present for any dose reconstruction.

23 LANL can essentially be broken down into  
24 several functional areas of activity that are  
25 relevant to this class. We have weapons

1           development and testing, critical assemblies  
2           and reactors, reactor development,  
3           accelerators, X-ray equipment, radiography  
4           sources, biomedical research, Project Sherwood  
5           -- which is a fusion research and also other  
6           fusion research activities, waste treatment and  
7           disposal, and residual contamination from the  
8           RaLa project due to strontium-90 post-July  
9           1963.

10          And as you can see from this slide, there are  
11          several radionuclides of concern, and since  
12          LANL itself, Los Alamos, dealt with pretty much  
13          everything under the sun. The alpha radiation  
14          that we looked at is major concern are  
15          americium-241, curium, protactinium, plu--  
16          polonium; plutoniums-238, 239 and 40; radium-  
17          226 and its progeny; thorium-230, thorium-232  
18          and its progeny; uranium-234, 35, 38 and 33.  
19          Beta/gamma hazards came from actinium-227,  
20          carbon-14, cobalt-60, cesium-137, tritium,  
21          iodine-131, phosphorus-32, plutonium-241,  
22          radium-226 and its progeny, sulfur-35,  
23          strontium-90, yttrium-90, thorium-32 and its  
24          progeny; U-235 and its progeny, essentially  
25          thorium-231; U-238 and its progeny with



1 thorium-234 and protactinium-234m.

2 There also is neutron radiation that was quite  
3 prevalent at Los Alamos, and we have sources  
4 from plutonium production, operating reactors,  
5 accelerators, criticality experiments,  
6 chemistry and metallurgy, and other neutron  
7 sources.

8 I'd like to give now a summary of the  
9 information that we have available for dose  
10 reconstruction at the site. External  
11 dosimetry, or external radiation exposures, are  
12 based on routine monitoring to the employees.  
13 They started out with pocket ionization  
14 chambers for neutrons and photons, worked up to  
15 film in the -- 1944/45 time period, then later  
16 on into the SEC period TLDs were used. Now the  
17 thing is is that relevant data are not  
18 available from which an estimate of all the  
19 radionuclides source terms can be developed.  
20 And we have for environmental exposures for  
21 internal and external, for the internal  
22 exposures to environmental radiation, there is  
23 -- no data were provided for the years prior to  
24 1970. 1970 to '75, there's data, but no  
25 developed methodology exists yet for that --

1           that data. For external dosimetry, area film  
2           badge monitoring started post-1965.  
3           Now the things that we can do or feel we have  
4           sufficient information to feasibly reconstruct  
5           some dose is on internal exposures to  
6           plutonium, uranium, tritium and polonium. And  
7           this is straight from Table 7-10 of the -- or  
8           to see Table 7-10 of the ER, and later on in  
9           the slides I have the actual table so you can  
10          see what we're talking about.  
11          And we believe we can do these dose  
12          reconstructions for these particular  
13          radionuclides because we do have bioassay  
14          monitoring, urinalysis data, for a majority of  
15          the time period for the proposed class. We  
16          have in vivo monitoring beginning in 1970.  
17          There is some screening data for Humco devices,  
18          which were sodium iodide detectors that  
19          measured for strontium-90 and cesium-137 that  
20          go back into the '50s, but they are just  
21          screening methodologies. And we also have  
22          coworker data that we can develop for these  
23          particular people with these radionuclides.  
24          Now this is the list -- a summary of the  
25          deficiencies in the data that we have for LANL

1 by period. As you can see, 1943 to 1949, we  
2 don't have data for tritium. It essentially  
3 starts in 1950 for tritium. No mixed fission  
4 product or activation product data. We can't  
5 do -- we're not -- no dose reconstruction for  
6 americium-241 if we don't have any plutonium  
7 data that we can associate it with, or we have  
8 some new bioassay data that we're looking at  
9 that has to be validated, but otherwise it  
10 can't be done.

11 1950 to 1969 we have mixed fission products  
12 and, again, the mixed activation products, and  
13 we need validation on some newly-identified air  
14 sampling data that's come in. Americium-241 in  
15 the 1950s, they had pure americium-241 that  
16 they used in making sources like  
17 americium/beryllium sources, and you also had  
18 the americium associated again with the  
19 plutonium. And if you don't have that data  
20 associated with it, you can't do anything with  
21 the americium-241. And again the thoriums,  
22 actinium, protactinium, neptunium and curium.  
23 1970 to '75, the same players are in there  
24 again with the mixed fission products,  
25 americium-241, the thoriums, neptunium and

1 curium and protactinium. So these are playing  
2 all through the period, and that's the key, is  
3 that during the analysis of the data LANL  
4 health physics and radiation safety basically  
5 concentrated on the majority -- or on the  
6 activities that were of the -- that gave the  
7 largest hazard at the time, which was the  
8 plutonium, polonium and so on. But there are  
9 periods throughout the history where these  
10 other radionuclides make a presence where they  
11 do become hazards, and there's really no  
12 monitoring method that was there available for  
13 us to go back and look and make some kind of  
14 reasonable estimate of a maximum dose for an  
15 individual person.

16 Air sampling data is not available for all  
17 years of operation, and is deficient for  
18 fission products and some of the exotic  
19 radionuclides like I've just shown on the other  
20 slide. We have new data, but it's intermittent  
21 and non-inclusive for all areas.

22 For the medical exposure due to chest X-rays,  
23 we do have information that goes back and can  
24 reconstruct medical doses. They were on an  
25 annual basis, the X-ray -- medical X-ray, so

1           that we do have information and also, using  
2           other Technical Basis Documents, we can -- feel  
3           we can reconstruct the dose there.  
4           Now from the petitioner's side, the petitioner  
5           provided information and affidavit statements  
6           in support of the petitioner's belief that  
7           accurate dose reconstruction over time is  
8           impossible for all workers of LANL working in  
9           all tech areas from 1943 to '75. And this was  
10          based on insufficient data, records do not  
11          exist, and lack of bioassay data. The petition  
12          was qualified by NIOSH on August 7th, 2006.  
13          So we come to the conclusion of what is  
14          feasible to do dose reconstructions for, and in  
15          this table, this is the table straight out of  
16          the ER, where for -- source of exposure for  
17          internal, we have tritium where we can do dose  
18          reconstructions from '50 to -- 1950 to '75, but  
19          the early years we don't have because there is  
20          no information essentially on tritium or any  
21          urinalysis until 1950, so 1943 to 1949 would  
22          not be feasible to do dose reconstructions.  
23          Polonium, 1944 we believe we can reconstruct  
24          from 1944 to 1956. Those -- that's -- those  
25          are the years when the polonium was actually

1 present on-site, so that covers that span.

2 That's why 1943's not there; it wasn't present  
3 in '43.

4 For plutonium, 1944 to 1975. 1943 is left out  
5 because basically there was only milligram  
6 quantities of plutonium at Los Alamos in 1943.  
7 Uranium, we feel we can cover the entire period  
8 from 1943 to '75. But now all those other  
9 players of actinium, curium, neptunium,  
10 thorium, strontium, various isotopes of  
11 concern, other things that we had that were on  
12 that list, and mixed fission products and  
13 activation products, the data does not support  
14 reconstruction of dose.

15 On the external dosimetry side we have gamma  
16 dose reconstruction, believe it's feasible from  
17 1946 to '75, but not from '43 through '45. In  
18 the early years -- they only first monitored  
19 for just gamma in the early years, but there is  
20 data in the records for individual persons, but  
21 when a review was done of all the claimants for  
22 LANL, they could not find dosimetry information  
23 previous to -- from '43 to '45 there was  
24 nothing in the files for that.

25 Beta radiation, shallow dose, skin dose, was --

1           can be reconstructed from '49 to '75. In the  
2           earlier years the concern was not on shallow  
3           exposures or skin dose and beta dose. It was  
4           shifted more to penetrating dose with gamma and  
5           also in the neutrons.

6           And neutron dosimetry, we could -- we feel we  
7           can reconstruct feasibly the dose from 1946 to  
8           1975, but from 1943 to 1945 it's the same thing  
9           with lack of data in records that -- before --  
10          the individuals for the claimants, and the data  
11          itself being more sparse.

12          Occupational medical X-rays, we feel we can do  
13          that for the entire period, 1943 to 1975.

14          So as far as health endangerment, there is  
15          concern. NIOSH has determined that members of  
16          the class were not exposed to radiation during  
17          a discrete incident likely to have involved  
18          levels of exposure similarly high to those  
19          occurring during nuclear criticality accidents,  
20          it wasn't a common experience, but we do  
21          believe -- that is, evidence indicates that  
22          some workers in the class may have accumulated  
23          chronic exposures sufficient to endanger their  
24          health.

25          So, after discussions that occurred yesterday,

1           the -- and re-looking at the class definition,  
2           we've determined that all employees of the DOE,  
3           its predecessor agencies or DOE contractors or  
4           subcontractors, who were monitored or should  
5           have been monitored for radiological exposures  
6           while working in operational Technical Areas  
7           with a history of radioactive material use at  
8           the Los Alamos National Lab for an aggregate of  
9           at least 250 workdays during the period from  
10          March 15th, 1943 through December 31st, 1975,  
11          or in combination with workdays within the  
12          parameters established for one or more of the  
13          other classes of employees in the SEC. And the  
14          reason we had excluded several Technical Areas  
15          and NIOSH determined that in all our other  
16          proposals or SEC petitions where we did make a  
17          statement of the -- in the class definitions,  
18          we never put in areas or buildings that were  
19          excluded from the class. It was always what  
20          was in the class, so we felt that should not be  
21          in there. Those were removed, and an addendum  
22          was made where we lay out all the Technical  
23          Areas that are included in the class, which  
24          means any Technical Area that is not in that  
25          addendum could potentially be solicited to be



1            looked at for further study to see if it should  
2            be included in some other class or some other  
3            proposal to see if SEC is required.

4            So, for the recommendation, for the period  
5            March 15th, 1943 through December 31st, 1975,  
6            NIOSH finds that it cannot reconstruct doses  
7            for members of the proposed class with  
8            sufficient accuracy, so the feasibility of  
9            doing it is no, and health endangerment is yes  
10           for that class.

11           Issues that need to be resolve, and we're doing  
12           further study with data as some information  
13           comes, and re-looking at data that we have and  
14           making some other determinations, we're looking  
15           at mixed fission products -- and this will all  
16           be resolved, these issues, by the time of the  
17           update of the site profile, which is sometime  
18           in June. We're looking at mixed fission  
19           products and mixed activation products, data  
20           that we have -- some extra data that has come  
21           up in there and looking at validation.

22           Determination of processes associated with the  
23           americium I talked about and its relationship  
24           with plutonium handling. And then a further  
25           review of some new information on air and other

1 data for -- and methodologies for actinium,  
2 curium, neptunium, thor-- thorium and  
3 protactinium.

4 So this -- we recommended this class and  
5 petition time frame to be added now to the SEC  
6 rather than delay while we're looking -- we did  
7 not want to drag on the period while we're  
8 looking at other data, so we're proclaiming the  
9 1943 to '75 as the -- as the SEC. So NIOSH can  
10 reopen a petition or present an 83.14 if  
11 further evaluation warrants.

12 And with that, I thank you.

13 **DR. ZIEMER:** Thank you, and an added comment  
14 from Larry Elliott here and then we'll hear  
15 from the petitioners.

16 **MR. ELLIOTT:** I just want to make it clear for  
17 the record -- and thank you, Greg. We sprung  
18 this on Greg when he walked off the plane  
19 today. We worked with the petitioner, Mrs.  
20 Ruiz, and with Andrew and with Michele Ortiz to  
21 refine the definition that you've been given  
22 now. It is different than the definition that  
23 exists in the evaluation report that you've  
24 been provided. We took out the --

25 **DR. ZIEMER:** We have an addendum page, however,

1           that --

2           **MR. ELLIOTT:** Okay, so you have that.

3           **DR. ZIEMER:** Yes.

4           **MR. ELLIOTT:** We're going to provide a revised  
5           evaluation report. This will be the addendum  
6           to that, so I just want to make that clear for  
7           the record.

8           **DR. ZIEMER:** Thank you very much, Larry, and  
9           thank you, Greg. We're going to hear -- give  
10          Michele Ortiz, who's --

11          **DR. WADE:** (Off microphone) (Unintelligible)

12          **DR. ZIEMER:** Oh, I'm sorry, okay. First -- oh,  
13          Eleanor, okay -- yeah. I'm sorry, I -- I --  
14          yeah. I'm -- I'm getting ahead of myself.  
15          We'll hear from the petitioner, then we'll hear  
16          from Michele. Thank you.

17          **MS. RUIZ:** Good afternoon, Board members, and  
18          thank you for the opportunity to speak to you  
19          today. My name is Harriet Ruiz and I am a  
20          petitioner. I would like to thank you and  
21          NIOSH for getting us to this point, and all the  
22          hard work that you do and NIOSH also does on --  
23          on behalf of all the SEC petitioners. It  
24          really is appreciated.

25          Let's see, I would now like to read a letter

1 from the Honorable Ben Lujan, who's the Speaker  
2 of the House and who is also a petitioner with  
3 me on this petition. I -- I also believe that  
4 you have a pass-out of that letter. This  
5 letter was written to Laurie Breyer because  
6 she's the one that -- she's been the one that's  
7 contacting him.

8 So this is (reading) Dear Ms. Breyer: I  
9 appreciate the recent correspondence informing  
10 me of the meeting and discussion on the LANL  
11 SEC petition evaluation report of (sic) May 3rd  
12 in Denver, Colorado. I regret that my schedule  
13 will not allow me to attend the scheduled  
14 meeting. It is my continued hope and prayer  
15 that the petition is acted upon favorably, and  
16 that the DOE will finally take the  
17 responsibility for the illness for (sic) which  
18 these workers suffer. Many continue to suffer  
19 and die spiritually and physically and will  
20 never see justice rendered.

21 It is imperative that the facts contained in  
22 the petition be addressed and that the brave  
23 and courageous men and women who worked at LANL  
24 in the early years and were exposed to  
25 radiological substances be given the attentions

1           they so deserve. The consistent disregard for  
2           the occupational safety and health at LANL has  
3           notoriously become a classic example of  
4           injustice to the people who, through their  
5           sacrifice, were essentially in winning World  
6           War II and especially -- I believe -- and I'm  
7           adding "especially" -- the Cold War.  
8           It is my hope that NIOSH will do what Congress  
9           intended them to do -- lift the burden of proof  
10          off the shoulders of the workers and accept  
11          that responsibility. Current Governor Bill  
12          Richardson, when he was Secretary of Energy,  
13          said "We are not going to make workers find  
14          past records because in many cases the workers  
15          were not told the truth. The burden of proof  
16          is on the government and not the worker. The  
17          biggest change in policy is that the government  
18          will not contest many of the claims and workers  
19          would receive the benefit of the doubt when  
20          plant medical records are missing or flawed."  
21          Thank you all -- thank you for all your efforts  
22          on behalf of the workers. I pray that there  
23          will be a favor-- favorable action and the  
24          treatment of these workers will restore public  
25          confidence in the process that has not been

1 favorable that have led many (sic) to say "If  
2 the exposure does not kill you, the process we  
3 are subjected to will." Sincerely, Ben Lujan,  
4 Representative, Speaker of the House.

5 Thank you. And with that I am going to be very  
6 short today and I'm going to present Andrew  
7 Evaskovich and he's going to give you a  
8 Powerpoint presentation.

9 **DR. ZIEMER:** Thank you. Andrew, we'd be  
10 pleased to hear from you now.

11 **MR. EVASKOVICH:** Good afternoon. My name is  
12 Andrew Evaskovich. I'm a guard at Los Alamos  
13 and I'm a representative from the International  
14 Guards Union of America, Local No. 69. To  
15 begin I'd like to thank Larry Elliott and his  
16 team for working with us today on the class  
17 definition and actually putting this together.  
18 We found it to be very beneficial and we  
19 appreciate what he has done for us. Thank you,  
20 Larry.

21 Let me begin. It is the question that drives  
22 us. We would not be where we are today if not  
23 for our inquisitiveness. Archimedes, Newton,  
24 Rutherford and many others had questions. The  
25 answers to their questions often led to more

1           questions.

2           Let me be more specific. The National Research  
3           Council report radiation dose reconstruction  
4           for epidemiological uses states the criteria  
5           for the design of a dose reconstruction project  
6           must be expressed in terms of specific  
7           questions.

8           The question before us today is this: Can  
9           NIOSH estimate radiation doses with sufficient  
10          accuracy for LANL employees in the years 1943  
11          to 1975? NIOSH finds that it cannot  
12          reconstruct doses for members of the proposed  
13          class with sufficient ac-- accuracy.

14          However, certain Technical Areas needed to be  
15          evaluated to be included into this petition --  
16          in-- into the class. I'm going to talk about  
17          reason why I believe that NIOSH should evaluate  
18          these areas and why I think they should be  
19          included. I will show you several photographs  
20          and maps, and I will also discuss technical  
21          reports that say radiation -- radionuclides  
22          were in these Technical Areas.

23          To begin, we have LANL and surrounding areas.  
24          If you look at the map on display, in the blue  
25          there is Los Alamos National Laboratory as it

1 exists now. You see the city of Los Alamos and  
2 the bedroom community of White Rock. To the  
3 southeast is Santa Fe and Espanola, and it is  
4 surrounded by Santa Fe National Forest and  
5 (unintelligible) National Monument.  
6 This is State Road 502 looking west to the  
7 (unintelligible) Plateau where Los Alamos is  
8 located. You see the mountains there. Those  
9 are the Jemez Mountains, and the brown there is  
10 the plateau, and on this plateau is where the  
11 Los Alamos National Laboratory is located.  
12 This is an aerial view of Los Alamos National  
13 Laboratory. You see the main Technical Area 3  
14 here where most of the administrative offices  
15 and many of the labs are located. The airport  
16 is located here and the Neutron Science Center  
17 is located here. S Site is in this area here  
18 where a lot of the original explosive testing  
19 was conducted. The residential areas are over  
20 here, and Biocanyon GHN\* is located here.  
21 This is Ashley Pond and Fuller Lodge. Fuller  
22 Lodge was the first headquarters of the  
23 laboratory in 1943. That's where they  
24 initially set up. Fuller -- Ashley Pond is a  
25 prominent feature on the Technical Area 1 map



1           that I'll be showing you later, but in the  
2           background there, that's Fuller Lodge. It's a  
3           historical building that they preserved and  
4           they've got some -- a partial museum in there.  
5           And another view of Ashley Pond. Here's the  
6           Los Alamos Inn, and this is a building in  
7           Technical Area 0. It's a current building that  
8           Los Alamos occupies, the laboratory does. Now  
9           this area in here was the formal Technical Area  
10          1 or the main Technical Area.  
11          This is the current map of Los Alamos National  
12          Laboratory and the various Technical Areas. As  
13          you can see, it's a large area, and there are  
14          many Technical Areas which are displayed here.  
15          This is the Los Alamos Scientific Laboratory,  
16          and this is taken from the DOE final  
17          environmental impact statement number 18.  
18          There are 30 Technical areas on this map, and  
19          the numbers and locations are different from  
20          the map that we just saw.  
21          NIOSH needs to evaluate these following areas  
22          in TA1Z which I will discuss later: TA-17,  
23          which is highlighter there by the laser, is  
24          listed as canceled in the annex, or the table  
25          in the SEC report. Currently it is TA-37 on

1           the -- on the current map that's TA-37.  
2           According to the SEC evaluation and to the  
3           Technical Basis Document site description, TA-  
4           37 is a magazine area and has depleted uranium  
5           stored there.  
6           TA-19, which you'll see on this map, is located  
7           right here. In the evaluation report it's  
8           listed as the East Gate Laboratory and it was  
9           deactivated by the AEC, I believe. The East  
10          Gate Laboratory contained a 300 curie cobalt-60  
11          source. In addition, Emilio Segré, one of the  
12          original physicists that was at the Lab,  
13          conducted spontaneous fission experiments  
14          there. The source for that information would  
15          be Los Alamos document LA-UR-92-810.  
16          Additionally, Richard Rhodes, in his book, *The*  
17          *Making of the Atomic Bomb*, referred to Emilio  
18          Segré and the spontaneous fission experiments  
19          at the East Gate Laboratory. And the East Gate  
20          Laboratory would be located approximately in  
21          this area here, and the reason they moved it  
22          over there is because of the radiation from  
23          Technical Area 1, or the main Technical Area,  
24          was interfering with the instrumentation that  
25          he needed to observe the spontaneous fission.

1 TA-28, which is located here, is shown as 13 on  
2 this map, but you'll see it over here on this  
3 map. Let me -- let me clarify. That's TA-28  
4 on this map. On the current Los Alamos  
5 Technical Area map, it's TA-13. Currently TA-  
6 28 is a magazine area. Page 36 of the SEC  
7 evaluation report states that TA-28 has  
8 depleted uranium. Additionally, page 14 of the  
9 Technical Basis Document site description  
10 states that TA-28 has depleted uranium. So two  
11 documents that NIOSH prepared states that  
12 depleted uranium in in those areas.

13 I'd like to continue and refer back to the RaLa  
14 petition and the SEC that was approved. I'd  
15 like to point out that the advisory committee  
16 on the human radiation experiments prepared a  
17 report that had a quote from H. L. Shipman\*,  
18 health division leader. He said about the RaLa  
19 shots very significant levels of activity can  
20 be deposited on the ground at least within a  
21 radius of three miles. I've included this  
22 report information on the disks I've provided  
23 to NIOSH, as well as the Board. The report has  
24 a table of the 254 RaLa shots, including wind  
25 direction and monitored activity of the clouds

1           that were produced from those shots, and I've  
2           included other reports on Technical Area 10  
3           concerning radioactive contamination in those  
4           areas.

5           This petition we're now discussing is a second  
6           chance to address the issues that have come up  
7           from the RaLa shots, just to ensure that people  
8           are covered in the class. That's my concern  
9           and why I bring that up.

10          If we refer to your handouts now, this should  
11          have been issued to everybody, the maps of Los  
12          Alamos -- I'm sorry, only the Board members  
13          have these. If you look at the map, it  
14          displays New Mexico and it displays Los Alamos.  
15          If you look at the map where it says Santa Fe  
16          National Forest and Los Alamos, those areas  
17          were the original laboratory. They acquired  
18          all that land in order to be the laboratory,  
19          and it shrank down to become what is currently  
20          the laboratory now.

21          This is Los Alamos site in 1943. It's known as  
22          Site Y of the Manhattan Engineering District.  
23          Right there is the main Technical Area or TA-1.  
24          The Anchor Ranch Proving Ground, which is  
25          currently considered S Site now, or TA-16 area.

1 This is Area A, Area B, Area C, Area D and Area  
2 E. As you can see, the map is different from  
3 the map that was prepared for the Los Alamos  
4 Scientific Laboratory.

5 Major expansion of the laboratory occurred in  
6 1951 to 1953 with the addition and construction  
7 of 14 Technical Areas. As you can see going  
8 backwards, there have been many changes to the  
9 Los Alamos area and the laboratory.

10 This is Technical Area 1 as it was -- existed  
11 at the time of -- when the laboratory was first  
12 initiated. Building G contained uranium and  
13 22-- uranium and radium-226. Building M  
14 contained enriched uranium-235, and metallurgy  
15 and recovery was conducted there. You can see  
16 here is Building Z and the proximity of the  
17 buildings to each other is very close. There  
18 is Ashley Pond as I referred to earlier, a  
19 prominent feature on this map.

20 This is a historical photo of Technical Area 1.  
21 The buildings were put up in a hurry because of  
22 the wartime construction. The material used in  
23 the construction of the building was the same  
24 as Army barracks. The exteriors were drop  
25 siding or asbestos cement shingles, pitched

1 roofs with asphalt roofs -- pitched roofs  
2 covered with asphalt shingles, and the  
3 interiors were gypsum-board walls, so they were  
4 not the (unintelligible) construction that we  
5 have now in buildings containing radioactive --  
6 or radionuclides. And if you'll look at the  
7 photograph, notice the closeness of the  
8 buildings. In Technical Area 1 they had  
9 several buildings that were in approximately a  
10 25-acre area.

11 This is TA-1 Building Z. If you look again at  
12 the construction, the roof, the walls, and this  
13 is where the Cockroft-Walton accelerator was  
14 stored. According to the December 1977 report  
15 LA-6887, radiological survey and  
16 decontamination of the form-- former main  
17 Technical Area TA-1 at Los Alamos, New Mexico,  
18 it states in Appendix B of that report that  
19 tritium was used in the building.

20 This is a photograph of the Cockroft-Walton  
21 accelerator. The Technical Basis Document site  
22 description, page 29, states that workers were  
23 exposed to gamma and neutron radiation from  
24 this device.

25 We need to discuss cross-section. The

1 experiments that were conducted with the  
2 Cockroft-Walton accelerator were cross-section  
3 studies. A cross-section is a measure of the  
4 probability that a collision will occur between  
5 a beam of radiation and a particular particle,  
6 expressed as the effective area presented by  
7 the particle in that particular process. It is  
8 measured in square meters or barns, and the  
9 terminology of barns came about from hitting  
10 the broad side of a barn.

11 Cross-section is also broken down into the  
12 elastic cross-section, which amounts for all  
13 elastic scattering in which the radiation loses  
14 no energy to the particle and the inelastic  
15 cross-section accounts for all other  
16 collisions. It is subdivided as to account for  
17 specific interactions such as the absorption  
18 cross-section, fission cross-section and  
19 ionization cross-section. I believe those  
20 terms are self-explanatory.

21 The cross-section reports. These were repaired  
22 after they did their experiments, LANS777,  
23 preliminary results of cross-section, fission  
24 cross-section of uranium-238, September 8,  
25 1948. Obviously they did an experiment with

1 uranium. LA-1258, the neutron-induced fission  
2 cross-section of U-236 as a function of energy,  
3 May 26, 1951. LA-1279, total cross-sections  
4 for 14 million electron volt electrons, July  
5 16, 1951; tritium was used in that experiment.  
6 LA-1480, cross-sections for the  
7  $D(DN)HE3ND(DP)H3$  reactions from 14 to 110 kilo  
8 electrovolts, October 1952, and tritium was  
9 used in that experiment. LA-1483, cross-  
10 sections of tritium, hydrogen and helium for  
11 fast neutrons, October 1952. And LA-1681,  
12 fission cross-section measurements, June 1954,  
13 uranium-238.

14 I've included these reports as well in PDF  
15 format on the disk that's available.

16 This is Building U of Technical Area 1. It was  
17 part of the RaLa petition and SEC. In the  
18 building -- Building U held tritium, uranium-  
19 235, uranium-238, carbon-14 and radium-226, and  
20 Building U was adjacent to Building Z.

21 Slide 18, this is Building T, adjacent to  
22 Building Z. This was the division offices, and  
23 this is just to demonstrate the proximity of  
24 the buildings and the laboratory.

25 This is Building D. This is the plutonium



1 building. The Centers for Disease Control, Los  
2 Alamos Historical Document Retrieval and  
3 Assessment, lodger\* report, states that the  
4 airborne effluents through the rooftop vents  
5 were unfiltered and unmonitored. And this is  
6 an issue because the winds are from the south  
7 and southwest consistently in Los Alamos.  
8 Building D is located here; Building Z is here.  
9 So the winds would be blowing in this direction  
10 or in this direction, so the effluents would be  
11 going towards Building Z. And the source of  
12 this information is the most recent site-wide  
13 environmental impact statement that was  
14 prepared for Los Alamos.  
15 Storm Runoff. There's several major canyons in  
16 the Los Alamos area. Contaminants have been  
17 discharged into the canyons as waste, and storm  
18 runoff has carried those down and these will  
19 affect other Technical Areas from which they  
20 originated. Sediments containing high  
21 concentrations of radionuclides have been found  
22 in Pueblo Canyon, which is located around here;  
23 Los Alamos, Whartondad (sic) and Ancho Canyon  
24 discharge. LANL has discharged liquid  
25 radioactive waste, including tritium, cesium-

1 137, plutonium-238 and americium-241 into  
2 Pueblo Canyon -- located here. Americium-241,  
3 cesium-137, plutonium-239 and 240 are  
4 consistently found in sediments in Mortondad  
5 Canyon, located here. Elevated levels of  
6 radioactive americium-241, plutonium-238,  
7 plutonium-239 and 240 have been detected in  
8 Pajarito Canyon. I've included documentation  
9 on the waste streams in this -- on the disk, as  
10 well -- and Pajarito Canyon.  
11 Historically TA-45 waste treatment discharged  
12 into the Pueblo Canyon drainage system, which  
13 flows through portions of Technical Area-74.  
14 Detectable levels of plutonium have been found  
15 also, and discharges from TA-10 Biocanyon could  
16 have impacted TA-74. LA -- and this is from  
17 document LA-UR-92-810 again.  
18 In conclusion, I've shown you several  
19 illustrations and spoken about reasons why  
20 Technical Areas should not be excluded from the  
21 class definition or in fact included, since we  
22 have changed the definition. I have about 35  
23 documents included on the disk to support what  
24 I've said. With the time constraints on  
25 speaking, that's the reason why the documents





















1 estimates on the maximum dose. And the -- we  
2 don't really -- I mean --

3 **DR. ZIEMER:** I think we understand that, Greg.  
4 I think the question is perhaps -- if we  
5 parallel it with -- with the Rocky Flats case  
6 where we defined the class in terms of the  
7 doses that could not be reconstructed --

8 **DR. MACIEVIC:** Ah, yes.

9 **DR. ZIEMER:** -- whereas here it appears that  
10 we're saying that although some can be  
11 reconstructed and some can't, we're defining  
12 the class to cover everyone. That's what I  
13 think we need a little help on. Are you saying  
14 that you can't distinguish in this case those  
15 who have one or the other --

16 **DR. MACIEVIC:** Yes.

17 **DR. ZIEMER:** -- whereas in -- in the case here  
18 at Rocky, the claim is that we can distinguish  
19 between those that, for example, had -- or  
20 didn't have neutron exposures and they -- yes.

21 **MR. RUTHERFORD:** Pretty much what you answered  
22 is correct. What we determined was, one, that  
23 -- that the exposures and the radionuclides  
24 were over so many different areas, and -- and  
25 the time periods were -- you know, bounced

1           around, that we had to include everything,  
2           so...

3           **DR. ZIEMER:** So a given worker, you -- you  
4           can't say well, this one had tritium only.

5           **MR. RUTHERFORD:** Exactly.

6           **DR. MACIEVIC:** That's right.

7           **DR. ZIEMER:** Although it may be in an  
8           individual case that might turn out -- if  
9           someone didn't meet the SEC qualification for  
10          cancer --

11          **DR. MACIEVIC:** That's exactly right.

12          **DR. ZIEMER:** -- they might go back and say  
13          well, reconstruct on the basis of  
14          (unintelligible) tritium or --

15          **DR. MACIEVIC:** If you can show that a worker  
16          was only with a particular thing and have  
17          evidence of that, you can say yes, we can  
18          reconstruct it. But otherwise, because of the  
19          nature like --

20          **MR. RUTHERFORD:** Not exactly, no. Let me --  
21          let me correct Greg on that. What he -- what  
22          we're saying is right, for certain things,  
23          individual cases, there -- there are things  
24          that we can reconstruct. However, in total, we  
25          cannot reconstruct the complete dose for

1 individuals in all areas.

2 **DR. ZIEMER:** Yes, that clarifies it for me, I  
3 think. Mark, does it for you?

4 **MR. RUTHERFORD:** Okay.

5 **DR. ZIEMER:** Thank you.

6 **MR. RUTHERFORD:** Sorry, Greg.

7 **DR. ZIEMER:** Other que-- Jim.

8 **DR. MELIUS:** (Off microphone) (Unintelligible)

9 --

10 **DR. ZIEMER:** Use a -- get closer to the mike.

11 **DR. WADE:** LaVon, I think they're looking at  
12 you.

13 **DR. MELIUS:** Don't go away so quickly. I have  
14 sort of a similar question -- well, first a  
15 general question, why the cutoff at 1975?

16 **MR. RUTHERFORD:** Well, that's -- that's an  
17 excellent question. Go ahead, you've got  
18 something else on top of that?

19 **DR. MELIUS:** Well, do -- answer that one and  
20 maybe --

21 **DR. ZIEMER:** While he thinks about an excellent  
22 answer.

23 **MR. RUTHERFORD:** No, it's an excellent question  
24 and I think Greg tried to answer it, but I'm  
25 not sure he completely answered. If you look

1 at the petition, the petition was submitted to  
2 us up to 1975. There's still issues on the  
3 table after 1975, and we recognize those.  
4 However, for timeliness and -- we wanted to go  
5 ahead and -- and complete Ms. Ruiz's petition  
6 up for the time period that she had requested.  
7 So we have left it open and we -- we have  
8 committed to -- that we will evaluate those --  
9 those issues, and if we can -- if we determine  
10 it's feasible to do dose reconstruction, we'll  
11 put the -- we'll identify that in the site  
12 profile. However, if we determine it's not  
13 feasible, we will do an 83.14 to add additional  
14 years onto that.

15 **DR. MELIUS:** Okay. So -- so -- so I'm clear,  
16 the issues to be resolved in the revised site  
17 profile, there's a slide that was shown --

18 **MR. RUTHERFORD:** Yes.

19 **DR. MELIUS:** -- those are post-'75?

20 **MR. RUTHERFORD:** Yes.

21 **DR. MELIUS:** Okay.

22 **MR. RUTHERFORD:** Well, they continue beyond  
23 '75. We have data on mixed fission products  
24 that starts in the '70 to '75 period. However,  
25 when we went through the process, we were not

1 clear and we could not come up with a  
2 reasonable conclusion that we had enough data  
3 that -- that would support that the end of '75,  
4 yes, definitely, that's it, we're ready to --  
5 we can do dose reconstruction beyond that. So  
6 we committed that we would continue on the  
7 evaluation of the mixed fission products and a  
8 few of the other issues past '75 period to  
9 determine if we need to add additional years.

10 **DR. MELIUS:** Then I -- I have another question,  
11 and again, I might have missed part of the  
12 presentation -- this is Table 7.8, I'm not sure  
13 who -- the (unintelligible) is -- but you --  
14 you have sort of reserved -- you have things  
15 that you can't reconstruct, but then you say --  
16 then you have reserved, you know, sort of  
17 conditional on that -- there's americium-241,  
18 if no plutonium data or whatev-- I mean pending  
19 verification of newly-identified bioassay data  
20 and I -- I guess I'm trying --

21 **MR. RUTHERFORD:** Sure.

22 **DR. MELIUS:** -- trying to figure out how this -  
23 -

24 **MR. RUTHERFORD:** What --

25 **DR. MELIUS:** -- (unintelligible) defined --



1           **MR. RUTHERFORD:** -- what we will do in the  
2           updated site profile -- this is more for the  
3           non-presumptive cancers and the cancers that --  
4           that we will -- you know, what -- what we will  
5           do is we will further clarify that in the  
6           updated site profile. However, we have  
7           recognized that through the entire period up to  
8           '75 in total, we cannot reconstruct the whole  
9           dose for individuals in those Technical Areas.

10          **DR. MELIUS:** Okay. Okay. So -- so the --  
11          those would not affect the definition of the --

12          **MR. RUTHERFORD:** No, they would not.

13          **DR. MELIUS:** -- class that might -- of those --  
14          that clarification or changes --

15          **MR. RUTHERFORD:** Right.

16          **DR. MELIUS:** -- would affect your ability if  
17          you -- you --

18          **MR. RUTHERFORD:** Were not presumptive.

19          **DR. MELIUS:** -- things that you wouldn't be  
20          able to do.

21          **MR. RUTHERFORD:** Yes.

22          **DR. MELIUS:** Okay.

23          **DR. WADE:** A partial dose reconstruction.

24          **DR. MELIUS:** Okay.

25          **MR. RUTHERFORD:** Exactly. Exactly.



1           **MR. PRESLEY:** Or do you got a question?

2           **MR. GRIFFON:** I -- just -- just to -- and --  
3           and I think I've got the answer and I think I --  
4           - I accept -- I think I'm (unintelligible) on  
5           this, but just to clarif-- just to make sure  
6           this definition -- you know, we're -- it would  
7           include all workers and -- and the reason we're  
8           noting we can reconstruct for these other  
9           nuclides is that if they had a non-presumptive  
10          cancer, then you can go back and do a partial --  
11          - I mean it -- it -- we're not, by default,  
12          excluding certain TA areas because they only  
13          had like uranium or plutonium or something like  
14          that. I mean I -- I just don't want to do  
15          something --

16          **DR. ZIEMER:** It says all --

17          **MR. GRIFFON:** -- that I'm not --

18          **DR. ZIEMER:** -- it says all Technical Areas.

19          **MR. RUTHERFORD:** It says all Technical Areas.

20          **MR. GRIFFON:** All Technical Areas, right.

21          **MR. RUTHERFORD:** Now, we'll -- we said all  
22          Technical Areas --

23          **MR. GRIFFON:** I forgot it was reworded, yeah.

24          **MR. RUTHERFORD:** -- for (unintelligible), and I  
25          don't have the definition in front of me --

1 where radioactive materials -- in fact --

2 **MR. GRIFFON:** Yeah.

3 **DR. ZIEMER:** It's pretty inclusive.

4 **MR. GRIFFON:** I -- I just want to make sure,  
5 you know...

6 **MR. RUTHERFORD:** But we said all Technical  
7 Areas that -- moni-- or employees who should  
8 have been -- who were monitored, or should have  
9 been monitored, for (unintelligible) exposures  
10 while working in operational Technical Areas  
11 with a history of radioactive material. The  
12 question that we worked with the petitioner  
13 over the last couple of days, we originally had  
14 excluded some areas in the class definition.

15 **MR. GRIFFON:** Yeah.

16 **MR. RUTHERFORD:** One, as Greg had pointed out,  
17 that we -- we have never excluded areas before,  
18 and the reason why we don't exclude areas -- we  
19 identify areas where they -- the issues are --  
20 where -- the issues where it's not feasible, we  
21 know it's in these given areas. We never  
22 exclude areas, and that's because that would  
23 force us to -- you know, at a future date we  
24 may have to go against that if we get new  
25 information. So what we've said, right now

1 we've got a class definition. In our report we  
2 identify Technical Areas that we believe  
3 radioactive material was there. However, a  
4 petition is going to provide us additional  
5 information that, in our support to Department  
6 of Labor or -- in identifying these Technical  
7 Areas with radioactive material, we may  
8 determine that those additional areas need to  
9 be included.

10 **DR. ZIEMER:** Good. Thank you. Jim, did you  
11 have another comment or --

12 **DR. MELIUS:** No.

13 **DR. ZIEMER:** Oh, okay. I believe Mr. Presley  
14 had a --

15 **MR. PRESLEY:** Ready to make a -- ready?  
16 I'd like to make a motion that we accept this  
17 petition as written.

18 **DR. ZIEMER:** Okay, the -- the motion -- and the  
19 Chair will reinterpret a little bit -- is that  
20 we will recommend the approval -- or recommend  
21 that the -- to the Secretary that a class be  
22 added to the SEC, as described in this petition  
23 and evaluation report then, and if that motion  
24 --

25 **MR. CLAWSON:** (Off microphone) (Unintelligible)

1           **DR. ZIEMER:** -- it's seconded -- if it is -- if  
2           it is passed, we will ask that it be -- we'll  
3           get one of these straw votes again, which I  
4           hope doesn't cause confusion, but we will then  
5           get it reworded for final submission to the  
6           Secretary tomorrow.

7           Is there additional input, comments, questions  
8           on this motion? Basically a motion to  
9           recommend approval of the SEC at Los Alamos for  
10          the period specified in the Technical Areas.

11          **DR. MELIUS:** I'll second it.

12          **DR. ZIEMER:** It's been seconded. Are -- are  
13          you ready to vote? Does everybody know in this  
14          case what we're voting on?

15          **MS. MUNN:** Yes.

16          **DR. ZIEMER:** It's a little more clear? Little  
17          more clear.

18          All in favor, say aye? Well, we'll take a show  
19          of hands. Raise your right hand.

20                                (Affirmative responses)

21          It appears to be unanimous.

22          **DR. WADE:** It is unanimous.

23          **DR. ZIEMER:** And I'll -- for the record, are  
24          there any no votes?

25                                (No responses)

1 Any abstentions?

2 (No responses)

3 If not, the motion carries and we will have the  
4 revised wording tomorrow so that we have it in  
5 final form to send forward to the Secretary.

6 Los -- New Mexico delegation can certainly  
7 report this back to your constituents.

8 **MR. PRESLEY:** I understand that Dr. Melius will  
9 do the rewording on this?

10 **DR. MELIUS:** Yeah, I'm --

11 **DR. ZIEMER:** I believe Dr. --

12 **DR. MELIUS:** -- pretty close.

13 **DR. ZIEMER:** Dr. Melius has the template in his  
14 laptop.

15 **DR. MELIUS:** No, I actually have most of the  
16 (unintelligible) --

17 **UNIDENTIFIED:** Thank you, thank you, thank you.  
18 Bless you. Thank you.

**WR GRACE SEC PETITION**

**MR. LAVON RUTHERFORD, NIOSH, OCAS**

19 **DR. WADE:** Thank you. I think now maybe we'll  
20 go to W.R. Grace.

21 **DR. ZIEMER:** Okay, we're going to squeeze a  
22 little more in here, if we can. We'll move to  
23 the W. R. Grace petition, so...

24 **DR. WADE:** While -- while LaVon is getting

1 ready, let me read you an announcement.  
2 Friday's meeting will take place in Stanley  
3 One. Please take all your personal belongings  
4 with you at the conclusion of today's meeting.  
5 The Stanley One room is located towards the  
6 front lobby desk, down the long hallway, all  
7 the way at the end of the hall. So we're  
8 moving rooms, so if you would bring your  
9 personal belongings to your room and then to  
10 Stanley One in the morning.  
11 For -- for people's scheduling, I would propose  
12 we begin tomorrow with the Dow Madison  
13 petition, and then the Chapman Valve petition  
14 and then back on our agenda. We do this  
15 because there are people who want to call in  
16 for those activities and we want to give them  
17 at least a target for their activity.  
18 **MR. RUTHERFORD:** All right. Thank you, Dr.  
19 Ziemer, Board. I'm LaVon Rutherford. I'm the  
20 Special Exposure Cohort health physics team  
21 leader. I'm here to talk about the W. R. Grace  
22 SEC petition evaluation report.  
23 The W. R. Grace SEC petition was submitted  
24 under 83.14 to NIOSH by a petitioner whose dose  
25 reconstruction could not be reconstructed by



1 NIOSH. Our petition evaluation considered a  
2 class of workers very similar to the individual  
3 we determined that we could not reconstruct  
4 their dose.

5 I think you've seen this a few times, through  
6 Greg and a few others. We have a two-pronged  
7 test for the evaluation process. Our first  
8 test is is it feasible to estimate the level of  
9 radiation dose of individual members of the  
10 class with sufficient accuracy. If we answer  
11 yes to that question, we do not go to number  
12 two. However, if we answer no, then we -- is  
13 there a reasonable likelihood that such  
14 radiation doses may have endangered the health  
15 of members of the class.

16 A little background on W. R. Grace site. The  
17 Davison Chemical Company, a division of W. R.  
18 Grace, began processing radioactive materials  
19 in the late 1950s at the site of the current  
20 Nuclear Fuel Services. W. R. Grace is located  
21 in Erwin, Tennessee. It was a contractor for  
22 the Atomic Energy Commission from 1958 to 1970.  
23 W. R. Grace was contracted by the AEC to  
24 recover enriched uranium from uranium scrap.  
25 The AEC was the regulatory authority for this

1 site from 1958 to 1974. After 1974 the Nuclear  
2 Regulatory Commission, NRC, became the  
3 regulatory authority in 1975.

4 Radiological process relative to the class. W.  
5 R. Grace began operations by everything -- data  
6 -- or documents that we've reviewed, they began  
7 operations with the radioactive material in the  
8 latter part of 1957. Their principal  
9 operations included the conversion of high- and  
10 low-enriched uranium from UF-6 to a usable form  
11 to manufacture nuclear fuel. They also  
12 produced fuel consisting of uranium oxide mixed  
13 with thorium oxide and zirconium oxide. In  
14 addition, they produced fuel consisting of  
15 uranium oxide mixed with plutonium oxide and  
16 zirconium oxide. The scrap recovery  
17 operations, they had uranium -- that they did  
18 in support of the AEC were uranium scrap  
19 recovery operations.

20 Our sources relevant to the class. They had  
21 high- and low-enriched uranium from fuel  
22 fabrication and scrap recovery; thorium and  
23 plutonium oxide from fuel fabrication; and then  
24 we had thorium from uranium scrap recovery  
25 operations. We actually have -- we know that -

1           - here's a good -- the example, the urania-  
2           thoria scrap generated by the Elk River Reactor  
3           pellet fabrication, and we -- we -- I'll  
4           provide a little evidence of this later in the  
5           presentation.

6           And -- and the pro-- initially we would develop  
7           a site profile for these sites, and the site  
8           profiles would be used for dose reconstruction.  
9           In our development process of the site profile,  
10          we attempted to capture data at a number of  
11          sources. We had a formal -- formal request to  
12          the current operator, Nuclear Fuel Services;  
13          the State of Tennessee Division of Radiological  
14          Health; the Nuclear Regulatory Commission, we  
15          reviewed records there; we -- we data captures  
16          at DOE Germantown, National Archives; we  
17          performed worker outreach and interviews. And  
18          the worker outreach -- well, especially the  
19          interviews, continued through the SEC  
20          evaluation process.

21          From these -- from these data captures and  
22          reviews, through the site profile development,  
23          and through the SEC evaluation, we determined  
24          internal monitoring data. We have uranium  
25          bioassay data starting in 1964. We have AEC

1 reports in 1959 and 1961 containing detailed  
2 air monitoring. We have urine bioassay data  
3 for plutonium for the entire years of plutonium  
4 operations, which -- from the AEC period -- was  
5 roughly 1964 to 1970.

6 We have no thorium bioassay monitoring data  
7 during the class period. There is thorium  
8 bioassay monitoring data actually in 1980s, but  
9 -- but that is after the actual AEC -- or the  
10 covered period up to 1970.

11 We have one single air sample, and it was  
12 actually from a health and safety bulletin.  
13 The '59 and '61 reports that I'd identified  
14 earlier, air sample reports, are strictly from  
15 the high-enriched U and the low-enriched U  
16 operations. We have one thorium air sample  
17 that's identified, a 50 percent MAC in a scrap  
18 recovery building. That's how we determined  
19 clearly that there was thorium op-- operations  
20 in the scrap recovery.

21 External monitoring data. We have external  
22 monitoring data from beginning of AEC  
23 operations all the way through the covered  
24 period. We have -- also have dosi-- we have  
25 extremity dos-- extremity dosimetry for the

1 operational period.

2 There is no neutron monitoring data for the

3 covered period -- and I will address that.

4 All right, a little overview of the petition.

5 From our reviews and our look -- our searches

6 for data, we determined that dose

7 reconstruction was not feasible for an existing

8 claim. On January 16th, 2007 a claimant was

9 notified that dose reconstruction could not be

10 completed, and was provided with a copy of the

11 Special Exposure Cohort Form A. The petition

12 was submitted to NIOSH on January 22nd, 2007.

13 Our conclusions were NIOSH lacks monitoring,

14 process or source information sufficient to

15 estimate the internal radiation doses from

16 thorium exposures to W. R. Grace employees for

17 the period of January 1, 1958 through December

18 31, 1970 -- which is the entire covered period.

19 NIOSH believes it has sufficient information to

20 estimate the internal dose from uranium and

21 plutonium, and occupational external exposures,

22 including medical exposures, for that period.

23 We believe that we can reconstruct the external

24 -- the neutron by using a neutron-to-photon

25 ratio for the -- for the material. We actually

1           have a draft site profile that will -- that  
2           will use that -- that method.  
3           Again, I'd already mentioned that we have ex--  
4           the other external monitoring data to support  
5           the rest of the external exposure. The  
6           internal exposure, we have the uranium  
7           bioassay, as mentioned, as well as we have  
8           developed a -- an intake using the air sample  
9           data to cover the early years of uranium  
10          operations. And the plutonium operations, as  
11          mentioned, we have plutonium bioassay through  
12          the covered period to cover that.  
13          Our conclusion, NIOSH determined that it is not  
14          feasible to estimate the -- with sufficient  
15          accuracy internal radiation doses, and the  
16          health of the covered employees may have been  
17          endangered.  
18          The evidence indicates that workers in the  
19          class may have accumulated intakes of thorium  
20          during the covered period.  
21          Our -- our proposed class definition is all  
22          Atomic Weapons Employees who were monitored, or  
23          should have been monitored, for potential  
24          exposures to thorium while working in any of  
25          the 100 series buildings or buildings 220, 230,

1           233, 234, 301 or 310 at W. R. Grace site at  
2           Erwin, Tennessee for a number of workdays  
3           aggregating at least 250 days from January 1,  
4           1958 through December 31, 1970, or in  
5           combination with workdays within the parameters  
6           established for one or more other class of  
7           employees in the SEC.

8           We made our determination of the buildings  
9           through interviews and document reviews -- the  
10          affected buildings for this class. What we had  
11          -- we know from documentation that we do have  
12          that the thorium operations from -- thorium  
13          production operations were conducted in the  
14          same building as the uranium operations. We  
15          also in-- interviewed a health and safety  
16          manager working in the period that indicated  
17          that all 100 series buildings should be assumed  
18          to have stored or produced or activities  
19          occurred with uranium and thorium in those  
20          buildings. Therefore, we included all 100  
21          series buildings in our class definition.  
22          Building 220, 230 and 233 were included based  
23          on a 1962 health and safety bulletin. I  
24          mentioned that bulletin earlier. That bulletin  
25          contained the air sample -- the thorium air

1 sample, and it was identified for building 233,  
2 which is scrap recovery. We noted that 220 and  
3 230 -- 220 and 230 were added because those  
4 buildings are adjacent -- are under the same  
5 roof at 233, and are associated with the same  
6 operations, so we included those buildings.  
7 Building 234 was included because of the U-233  
8 operations. As I'd mentioned earlier, the  
9 mixed oxide fuels that were produced, one of  
10 them was with U-233 and with thorium.

11 Conclusion, our recommendation for the period  
12 January 1, 1958 through December 31, 1970,  
13 NIOSH finds the radiation dose estimates cannot  
14 be reconstructed for compensation purposes, and  
15 feasibility's no; health endangerment, yes.

16 **DR. ZIEMER:** Thank you, LaVon. Let's open the  
17 floor for questions or comments. Gen Roessler.

18 **DR. ROESSLER:** On your -- on your definition of  
19 the class, does that -- if you could put that  
20 slide back up again --

21 **MR. RUTHERFORD:** Yes.

22 **DR. ROESSLER:** -- you talk about all workers  
23 who were monitored, or should have been  
24 monitored, for thorium, and then list a bunch  
25 of buildings. So does that include all of the



1 workers in those buildings, or only the ones  
2 who had the potential for being exposed to  
3 thorium?

4 **MR. RUTHERFORD:** That would be all workers in  
5 those buildings.

6 **DR. ROESSLER:** Then I -- I don't know that your  
7 wording is quite right, but I guess Legal would  
8 know better, or somebody who's better at --  
9 because it sounds to me that it's similar to  
10 the other one we discussed before, that here  
11 you're only looking at those who had the  
12 potential for being exposed to thorium.

13 **MR. RUTHERFORD:** Well, I can --

14 **DR. ZIEMER:** And the chart turns out to be a  
15 different. I -- and maybe this is just  
16 internal discrepancy, but the last chart we  
17 looked at showed what could be reconstructed --

18 **MR. RUTHERFORD:** Right.

19 **DR. ZIEMER:** -- 'cause we need that  
20 information, I think, if we proceed on this --  
21 for the partials --

22 **MR. RUTHERFORD:** Right.

23 **DR. ZIEMER:** -- although what you're saying is  
24 it still covers everybody --

25 **MR. RUTHERFORD:** Yes.

1           **DR. ZIEMER:** -- because anyone --

2           **MR. RUTHERFORD:** Yes.

3           **DR. ZIEMER:** -- in there had potential for the  
4           thorium.

5           **MR. RUTHERFORD:** Yes.

6           **DR. ZIEMER:** And I think that's Gen's question,  
7           so would you then say it would be analogous  
8           with Los Alamos, anyone who was monitored, or  
9           should have been monitored, for radiation  
10          exposure -- or do you ex-- do you see the --  
11          the point we made? I --

12          **MR. RUTHERFORD:** Yes, I understand what you're  
13          saying.

14          **DR. ZIEMER:** -- maybe ask even NIOSH. We seem  
15          to have the same situation, but it's couched  
16          somewhat differently. We understand what  
17          you're saying.

18          **MR. RUTHERFORD:** Right.

19          **DR. ZIEMER:** I think I'm just looking for sort  
20          of parallel structure here. Also I -- I'm not  
21          sure you said anything about medical -- did  
22          these people have medical --

23          **MR. RUTHERFORD:** Yes, they -- and then -- and  
24          we --

25          **DR. ZIEMER:** And medical could be

1 reconstructed.

2 **MR. RUTHERFORD:** -- we can reconstruct -- yes.

3 **DR. ZIEMER:** Okay.

4 **MR. RUTHERFORD:** All external exposures can be  
5 reconstructed.

6 **DR. ZIEMER:** So I guess if -- if this -- if we  
7 act positively on this, we may want some  
8 clarity -- clarity on the wording here. Wanda?

9 **MS. MUNN:** But is there any pressing reason why  
10 we can't use phraseology that clarifies it in  
11 this -- have we established such a template of  
12 language that we can't stray from what we've  
13 done in the past?

14 **DR. ZIEMER:** No, I think Dr. Roessler's  
15 question is why are we just using the thorium  
16 here when, in the similar situation for --

17 **MR. RUTHERFORD:** Well, I think if you look at -  
18 - at especially Los Alamos, there are things we  
19 can do and can't do over different periods of  
20 time, and structuring that class definition was  
21 -- in fact, believe me, we -- we looked at that  
22 at first and it was impossible. And so we  
23 recognized that the overlaps were -- and in  
24 this situation, we know thorium is our -- our  
25 issue. All right? Now --

1           **DR. ZIEMER:** So thorium will cover it, so  
2           that's -- that's --

3           **MR. RUTHERFORD:** Right, and -- and the  
4           Department of Labor -- you know, I guess -- you  
5           know, I don't -- I don't want to speak for the  
6           Department of Labor, but you know, I think that  
7           we've -- we have passed this definition on to  
8           them and I -- I think they felt they could  
9           implement it.

10          **DR. ZIEMER:** Okay. Well, I think he's saying  
11          it will -- it will take care of it, so that's  
12          fine.

13          If there are no questions or comments, the  
14          floor is open for a motion.

15          **MS. MUNN:** Yes, I move that we recommend to the  
16          Secretary that he accept the proposed class  
17          definition for the Atomic Weapons Employees at  
18          W. R. Grace as stated in the presentation to us  
19          today.

20          **MR. PRESLEY:** Second.

21          **DR. ZIEMER:** And seconded? Again, if the  
22          motion passes -- we have a second here. If the  
23          motion passes, we will ask for the refined  
24          official wording for our consideration  
25          tomorrow.

1           Comments first.

2           **MR. GRIFFON:** Just a -- a clarification on the  
3           -- just, again, looking in terms of consistency  
4           here, but --

5           **MR. RUTHERFORD:** Sure.

6           **MR. GRIFFON:** -- the question on the thorium  
7           use, to what -- what were the thorium  
8           operations --

9           **MR. RUTHERFORD:** Okay --

10          **MR. GRIFFON:** -- to what extent -- how do you  
11          know it -- I mean in --

12          **MR. RUTHERFORD:** Yeah. In fact -- and I'll go  
13          into a little detail. When we first developed  
14          this site -- when we developed the site  
15          profile, we looked at the uranium -- if we  
16          could take the uranium metal production or  
17          operations and actually use the data from that  
18          operation and develop a ratio to bound the  
19          thorium. The problem with that was we could  
20          not verify -- we had no -- we had no real  
21          process information on the thorium that we  
22          could verify that the production equipment and  
23          the -- the sizes of the equipment were similar  
24          or that they used the same equipment. And the  
25          only thing we did know, we knew that the

1           furnaces were definitely different because we  
2           had one report that identifies a furnace as a  
3           thorium furnace, and then other furnaces  
4           separate. So we had a pretty good indication  
5           the thorium furnaces were separate, and we also  
6           knew that, because of the chemical processes  
7           involved, that there would definitely be other  
8           equipment that wouldn't be associated. As well  
9           as we also were looking at the issues of the  
10          energy imparted in the process through  
11          temperature and reactions, can we be for sure  
12          that those reactions and the temperatures and  
13          so on, that they wouldn't be higher and  
14          subsequently increase the mass release from --  
15          from -- from a given component. In addition,  
16          we had no indication of batch sizes that were  
17          used for the thorium. So -- so we looked at  
18          that -- all -- all of that was one big problem.  
19          Then the other problem we had was that we had  
20          the mixed oxide fuel that we were looking at,  
21          which was -- one was the  
22          uranium/thorium/zirconium mixed oxide fuel had  
23          99 percent thorium to -- with it. We had very  
24          -- we actually have some air data, not from the  
25          W. R. Grace site but for another site that was

1 producing the same thing, but very little of  
2 that, you know, to actually use to develop a  
3 ratio to -- to possibly bound that. In  
4 addition, I mentioned the uranium scrap  
5 recovery operations. We had the air sample  
6 that we knew that they were -- they were  
7 actually -- that there was thorium involved in  
8 that uranium scrap recovery, and we had that  
9 one air sample, and we have absolutely no  
10 uranium data for that -- that little operation,  
11 so...

12 **MR. GRIFFON:** And -- and you -- you mentioned  
13 thorium urinalysis samples but not till in the  
14 '80s.

15 **MR. RUTHERFORD:** In the '80s.

16 **MR. GRIFFON:** So were -- were those --

17 **MR. RUTHERFORD:** They were not associated with  
18 the same operations.

19 **MR. GRIFFON:** They weren't associated with the  
20 --

21 **MR. RUTHERFORD:** No, not at all.

22 **MR. GRIFFON:** Okay. That was the question.

23 **DR. ZIEMER:** Wanda, do you have additional  
24 comment?

25 **MS. MUNN:** A question. How si-- how large is





1 And any opposed?

2 (No responses)

3 Any abstentions?

4 (No responses)

5 Motion carries.

6 **DR. WADE:** The vote was unanimous.

7 **DR. ZIEMER:** Tomorrow we are going to look at  
8 the -- as was indicated, we'll -- we'll pick up  
9 Chapman Valve at -- well, we'll pick up Dow  
10 first, and then Chapman. And I think we'll be  
11 able to cover our other materials efficiently.  
12 We're shooting toward, if we can, a noon  
13 completion -- at least the Chair is. We'll see  
14 how it goes.

15 **DR. WADE:** We might forsake global science  
16 issues. We will not forsake the use of data  
17 from other sites.

18 **DR. ZIEMER:** Now, we -- we reconvene back here  
19 this evening at 7:30, so we need a supper break  
20 here -- give you time to get something to eat  
21 and come back. We have a number of people that  
22 have signed up for comment this evening. I  
23 don't know how many there will be, but we do  
24 have some who have signed up. So we'll see you  
25 at 7:30.

1           **PUBLIC COMMENT**

2           **DR. ZIEMER:** Good evening, everyone. We're  
3 going to go ahead and start the public comment  
4 session of the Advisory Board on Radiation and  
5 Worker Health. I have a list of individuals  
6 that have indicated they wished to speak to the  
7 assembly this evening and we'll just take the  
8 list in the order given.

9 I do want to -- many of you were here last  
10 night, and I will repeat a couple of things in  
11 case you weren't here, and that is that this  
12 Board is an advisory board. We're not a board  
13 that makes the final decisions on anything.  
14 That's sometimes good and sometimes bad.  
15 Sometimes we wish we could, but the fact of the  
16 matter is we simply give advice. We're -- we  
17 do not adjudicate the cases. We evaluate the  
18 program, really is what it amounts to. That is  
19 the dose reconstruction program.

20 We do have a -- we do have a responsibility to  
21 provide an opinion on Special Exposure Cohort  
22 petitions. We have -- before the Board at this  
23 meeting there are five petitions that are being  
24 examined, one of which is Rocky Flats. And as  
25 many of you know, we had an extensive

1 discussion, a public comment on that last  
2 night. The Board had that action before it  
3 earlier today. And if you weren't here for  
4 that, you may not know that the Board  
5 recommended approval of a portion of the time  
6 frame for the Rocky Flats for the neutron  
7 workers. There are some other portions of that  
8 petition that will be finalized in -- at our  
9 next meeting, next month, which we hope will be  
10 back here so that those of you from Rocky Flats  
11 can be present.

12 There are several folks -- well, I -- I also  
13 want to mention, because it's sometimes  
14 confusing for folks, and that is that the folks  
15 you see here -- we do not work for NIOSH or for  
16 Department of Labor. We are just an  
17 independent board. I often introduce the  
18 individuals. A number of these, like -- like  
19 me, I'm a retired educator, and we have a mix  
20 of people on this Board, some of whom are  
21 retired, some of whom are still working; some  
22 of whom have technical backgrounds, some who  
23 are in the medical field, some who are  
24 individuals who are union workers. So we have  
25 a cross-section of folks here on this Board.

1 We are not part of NIOSH. We are not part of  
2 Department of Labor. So we're -- our job is to  
3 give kind of an independent look at things.  
4 We have to struggle, as it were, with a lot of  
5 viewpoints -- the viewpoints of the  
6 petitioners, the viewpoints of the agencies,  
7 and we even have our own contractor that we  
8 hire to help us evaluate the various issues.  
9 So it -- it's a job that this Board does, not  
10 only here at the Rocky Flats, but dealing with  
11 sites all over the country.  
12 We will be hearing from individuals from some  
13 of those -- representing some of those other  
14 sites in fact tonight, but I notice here there  
15 are still a few Rocky Flats folks and I'll just  
16 take them in the order that they are. We have  
17 imposed now a ten-minute time limit on people.  
18 That's something new, but in order to provide  
19 time for everyone to -- to give their remarks,  
20 we ask you to -- to stick with the ten-minute  
21 time limit. Also, as I mentioned last night,  
22 the ten-minute is not a goal to be achieved but  
23 is an upper limit. So if your remarks are less  
24 than that, that's quite fine.  
25 Jack Weaver, who identifies himself as a

1           retired Rocky Flats worker. Jack? Is Jack  
2           here?

3           **DR. WADE:** Jack has left.

4           **DR. ZIEMER:** Signed up earlier today but  
5           perhaps couldn't make it.  
6           Cliff DelForge? That's Cliff, you've got the  
7           first mike here.

8           **MR. DELFORGE:** My name is Cliff DelForge --  
9           Clifford DelForge. I worked at Rocky Flats for  
10          35 years, primarily in the areas of  
11          radiological safety. I'm not here on my behalf  
12          'cause I'm not sick. I -- primarily involved  
13          in here because of my [Identifying Information  
14          Redacted]. He worked at Rocky Flats for 24  
15          years and he is ill, and he is -- his illness  
16          was -- I think I was able to prove pretty  
17          significantly that it was caused at Rocky Flats  
18          -- by his work at Rocky Flats.  
19          I'm not here to talk about [Name Redacted]  
20          either. I'm just going to make some general  
21          comments, if I may.  
22          You've heard a lot of testimony from people.  
23          Some of it -- a fair amount of it was not  
24          probably technically appropriate for dose  
25          reconstruction, but all of it was morally,

1           ethically and emotionally valid for the SEC.  
2           I think we've kind of missed the boat on some  
3           of this stuff.  Otherwi-- some of the people  
4           who got up here and talked were talking about  
5           specific instances where they were showing  
6           that, because of the work that they were doing  
7           and the places that they were, that they should  
8           have had a -- some dose on their dosimeters,  
9           should have had some dose, and that in most  
10          cases it came back either as a zero dose or as  
11          no current data available.  
12          I got -- that got me thinking about my own  
13          personal situation, and there are a couple of  
14          things that I'll discuss here shortly on my own  
15          personal experience regarding the validity of  
16          our dosimetry program.  And that's fairly  
17          important 'cause you're talking about making a  
18          recommendation on whether or not to approve  
19          Rocky Flats for the SEC status.  
20          The last time I went out to the Rocky Flats  
21          plant -- I retired in 1995, and the last time I  
22          actually went out to the plant proper was as  
23          part of one of the many programs that I was  
24          involved with -- the uranium study, the  
25          plutonium study, the americi-- I mean the

1           beryllium study and the chemical study. And  
2           while I was out there I was talking to a  
3           gentleman and he was explaining to me that they  
4           had just started a new program where they were  
5           bringing back the film badges from the Denver  
6           Tech Center and they were going to reread these  
7           badges and then they were going to compare that  
8           data with the data that they had on the  
9           existing documentation. And the very first  
10          batch of badges they brought back, one  
11          gentleman, they reread his badge; his  
12          documentation showed zero, his bad (sic) was  
13          reading 1,000 millirem. They were off by a  
14          factor of 1,000 on that one individual.  
15          I don't know how far they went with this. I --  
16          I would be willing to bet that they did not  
17          read every badge and bring every badge back,  
18          'cause they're talking about a lot of badges  
19          over many, many years. But that one instance  
20          should have indicated at least that they should  
21          have probably done that.  
22          The reason that -- if I understand it  
23          correctly, the reason that there were so many  
24          no current data available on the documentation  
25          was because they didn't read the badges. They

1           didn't have the time. It was just physically  
2           impossible to read all the badges, so they just  
3           put down no current data available.

4           I'm personally aware of three unauthorized  
5           experiments that were done to determine the  
6           validity of our dosimetry program. Now  
7           americium salts are the highest level of  
8           radiation that I've ever seen at Rocky Flats,  
9           and that was my job as a radiation monitor when  
10          I first got into radiological safety. I had a  
11          reading off of a fiber pack of the beryllium  
12          salts that read 22,000 millirem, which is  
13          extremely high, especially for Rocky Flats. A  
14          gentleman was -- I don't know if he was coerced  
15          into it or anything, but he -- several -- a  
16          couple of the RCTs or the radiation monitors  
17          said we ought to test this program, so they had  
18          him put his badge in a can of americium salts  
19          for 30 minutes. I don't know what the reading  
20          on that particular can was, but it had to be  
21          fairly high and there had to be some exposure  
22          to that badge. And his results came back zero.  
23          Another guy -- a different period of time --  
24          put his badge in a glove on the americium line,  
25          which was the highest gamma radiation line at



1           the -- in 771 building, and he left it in there  
2           for the majority of his shift and he sent it  
3           in, and there had to be significant radiation  
4           exposure to that badge. It came back zero.  
5           I personally -- I was assigned to a special  
6           project as a radiation monitor. We had to have  
7           special badges because the material we were  
8           working with had a very robust gamma associated  
9           with it. I must have been in a union frame of  
10          mind at the time because I decided I was going  
11          to do my own test. All the other people who  
12          had the special badges wore their badges on the  
13          inside of their lead aprons and they were  
14          required to wear lead aprons the entire time  
15          they worked with the material. I set my badge  
16          on the outside, looking for some -- there had  
17          to be some difference between my badge and  
18          everybody else's -- and it came back zero.  
19          There was no difference.  
20          In my son's case, doing some investigation, I  
21          found two instances where they'd found a small  
22          amount of -- of exposure on a badge on two of  
23          his different badge, and they said well, you  
24          know, this -- this can't be real. It's not --  
25          it's bogus, so we're just going to knock

1 everything back to zero.

2 I firmly believe that their standard operating  
3 procedure was whenever there was any kind of an  
4 anomaly with their program, if they had a high  
5 reading here or something like that, they  
6 simply said well, this can't be right, it can't  
7 be true so we'll just forget it and knock it  
8 down to zero. I mean if they were doing  
9 anything else, they would have come and  
10 investigated. And in my case if there was -- I  
11 had a high exposure on my badge, somebody  
12 should have come down and said, you know,  
13 what's -- what's the problem here, at which  
14 case I probably would have been in a little bit  
15 of trouble because I did this in an  
16 unauthorized manner.

17 I think -- and I think we missed the boat  
18 because, with the people that talked about  
19 their specific situations and my own  
20 experiences, we should have gotten together  
21 with all the people that -- from Rocky Flats,  
22 all the people work in the back areas, and sat  
23 down and interviewed them and said what  
24 personal experiences do you have that would  
25 show that the documentation of the dosimetry

1 program was not up to snuff, it wasn't doing  
2 what it was designed to do. I think we could  
3 have provided you with a very large document.  
4 I think everybody -- 'cause everybody that I  
5 talk to just casually said yeah, yeah, I know  
6 this situation. This happened in my case, and  
7 everything else.

8 It's kind of disheartening to sit and listen to  
9 Mark say, you know, that he -- he's perfectly  
10 comfortable that there was no credible  
11 evidence, I guess, to -- that there was any  
12 problems with the dosimetry program. I don't  
13 believe that. I believe that there were some  
14 problems with it. I think that the -- with the  
15 numbers of no current data available, I don't  
16 know how you can possibly extrapolate -- and  
17 that's another thing.

18 If you're talking about well, we're going to  
19 extrapolate here, we're going to calculate  
20 here, we're going to -- you know, you -- just  
21 making up numbers, is all you're going to do is  
22 make up numbers, and I don't think you can do  
23 it accurately. I don't think there's enough  
24 information that you really need to have to do  
25 that.

1           The -- you can't use situations with other  
2           plants with regard to Rocky Flats. We had --  
3           we had unique materials, we had unique  
4           mixtures, we had unique processes. You can't  
5           say well, what happened over here -- we're  
6           going to say well, we can say that the same  
7           thing happened over here.

8           You can't use common denominators. You look at  
9           people as individuals, and you don't know if a  
10          person got a exposure in a -- in an hour, or in  
11          a week or in a month if his badge was on a  
12          monthly basis and he got a total over that  
13          period of time, or if he was in a back area one  
14          hour and got that -- that exposure. You don't  
15          have that kind of information to know who was  
16          working what lines and how long they were there  
17          and anything else. There's just so much  
18          information out there that's -- that you need  
19          to have in order to do a valid thing -- at  
20          least in my opinion.

21          It's kind of funny, it's -- it's almost like  
22          this program, this compensation program, was  
23          like a fresh zebra kill. And the top predator,  
24          the Department of Energy, got in there ripping  
25          off huge chunks of flesh, to the tune of \$90

1 million in paperwork that went in their  
2 pockets. And isn't it amazing that the two  
3 people that were involved in that program  
4 resigned shortly after that came to light --  
5 not because of that. No, it didn't have  
6 anything to do with that. They were going to  
7 retire anyhow. And -- and now the vultures and  
8 the jackals are picking at the -- the bones of  
9 this thing. And they've apparently done a  
10 pretty good job, at least on one leg of the  
11 beast.

12 I saw this article in the paper today, *Rocky*  
13 *Mountain News*, and it says here that the  
14 government is about to run out of money to  
15 complete dose reconstruction. They're about to  
16 run out of money. So the vultures have picked  
17 that leg clean, pretty close to it.

18 And now I ask you, what are we going to do now?  
19 Are we going to -- when it runs out of money  
20 are we just going to say well, we're just going  
21 to put it on hold until we get some more money  
22 and start doing our job again? I got a good  
23 idea. Maybe what we can do is do a kind of a  
24 pool and see how many more Rocky Flats  
25 employees are going to die in the interim.

1 We need to have some processes done -- we need  
2 them done now. We need to have -- I think the  
3 things that you've heard -- what they do to me.  
4 Obviously I have an agenda of my own. I've got  
5 a son who's ill. I've got friends who are ill.  
6 I would ask you right now -- I would ask that  
7 you all unanimously recommend to whoever is in  
8 charge that any further dose reconstruction  
9 should be discontinued immediately. It's a  
10 waste of time and a waste of money. And I'd  
11 also recommend that you unanimously recommend  
12 that Rocky Flats be given the SEC status. I  
13 don't ask you to do this because you feel  
14 compassion for the people who are ill. I don't  
15 ask you to do this because you may be angry at  
16 some of the way that some of the people were  
17 treated. I ask you to do this because it's  
18 scientifically appropriate to do it. Thank  
19 you.

20 **DR. ZIEMER:** Thank you, Cliff. Then [Name  
21 Redacted] -- is [Name Redacted] with us?

22 (No response)

23 Okay, we'll come back and check. [Name  
24 Redacted] I think is the last name. I'm trying  
25 to read the first name. Is there a [Name

1 Redacted] here? Rocky Flats retired person --  
2 [Name Redacted]?

3 **UNIDENTIFIED:** (From the audience and off  
4 microphone) What was it? I can't hear you very  
5 well. The sound system is very muffled.

6 **DR. ZIEMER:** [Name Redacted] is --

7 **UNIDENTIFIED:** No, I'm sorry.

8 **DR. ZIEMER:** Not [Name Redacted]? Okay. Next  
9 is Dr. Dan McKeel, and I believe Dr. McKeel's  
10 representing the Dow Madison petition.

11 **DR. MCKEEL:** Good evening, Dr. Ziemer and the  
12 Board. Actually tonight I want to talk about  
13 our other site, General Steel. I do have --

14 **DR. ZIEMER:** I think tomorrow you'll have an  
15 opportunity then I believe as the petitioner to  
16 --

17 **DR. MCKEEL:** Yes.

18 **DR. ZIEMER:** -- talk about the Dow site, yes.

19 **DR. MCKEEL:** Dr. Ziemer was kind enough to  
20 allow me -- I had a rather complex comment  
21 tonight, so I made that in writing, appropriate  
22 to what the Board has just decided, and I'll  
23 try to keep this short for you. The remarks I  
24 want to make tonight are for my colleague,  
25 [name redacted], who you all know. And I have

1            basically two brief remarks.

2            The first one is about the Battelle task order

3            16 contract, and as you heard yesterday, Larry

4            Elliott announced that due to fund shortages at

5            NIOSH, this contract would soon be terminating,

6            at the end of this month, with no further work

7            done and all monies spent. This is an

8            important contract to us because both the Dow

9            site and the General -- General Steel

10            Industries sites are under this contract.

11            As you know, the original contract was to have

12            been for 12 months and was to have ended last

13            October, and has been extended. There were, as

14            far as I'm aware, three dose reconstruction

15            guidance documents that have been produced,

16            TIBs 5000, 6000, 6001. I heard Larry yesterday

17            say that there were 16 site-specific appendices

18            to cover the 256 sites that were charged to

19            Battelle to review. General Steel is

20            apparently one of those 16 appendices. We

21            don't know when that appendix will materialize,

22            although I was very encouraged to see that the

23            first four appendices were posted on the -- on

24            the OCAS web site today.

25            Mr. Elliott also told us -- told our group that



1 Dow, which is another site, will not have a  
2 site-specific appendix and Dow also has no site  
3 profile. The original intent, and the reason  
4 I'm bringing this up tonight, was to generate  
5 appendices for all 256 sites. And I derived  
6 that idea because the OCAS web site right now  
7 says the following about Battelle TIB-6000.  
8 Quote, Following the main body of this document  
9 is a collection of appendices, with one  
10 appendix for each AWE site that performed  
11 metal-working operations, and the TIB is about  
12 uranium and thorium -- end quote.  
13 Only 308 of the more than 1,400 claims, or  
14 about 22 percent of the total, have been  
15 completed dose reconstructions at Battelle. An  
16 unstated number of 83.14 SECs may be  
17 forthcoming, and added work remains for other  
18 branches of NIOSH to complete undone tasks.  
19 My comment is that this doesn't really seem  
20 like very satisfactory overall performance on  
21 this contract, given the significant time  
22 extension. And the comment for the whole  
23 EEOICPA program is that in a time like this of  
24 constrained funding for NIOSH operations is --  
25 was the Battelle task order -- was it a wise

1 investment, considering basically the low  
2 overall productivity on all the major goals.  
3 The second comment tonight is -- in a -- in a  
4 way I apologize, but I came to you tonight,  
5 again, about the General -- I mean the Granite  
6 City Steel naming issue because, although we  
7 have brought that up repeatedly to the Board,  
8 that problem still persists today, and I want  
9 to give you a -- a very practical reason why  
10 it's important.

11 [name redacted] and I have jointly written in  
12 our written comments a detailed recounting of  
13 two claims, and both of those together show the  
14 Department of Energy, Department of Labor and  
15 NIOSH have really not dealt adequately with  
16 this Granite City Steel naming error and the  
17 description of the facility at DOE.

18 Claim number one [Identifying Information  
19 Redacted] filed EEOICPA claims in 2004. He  
20 went through the entire dose reconstruction  
21 process, was assigned a probability of  
22 causation of 36.23 percent, and then he was  
23 denied in April of 2005.

24 The problem is that Granite City Steel did no  
25 AEC uranium work, and was a different site at a

1 different location from Gra-- General Steel  
2 Industries, which was the real covered site.  
3 GSI did perform Betatron non-destructive  
4 testing on Mallinckrodt uranium ingots from  
5 1953 to 1966. In contrast, Granite City Steel  
6 didn't have any Betatrons.  
7 We had obtained the redacted version of this  
8 claim from NIOSH by the FOIA process, and we  
9 got that because this was one of the four dose  
10 reconstructions that have been performed for  
11 Granite City Steel -- or correctly named,  
12 General Steel Industries.  
13 We then located the worker's children, one of  
14 whom verified that it -- one of her -- that her  
15 claim was one of the ones that was dose  
16 reconstructed. She verified her father always  
17 [Identifying Information Redacted] from Granite  
18 City Steel, always [Identifying Information  
19 Redacted] work, and never set foot at GSI, even  
20 after Granite City Steel bought the GSI grounds  
21 and property in 1974.  
22 Well, we were interested in that because, as I  
23 say, there've been a very low production of  
24 completed dose reconstructions. [name  
25 redacted] and I believe in fact that probably

1 all four DRs that have been attributed to  
2 General Steel Industries may have actually been  
3 done on Granite City Steel workers in error.  
4 In our written comment we provide indisputable  
5 documentation that the original facility  
6 misidentification occurred at the Department of  
7 Energy, and went unrecognized by Labor and  
8 NIOSH during the dose reconstruction process,  
9 including assignment of a POC of 36.23 percent.  
10 The second claim highlighted in our written  
11 comment is that of an authentic [Identifying  
12 Information Redacted] GSI employee who was a  
13 [Identifying Information Redacted]. He was told  
14 by a Department of Labor supervisor and by  
15 Social Security that he really worked at  
16 National Roll Company in Pennsylvania, and that  
17 GSI was not a covered site. It took multiple  
18 calls and a FAXed newspaper story to convince  
19 Labor that claimant number two worked at GSI,  
20 that GSI was a real covered site, and that his  
21 claim would be processed. And -- and that was  
22 effective, but he still awaits his dose  
23 reconstruction, along with 208 other people  
24 with claims at NIOSH from General Steel  
25 Industries.

1           In light of these two claims that I think are  
2           well documented, we therefore are requesting  
3           that the Department of Labor re-examine all of  
4           the 305 denied Granite City Steel and GSI  
5           claims with respect to the site employment  
6           issue. After this meeting is over we will work  
7           with the Illinois Congressional delegation to  
8           request a remedy in a formal way. Therefore,  
9           we will assist the agencies with the -- this  
10          effort if -- if they ask us to do so.  
11          We think that several hundreds of claimants  
12          could have been affected. There are now 819  
13          Part B and E ostensible GSI claims, and 546  
14          ostensible GSI cases. We need to know for sure  
15          how many claims were denied (a), from people  
16          who never worked at GSI, and (b), from workers  
17          who worked at GSI but were denied in the early  
18          years because both Department of Labor and  
19          Energy misconstrued the name and location of  
20          GSI as the authentic covered facility, thinking  
21          it was Granite City Steel.  
22          The DOE facilities list database and the DOL  
23          statistics by state web sites have only been  
24          partly corrected in this regard.  
25          And -- and the final comment is that [name

1 redacted]and I at least hope one day that the  
2 children claimants of claim number one worker  
3 will get an apology, and I think it needs to be  
4 a special apology from all three of those  
5 agencies. Thank you very much.

6 **DR. ZIEMER:** Thank you, Dan. And I have the --  
7 the more extensive copy. I think we can get  
8 this onto the web site perhaps and I'll ask the  
9 -- NIOSH to do that.

10 **DR. MCKEEL:** (Off microphone) (Unintelligible)

11 **DR. ZIEMER:** Also, Dan, I believe you have been  
12 in contact with Pete Turic (sic), have you,  
13 from Labor? I --

14 **DR. WADE:** Turcic.

15 **DR. ZIEMER:** -- or Turcic. We want to make  
16 sure that you're not relying on our --

17 **DR. MCKEEL:** No, sir.

18 **DR. ZIEMER:** -- our --

19 **DR. MCKEEL:** Right, that's what I meant to say.  
20 I --

21 **DR. ZIEMER:** -- proceedings to see that this  
22 gets --

23 **DR. MCKEEL:** -- obviously this has to be taken  
24 up with all three --

25 **DR. ZIEMER:** Yeah.



1           **MR. BEITSCHER:** The sound is very --

2           **DR. ZIEMER:** -- whatev-- whatever you prefer.

3           **MR. BEITSCHER:** It may be my ears. The sound  
4 is very muffled.

5           **DR. ZIEMER:** Okay, you can try that one, if you  
6 prefer.

7           **MR. BEITSCHER:** My name is Stan Beitscher. I  
8 worked at Rocky Flats from 1963 to 1993. I  
9 came there when I was 30 years old. I left  
10 when I was 60 years old, with a number of  
11 medical conditions. I look very healthy from  
12 the outside, but I have a number of situations  
13 internally that are not apparent. But my first  
14 comments have to do with the special cohort  
15 program, and I'd like to add to Mr. DelForge's  
16 comments from a slightly different perspective.  
17 Let me tell you what my background is. I was a  
18 research scientist at Rocky Flats in the area  
19 of metallurgical engineering. I graduated from  
20 the Colorado School of Mines with a degree in  
21 metallurgical engineering, with a minor in  
22 minerals beneficiation. I went to Rensselaer  
23 Polytechnic Institute and received a master's  
24 degree in metallurgical engineering with a  
25 minor in nuclear engineering. I then went back



1           to the Colorado School of Mines, received a PhD  
2           in metallurgical engineering with a minor in  
3           physics.

4           So I can't really claim that I did not know  
5           that radiation and toxic material exposure is  
6           dangerous. I was very well schooled in these  
7           areas. I'm not a world expert in these areas,  
8           but I have read thousands upon thousands of  
9           pages concerning the effects of radiation and  
10          toxic material exposure in my lifetime. I've  
11          written hundreds of research papers dealing  
12          with material science.

13          And I can tell you, first of all, that the  
14          emphasis at Rocky Flats was production first;  
15          safety, yes, but came second. Nothing would  
16          take -- would stand in the way of meeting  
17          production schedules. And although there was  
18          concern for safety, safety was second.

19          Furthermore, the implication that working --  
20          for working at Rocky Flats was that largely  
21          radiation effects on biological systems is  
22          largely unknown. This is a very crude science.  
23          In 1963 very little was known about the limits  
24          of -- of dangerous exposure, not only to  
25          radiation but to the host of other extremely

1 dangerous materials that were handled at Rocky  
2 Flats. The list is staggering and almost  
3 amazing. Every -- virtually every toxic,  
4 dangerous material was at one time or another  
5 present in my work area in my -- in the  
6 research building of Building 79 where I spent  
7 about 28 of the 30 years. The other year and a  
8 half was spent in Building 771, which is  
9 acknowledged as the most dangerous building in  
10 the United States.

11 So to limit compensation based on perhaps the  
12 absence of some information or some material is  
13 preposterous. The radiation was widespread and  
14 the exposure to other toxic material was  
15 extremely widespread at Rocky Flats.

16 Furthermore, you cannot predict biological  
17 effects based purely on some sort of  
18 reconstructed dosage effects. Large amounts of  
19 radiation can-- cannot -- and in some cases,  
20 not cause biological effects. Small amounts of  
21 radiation in other species can cause enormous  
22 effects. And to limit -- to limit compensation  
23 for horrible conditions for some imaginary  
24 limit of -- of exposure is preposterous. And I  
25 stand behind what Mr. DelForge said.

1 First of all, I'd like to add just one other  
2 comment on that. Dosimetry, and that's a  
3 subject that I followed very closely in my  
4 career because I was subject to dosimetry. I  
5 worked in a hot area. I worked in a glovebox.  
6 I worked in a very high radiation area.  
7 Dosimetry is -- is not an exact science, and it  
8 is impossible -- I think, and from my opinion --  
9 -- to reconstruct dosage at Rocky Flats. I -- I  
10 don't know what else I can tell you, and that's  
11 the reason that I feel fairly strongly that the  
12 cohort program should be approved at Rocky  
13 Flats. The dosimeter program at Rocky Flats  
14 was run probably you might say to the best of  
15 the ability of the people running it, but that  
16 doesn't mean it was run very well. There were  
17 a great deal of unknowns.  
18 And dosimetry -- dosimeters are not accurate.  
19 The placement of dosimeters are not always at  
20 the right location. People didn't always wear  
21 their badges. They were not read correctly.  
22 And furthermore, the science of dosimetry is --  
23 is -- is work -- is a work in -- a work in  
24 progress. It is not an exact science.  
25 Okay. Let me just switch gears a little bit,

1           if I may, and talk about the compensation  
2           program. I've studied this compensation  
3           program for five years. I still don't  
4           understand it. And let me explain why.  
5           I have a -- I have a claim in for a number of  
6           illnesses that are not cancers. I don't  
7           believe they're cancers yet. To -- without  
8           being really specific or explicit, I have  
9           respiratory problems. I also have a very large  
10          particular gland that causes me tremendous  
11          discomfort and I have respiratory problems and  
12          I have a hearing defect, and I feel that all of  
13          these were at least greatly caused by my  
14          employment at Rocky Flats.  
15          Part B -- as I understand the compensation  
16          program, Part B covers 22 cancers, beryllium  
17          disease, silicosis and beryllium sensitivity.  
18          Part E, on the other hand, covers other things,  
19          but will only compensate you for loss of  
20          income.  
21          Now there is no way I can -- I can just-- I can  
22          understand this. In other words, if you don't  
23          have these -- one of these 22 cancers,  
24          berylliosis or silicosis, you're not subject to  
25          compensation. If you don't have these cancers

1           and you have other conditions, you're only  
2           compensated if you have -- if you can prove a  
3           loss of wages. Well, I'm retired. I -- I  
4           can't prove a loss of wages. But yet I have  
5           what I consider to be extremely serious medical  
6           conditions -- perhaps not as serious as some,  
7           but fairly serious. When I wake up in the  
8           middle of the night gasping for breath, I think  
9           it's fairly serious, although it's not cancer.  
10          I don't understand. I mean I think -- I think  
11          some reasonable effort was -- was made to make  
12          the program fair, but there's a great big hole  
13          in it. And for the life of me, I don't  
14          understand -- I don't understand why I'm not  
15          covered for compensation because -- simply  
16          because I don't have one of these 22 cancers  
17          yet, or berylliosis or silicosis.  
18          There are very serious health effects that are  
19          not cancer, and let me just name three that I  
20          can think of. There may be a number of others,  
21          and I just can't think of these others. Non-  
22          cancerous tumors are not cancers, but tumors  
23          are very serious medical effects. They're not  
24          covered by Part B. They may be covered by Part  
25          E, but my experience is Part E is not very



1 Is it [Name Redacted]?

2 **DR. WADE:** Yeah.

3 **DR. ZIEMER:** [Name Redacted], are you on the  
4 line?

5 (No response)

6 Okay, perhaps not. Let me check back again on  
7 the other names -- [name redacted]? [Name  
8 Redacted]? Mr. [Name Redacted]? Mr. Weaver --  
9 Jack Weaver?

10 (No responses)

11 **UNIDENTIFIED:** (Unintelligible)

12 **DR. ZIEMER:** Is this [Name Redacted]?

13 **MR. EARLEY:** No, Lynn Earley.

14 **DR. WADE:** Say again, please?

15 **MR. EARLEY:** Lynn Earley.

16 **DR. ZIEMER:** Would you like to speak?

17 **MR. EARLEY:** Yes, I would.

18 **DR. ZIEMER:** Please proceed. Tell us your name  
19 again, Lynn --

20 **MR. EARLEY:** Lynn (unintelligible) Early --

21 **DR. ZIEMER:** E-a-r-l--

22 **MR. EARLEY:** -- (unintelligible) analyst,  
23 organic (unintelligible).

24 **DR. ZIEMER:** Okay, thank you.

25 **MR. EARLEY:** And I am also chair of the

1 International Science Oversight  
2 (unintelligible), newly-formed (unintelligible)  
3 to analyze (unintelligible) government agencies  
4 (unintelligible). I have (unintelligible) that  
5 I would like to go over. I don't know how much  
6 time you have, but I have some (unintelligible)  
7 that I --

8 **DR. ZIEMER:** You have a ten -- you have a ten-  
9 minute limit, sir.

10 **MR. EARLEY:** -- would like (unintelligible) I  
11 have to get (unintelligible) to get those so  
12 I'll (unintelligible) 20 seconds.

13 **MS. MUNN:** I don't think he heard you.

14 **DR. ZIEMER:** He's switching phones, I --

15 **DR. WADE:** Putting the dog out.

16 (Pause)

17 **MR. EARLEY:** (Unintelligible) serious question  
18 relative to the whole question of low dose  
19 exposure. These exposures have been analyzed  
20 by independent scientists down through the  
21 years and have been underestimated by many of  
22 the international bodies, including IAEA and  
23 the International Commission on Radiological  
24 Risks. I would hope that this advisory  
25 committee would take (unintelligible) some of



1           these low dose issues. There is a book that  
2           recently was published that is entitled  
3           *Chernobyl, 20 Years (unintelligible)*. It  
4           documents a whole host of non-cancer effects  
5           from these Chernobyl exposures, many of which  
6           were quite low doses. But the Japanese A-bomb  
7           studies did not document -- in fact, they only  
8           looked at the mortality (unintelligible) from  
9           (unintelligible) bomb blast and they were  
10          looking at cancer mortality exclusively. This  
11          book, which just came out last year, documents  
12          a whole host, a whole range of issues  
13          (unintelligible) anybody on the internet  
14          (unintelligible) by the European Committee on  
15          Radiation Risk -- a simple Google for ECRR will  
16          come to that text -- and interestingly, the  
17          IAEA, the World Health Organization, the ICRP  
18          had these Russian studies in hand but never  
19          translated them. Consequently, they have  
20          ignored many non-cancer risks. And I listened  
21          to the testimony quite carefully last night and  
22          was shocked to find that -- and some of the  
23          testimony today indicates that there are  
24          several -- and of course the last speaker  
25          alluded to other non-cancer risks.

1           Now this of course is something that is being  
2           overlooked, disregarded and the scientific  
3           literature has been underestimated because the  
4           scientists that are doing this work have been  
5           uniformly almost shunned in the scientific  
6           community. Give you a classic example. The  
7           BEIR VII committee, which was organized to take  
8           cognizance of the latest updated information on  
9           low dose risk. Unfortunately there were  
10          members of the (unintelligible) community that  
11          -- and I was doing freelance and still do  
12          freelance medical writing -- there were many  
13          organizations in the public interest community  
14          that nominated several members to BEIR VII.  
15          These members were independent scientists, well  
16          qualified to analyze the effects of low dose.  
17          There were about a dozen of them. None of them  
18          were appointed to the BEIR VII committee, and  
19          obviously many of the people -- and I've been  
20          doing conflict of interest studies -- many of  
21          them had conflicts. In fact, right on the  
22          Advisory Board that I'm addressing right now  
23          there are three members that I can recognize  
24          quickly who are in the Health Physics Society,  
25          two with official positions. Health Physics

1 Society has a position statement, and I quote,  
2 Below five to ten rem, and which includes  
3 occupational and environmental exposures, risk  
4 of health effects are either too small to be  
5 (unintelligible) or are non-existent. This is  
6 a (unintelligible) unscientific and completely  
7 unethical statement.

8 The -- there was a paper put out by  
9 (unintelligible) National Academy of Sciences,  
10 November 25th, 2003, and the -- there are 15  
11 cancer experts on this study. Cancer is  
12 attributable to low doses of ionizing  
13 radiation, assessing what we really know.  
14 You'll recognize those in the field. Their  
15 names (unintelligible) Richard (unintelligible)  
16 Goodhead, Charles Land of the NCI, John  
17 (unintelligible) of Harvard, Dale  
18 (unintelligible), President, Elaine  
19 (unintelligible), National Cancer  
20 (unintelligible), Jonathan (unintelligible),  
21 Richard (unintelligible) and this study that  
22 they did indicated that there is good evidence  
23 existing in epidemiological data that suggests  
24 ten to 50 millisievert exposure an acute dose  
25 and 50 to 100 millisievert for a protracted

1 exposure, but the scientists will not accept --  
2 and this of course refers directly to the  
3 exposures at our weapons labs -- that  
4 protracted exposure of small doses of any  
5 radioactive elements over time have a greater  
6 effect than the same acute dose that is given -  
7 - one exposure. Now you will find that most of  
8 the so-called experts in the field reject this  
9 theory completely, and yet there's sufficient  
10 evidence to show otherwise.  
11 So there are numerous studies in the low dose  
12 field to absolutely question the  
13 recommendations that ICRP has put out,  
14 primarily because it's based upon the A-bomb  
15 study, as much of the literature is.  
16 Consequently, what they're not looking at is  
17 internal emitters, the alpha emitters.  
18 Certainly the A-bomb study did not, and all of  
19 the subsequent studies of course do not take  
20 recognition of these internal emitters, which  
21 are at least 20 times more serious than  
22 external emitters, and this has been documented  
23 again in the literature.  
24 I've been studying radiation health effects for  
25 35 years. I'm a retired consumer economics

1           teacher. (Unintelligible) testimony as vice  
2           president of consumer (unintelligible) Michigan  
3           in the 1970s, became an early opponent of  
4           nuclear power because of what I was reading  
5           about radiation and health effects. What  
6           nobody has alluded to is the fact that when  
7           these weapon labs were first organized, the  
8           Atomic Energy Commission and all of the other  
9           governmental agencies were given the power to  
10          put a (unintelligible) label on all radiation  
11          research, and that meant restricted data and it  
12          was only available to a few limited persons.  
13          That of course took place all through the Cold  
14          War. The (unintelligible) atomic audit by  
15          Brookings Institution documented how the United  
16          States (unintelligible) \$5.8 billion on these  
17          atomic weapons development, and it is a wealth  
18          of information that is contained in that book  
19          certainly attest to the fact that the secrecy  
20          that took place (unintelligible) us a  
21          tremendous amount of (unintelligible) and a  
22          lack of information in dissemination of  
23          information, at least up until 1982 -- 1992  
24          when President Clinton of course put out the  
25          order -- Executive Order to declassify many of

1           these studies (unintelligible) --

2           **DR. ZIEMER:** Mr. Earley, we'd ask you to --

3           **MR. EARLEY:** -- (unintelligible) --

4           **DR. ZIEMER:** Mr. Earley, I'm going to ask you  
5           to try to wrap up. You're at your ten-minute  
6           limit, so if you could wrap up quickly, thank  
7           you.

8           **MR. EARLEY:** All right. I would certainly  
9           conclude by stating that the dose  
10          reconstruction program, which not only affects  
11          these workers in our labs but also applies to  
12          the atomic veterans, some 400,000 or more  
13          atomic veterans who were at -- in Japan and in  
14          the Pacific Theater during the atmospheric  
15          tests. This process of utilizing dose  
16          reconstruction is unscientific, has no basis in  
17          fact. Indeed, much of that information in many  
18          of the early years was either destroyed, was  
19          never taken accurately and for anyone to think  
20          that this is an accurate measure is completely  
21          preposterous, as has been alluded to by many of  
22          the speakers. I would say that the speakers I  
23          heard last night, all of them, certainly  
24          deserve a honorary degree because they could  
25          run circles around many of the experts, many of

1           whom I've interviewed as I was doing medical  
2           writing, so I commend those persons who have  
3           taken a stand and come out with their testimony  
4           and I hope that it will bear upon decisions  
5           that are made, not only by the advisory  
6           committee but by the agencies themselves that  
7           will of course make the final determination.  
8           So again, thanks again for the tremendous work  
9           that you people have done, who are the workers  
10          at the labs, and I certainly appreciate and am  
11          looking forward to working with you because  
12          we'll be developing some of the issues in the  
13          future and our (unintelligible) oversight for  
14          will certainly take cognizance of your  
15          testimony. Thank you for your work.

16        **DR. ZIEMER:** Thank you very much, Mr. Earley.  
17        Let me open the floor, if there's any others  
18        that didn't sign up but do wish to make a  
19        comment tonight, we've completed the list here.  
20        Are there any others who wish to make comment?  
21        Yes, and give us your name for the record here.

22        **MS. BAYES:** Certainly. My name is LeeAnn  
23        Bayes. My [Identifying Information Redacted]  
24        was [Name Redacted] was the [Identifying  
25        Information Redacted] at Rocky Flats for a

1 number of years. He worked at Rocky Flats from  
2 1971 until September 12th of 1988. That was  
3 the morning he died.

4 I consider my [Identifying Information Redacted]  
5 very fortunate because he had the opportunity  
6 to have excellent medical care for the duration  
7 of his illness. And I think it is  
8 reprehensible that our government has denied  
9 that same coverage to these people who have  
10 given so much to grant us our civil liberties  
11 and to guarantee us our Constitutional rights.  
12 I know nothing about dosimetry. I know my  
13 [Identifying Information Redacted] didn't get to  
14 see me graduate from high school, college,  
15 graduate school, get married or have children.  
16 And I don't think that it's fair that you  
17 should deny these people the opportunity to  
18 have every chance at surviving their illnesses  
19 or bearing through them with some degree of  
20 comfort and especially dignity.

21 I don't have a scientific background, but I do  
22 know what it's like to be an orphan of the Cold  
23 War. And that needs to be taken into  
24 consideration. Thank you.

25 **DR. ZIEMER:** Thank you very much. Well, let me



1           thank all of you again for coming out this  
2           evening. Been a long day for many. We -- the  
3           Board will reconvene tomorrow morning. We will  
4           be taking up the SEC petition from Dow Chemical  
5           and the SEC Petition from Chapman Valve. So  
6           some interesting additional activities. You're  
7           all welcome to join us at that time. We begin  
8           tomorrow at basically 8:15. The agenda says  
9           8:00 to 8:15 is the, quote, welcome. That  
10          means a chance to get here and have a cup of  
11          coffee and say hello, and then we'll get  
12          underway at 8:15.

13          We will be meeting in a different room  
14          tomorrow. I understand it's the Sherman Room?

15          **DR. ROESSLER:** (Off microphone)

16          (Unintelligible)

17          **DR. ZIEMER:** Savannah Room.

18          **DR. WADE:** No, Stanley -- Stanley --

19          **DR. ZIEMER:** Close enough for an old guy --  
20          begins with an S. Let me get it straight,  
21          Stanley 1, somewhere down the hall, I  
22          understand. We'll try to find each other.  
23          Thank you. Good night.

24          (Whereupon, the meeting was concluded at 8:35  
25          p.m.)

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**CERTIFICATE OF COURT REPORTER**

**STATE OF GEORGIA**

**COUNTY OF FULTON**

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of May 3, 2007; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 15th day of July, 2007.

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**STEVEN RAY GREEN, CCR**

**CERTIFIED MERIT COURT REPORTER**

**CERTIFICATE NUMBER: A-2102**