

UNITED STATES OF AMERICA  
CENTERS FOR DISEASE CONTROL

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NATIONAL INSTITUTE FOR OCCUPATIONAL  
SAFETY AND HEALTH

+ + + + +

ADVISORY BOARD ON RADIATION AND  
WORKER HEALTH

+ + + + +

63<sup>rd</sup> MEETING

+ + + + +

TUESDAY, JULY 28, 2009

+ + + + +

The meeting convened, at 9:00 a.m.,  
in the West Chester III Ballroom at the  
Cincinnati Marriott North at Union Centre,  
6189 Muhlhauser Road, West Chester, Ohio, Paul  
L. Ziemer, Chairman, presiding.

PRESENT:

- PAUL L. ZIEMER, Chairman
- JOSIE M. BEACH, Member
- BRADLEY P. CLAWSON, Member
- MICHAEL H. GIBSON, Member
- MARK GRIFFON, Member
- JAMES E. LOCKEY, Member
- WANDA I. MUNN, Member
- ROBERT W. PRESLEY, Member
- JOHN W. POSTON, SR., Member
- GENEVIEVE S. ROESSLER, Member
- PHILLIP M. SCHOFIELD, Member

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PRESENT: (Continued)

THEODORE M. KATZ, Acting Designated Federal  
Official

REGISTERED AND/OR PUBLIC COMMENT PARTICIPANTS:

ADAMS, NANCY, NIOSH Contractor  
AL-NABULSI, ISAF, DOE  
BARRIE, TERRIE, ANWAG  
BEATTY, EVERETT "RAY", Fernald Medical  
BRADFORD, SHANNON, NIOSH  
BRENNAN, DAVID, Baker-Perkins  
BRENNAN, STEPHEN, Baker-Perkins  
BROCK, DENISE, NIOSH  
BROEHM, JASON, CDC  
CALLAWAY, ALLEN "MOOCH", Fernald Medical  
CAMPBELL, EMMA, NIOSH  
CARIGLIA, LUCREZIA, Norton Company  
CRAWFORD, CHRIS, NIOSH  
DOLL, LOU, BTNMSP  
EDMUNDSON-CUMMINGS, SARA, Oak Ridge Hospital  
FESTER, THOMAS  
FITZGERALD, JOSEPH, SC&A  
GILBERTSON, TRACEY, NIOSH  
GLOVER, SAM, NIOSH  
HANSON, JOHN, SIUE/Dow Madison  
HINNEFELD, STU, NIOSH  
HOWELL, EMILY, HHS  
HUGHES, LARA, NIOSH  
KINMAN, JOSH, NIOSH  
KNOX, WAYNE  
KOTSCH, JEFF, US DOL  
LEWIS, MARK, ATL  
MAKHIJANI, ARJUN, SC&A  
MAURO, JOHN, SC&A  
McFEE, MATT, ORAU Team  
MURASKY, ALEX, Baker-Perkins  
NELSON, CHARLES, NIOSH  
NETON, JIM, NIOSH  
PRESLEY, LOUISE  
RAFKY, MICHAEL, HHS  
RUTHERFORD, LaVON, NIOSH

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SHARFI, MUTTY, ORAU Team  
TOMES, TOM, NIOSH  
WADE, LEW, NIOSH  
ZACCHERO, MARY JO, ORAU Team  
ZIEMER, MARILYN

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

2 9:13 a.m.

3 CHAIRMAN ZIEMER: Good morning,  
4 everyone. We are ready to begin day two of  
5 the Advisory Board on Radiation and Worker  
6 Health meeting here in West Chester, Ohio,  
7 suburb of Cincinnati.

8 Just for the record, I show that  
9 all Board members are present today with the  
10 exception of Dr. Melius, who was called away  
11 unexpectedly but will be rejoining us later.

12 I will just start with my usual  
13 reminder to register your attendance with us  
14 in the registration booklet in the foyer, if  
15 you have not already done that.

16 And also a reminder that there are  
17 agendas and information packets and papers on  
18 the back shelf for your use during the  
19 meeting, as well.

20 We are going to begin this morning  
21 with one of several SEC petitions that the  
22 Board will consider today, the first of which

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1 is an SEC petition, an 83.13 petition for Oak  
2 Ridge Hospital. Dr. Hughes, Lara Hughes of  
3 NIOSH is going to present NIOSH's Evaluation  
4 Report and then we will have an opportunity  
5 perhaps for one or more of the petitioners  
6 who, I believe, are on the phone lines to make  
7 comment as well. And then we will have an  
8 opportunity for Board discussion.

9 Dr. Hughes, welcome.

10 DR. HUGHES: Thank you. Good  
11 morning, everybody. Thank you, Dr. Ziemer and  
12 the Board, for giving me the opportunity to  
13 present this NIOSH evaluation for the SEC for  
14 Oak Ridge Hospital.

15 Okay. The Oak Ridge Hospital is a  
16 covered sited under EEOICPA and it was  
17 established in 1943 as the community hospital  
18 for the Town of Oak Ridge. And it opened in  
19 1943 as a 50-bed facility.

20 The covered period for this  
21 facility ranges from 1943 to 1959 when it was  
22 operated under a contract under the Manhattan

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1       Engineering District and later the Atomic  
2       Energy Commission.

3               And by 1945, as Oak Ridge grew, the  
4       capacity of the hospital grew up to over 300  
5       beds. And after World War II ended, the  
6       capacity was reduced and part of this hospital  
7       was put in standby.

8               Now, in 1949, the Oak Ridge  
9       Institute for Nuclear Studies was founded and  
10      it was meant to be a part of this, the so-  
11      called medical division, was started to  
12      investigate cancer treatment using  
13      radioisotopes that were produced in Oak Ridge.

14              So, in 1949, a wing, the unused  
15      wing of this hospital was assigned to what is  
16      called ORINS, the Oak Ridge Institute for  
17      Nuclear Studies to become a cancer hospital.

18              And during the period from 1950 to  
19      1959 -- ORINS was established in 1949 but not  
20      until 1950 it became an operational hospital.

21      So in this period from 1950 to 1959, the Oak  
22      Ridge Hospital was connected to the ORINS

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1 Cancer Hospital. And by 1960, the Atomic  
2 Energy Commission had ceased to support this  
3 hospital and Oak Ridge Hospital became a  
4 private medical institution. And they  
5 actually built a new facility. It was fairly  
6 close by and the ORINS cancer facility was not  
7 connected to the Oak Ridge Hospital anymore.

8 Here is a photograph of the Oak  
9 Ridge Hospital. This was taken some time in  
10 the late 1940s and the circled smaller wing  
11 that you can see was what became the ORINS  
12 cancer institute and actually built another  
13 two-story wing to the end of this, at the  
14 empty spot beside the wing.

15 Now, as for site operations,  
16 obviously this was a hospital, so it was quite  
17 different from what typically is going on at  
18 the DOE weapons complex facilities. So from  
19 1943 to 1959, obviously it was -- as a  
20 community hospital, it had a radiology  
21 department which did diagnostic and  
22 therapeutic x-ray treatments and also in the

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1 '50s it had a smaller radioisotope lab that  
2 did state-of-the-art cancer treatment. This  
3 was not the same as what ORINS did, which was  
4 much more experimental and much more larger-  
5 scale experimental cancer treatment.

6 Now, in addition to that, the  
7 hospital supported the ORINS Cancer Hospital  
8 which was, as you could see in this  
9 photograph, it was a much smaller facility.  
10 It had a maximum capacity of 30 patients. So,  
11 this ORINS part did not have all of the  
12 equipment or all of the facilities that was  
13 needed to operate a hospital. So, it had to  
14 rely on the Oak Ridge Hospital.

15 For example, we have documentation  
16 that indicates that the patients that needed  
17 operations were actually brought into the Oak  
18 Ridge Hospital for operations and also that  
19 patients that had been treated with  
20 radioisotopes that were radioactive were put  
21 in the morgue of the Oak Ridge Hospital  
22 because the ORINS hospital did not have such

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1 facilities.

2 In addition, ORINS used facilities  
3 such as kitchen, pharmacy, radiology  
4 department of the Oak Ridge Hospital, and in  
5 addition, it relied on the staff of the Oak  
6 Ridge Hospital such as physicians, nurses,  
7 aides, janitors, orderlies, per contract  
8 agreement that would go over and supply staff  
9 services whenever needed. And this was done  
10 because the patient load of the ORINS cancer  
11 hospital varied to quite a large extent so it  
12 didn't always need as much staff as other  
13 times.

14 As for the petition, this petition,  
15 SEC-00140 (sic, SEC-00137) was received  
16 January 14, 2009. February 17, 2009, NIOSH  
17 issued a professional judgment that the  
18 petition qualified for evaluation based on the  
19 unavailability of personal monitoring data.  
20 The Federal Register notice was published  
21 March 3rd and on June 30th of this year, NIOSH  
22 issued its Evaluation Report.

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1           The petitioner-proposed SEC class  
2 definition included all workers who worked in  
3 any location at the Oak Ridge Hospital in Oak  
4 Ridge Tennessee from June 30, 1958 through  
5 December 31, 1959, the end of the covered  
6 period.

7           NIOSH decided to expand the  
8 evaluated class to the following: all  
9 employees who worked in any location at the  
10 Oak Ridge Hospital in Oak Ridge, Tennessee  
11 from May 15, 1950 through December 31, 1959,  
12 and this was based on the knowledge that the  
13 ORINS cancer facility was the reason that  
14 there might have been an exposure potential at  
15 the Oak Ridge Hospital.

16           And finally, the NIOSH-recommended  
17 class definition is all employees who worked  
18 in any location at the Oak Ridge Hospital in  
19 Oak Ridge, Tennessee for a number of workdays,  
20 aggregating at least 250 workdays from May 15,  
21 1950, through December 31, 1959, or in  
22 combination with workdays within the

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1 parameters established for one or more other  
2 classes of employees in the SEC.

3 As usually done by NIOSH, we do an  
4 extensive search for available information,  
5 which includes ORAU-published Technical  
6 Information Bulletins. We look at the case  
7 files in the NIOSH databases. We also  
8 contacted ORAU, which is the organization that  
9 followed ORINS -- was actually more or less  
10 one and the same organization. They renamed  
11 in the mid-'60s, I believe. I might be wrong  
12 on that.

13 We looked at the NIOSH Site  
14 Research Database, the documentation and  
15 affidavits provided by the petitioner, and we  
16 interviewed three individuals who were former  
17 workers at the Oak Ridge Hospital and the  
18 ORINS Cancer Hospital. And we also looked  
19 into scientific publications related to cancer  
20 treatments with radioisotope.

21 I would like to add that this  
22 evaluation was done by NIOSH since the NIOSH

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1 contractor, ORAU, has a conflict of interest  
2 with this facility.

3 When looking at the NIOSH claims  
4 database, we have 17 claims for this facility,  
5 12 of which met the proposed class definition  
6 from 1950 to 1959. Dose reconstructions have  
7 been completed on ten claims and none of the  
8 cases have internal or external monitoring  
9 information for the Oak Ridge Hospital  
10 employment.

11 Now let me go back to explain the  
12 rationale why we think there was an exposure  
13 potential at the Oak Ridge Hospital, since  
14 after all it was only a community hospital.  
15 However, from the research, we determined that  
16 the ORINS Cancer Hospital created a  
17 radioactive exposure potential for the  
18 attached Oak Ridge Hospital personnel and  
19 NIOSH has recommended adding a class for the  
20 ORINS personnel in 2006, based on  
21 infeasibility to reconstruct internal doses  
22 for ORINS employees.

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1           We have come to the conclusion that  
2 a similar exposure potential existed to an  
3 unknown number of Oak Ridge Hospital  
4 employees, based on them providing support to  
5 the ORINS cancer hospital by bringing patients  
6 into the Oak Ridge Hospital for treatment and  
7 by allowing staff to go into the ORINS  
8 facility to support operations there. The  
9 staff would be employed by the Oak Ridge  
10 Hospital, so any kind of claim they would  
11 file, their employment would most likely show  
12 that they were employed by the hospital,  
13 although they might have worked in the ORINS  
14 cancer facility from time to time.

15           So therefore, the magnitude and  
16 nature of the exposure potential to Oak Ridge  
17 Hospital employees from ORINS was varied and  
18 essentially unknown. From memos and reports,  
19 we know that so-called hot patients, the  
20 patients that had been injected with  
21 radioisotopes, were present in operating  
22 rooms, in the morgue, the radiology

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1 department, and possibly were placed in the  
2 patient wards of the Oak Ridge Hospital, which  
3 per contract agreement, was done.

4 Another memo we found that was  
5 concerned with the eating utensils used by  
6 patients of the ORINS facility that were  
7 returned to the kitchen in the Oak Ridge  
8 Hospital that were radioactive from being used  
9 by these patients.

10 Oak Ridge Hospital staff were  
11 transferred to ORINS as needed and they were  
12 involved in the preparation, administration of  
13 radioactive medicines, and were involved in  
14 assisting with caring for and cleaning up  
15 after radioactive patients.

16 The internal exposure potential of  
17 this operation: we found that there was no  
18 internal exposure potential at the Oak Ridge  
19 Hospital before 1950, which is when the ORINS  
20 Cancer Hospital started operations. The major  
21 internal player is radioiodine, which was used  
22 in cancer treatment and diagnostics at both

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1 facilities and ORINS used up to three curies  
2 in a single year of radioiodine.

3 From the medical literature, we  
4 found that the exposure potential to volatile  
5 radioiodine was largely unknown in the 1950s.

6 So, and this is more or less evidenced  
7 because there was no -- ORINS did no personal  
8 monitoring for radioiodine uptake in its  
9 staff.

10 In addition, they used a large  
11 variety of other radionuclides prepared and  
12 administered to patients where these nuclides  
13 were prepared in radioisotope hoods. Once  
14 they have been administered to the patient,  
15 they had to deal with uncontained radioactive  
16 material to what they termed unpredictable  
17 patient behavior. These people were cancer  
18 patients who were very sick, some of them, at  
19 least, so they had to deal with a lot of  
20 uncontained radioactive material.

21 The external exposure potential  
22 resulted from standard hospital radiology and

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1 radioisotope department at the Oak Ridge  
2 Hospital, as well as the ORINS operations.  
3 The ORINS did administer to patients a fairly  
4 large amount of beta/gamma-emitting  
5 radionuclide. A major player was gallium-72,  
6 which has a somewhat above 2 MeV gamma ray,  
7 and with regard to this treatment, we found  
8 some reports where they were concerned about  
9 the radiation fields and the sidewalks outside  
10 the hospital. So there was definitely an  
11 external exposure potential.

12 In addition, ORINS used radiation  
13 teletherapy sources, using cobalt-60 and  
14 cesium-137. These were very strong or high-  
15 activity sources that were used to radiate  
16 patients.

17 And whereas ORINS had restrictions  
18 in place using a survey meter that was used by  
19 the nurses and it was calibrated in colors --  
20 it was green, yellow, and red, and if the  
21 meter read in the red range, it was meant to  
22 be the patient would have to be -- access to

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1 the patients had to be restricted. And the  
2 red area was calibrated to 6.2 micro R per  
3 hour, which is not terribly low.

4 As for the availability of  
5 dosimetry data, it is very short. No internal  
6 or external monitoring data have been located  
7 for Oak Ridge Hospital employees. There were  
8 memos that indicated that the radiology staff  
9 was likely monitored using film badges but  
10 this data has not been found.

11 For ORINS itself -- the people that  
12 were actually employed by ORINS seemed to have  
13 been monitored for external radiation exposure  
14 and external annual summary data are  
15 available. However, this is for the ORINS  
16 employees, not for Oak Ridge Hospital  
17 employees.

18 And as mentioned earlier, ORINS  
19 also did not do any internal monitoring before  
20 1964. The petition basis that was submitted  
21 by the petitioner was that the lack of  
22 monitoring data for Oak Ridge Hospital -- that

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1 there was a lack of monitoring for Oak Ridge  
2 Hospital employees, although some of them were  
3 working with radionuclides in support of the  
4 ORINS operations.

5 And the NIOSH evaluation found  
6 that, indeed, monitoring data for Oak Ridge  
7 Hospital employees is not available and that  
8 the ORINS operations had the potential to  
9 cause an undetermined and varied exposure  
10 potential to Oak Ridge Hospital employees.

11 The evaluation process that NIOSH  
12 did consists of a two-pronged test established  
13 by EEOICPA and consists of the following two  
14 steps. First, it is determined whether it is  
15 feasible to estimate the level of radiation  
16 doses of individual members of the Class with  
17 sufficient accuracy and secondly, we determine  
18 if there is a reasonable likelihood that  
19 radiation doses may have endangered the health  
20 of the members of the Class.

21 As for the feasibility  
22 determination, NIOSH has found that the

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1 available monitoring records, process  
2 description, and source-term data are  
3 insufficient to complete dose reconstructions  
4 for the proposed class of employees, and NIOSH  
5 currently lacks access to sufficient  
6 monitoring source-term data and process  
7 information to estimate the complete internal  
8 and external dose to members of the Class.

9 Therefore, the NIOSH-proposed class  
10 definition for Oak Ridge Hospital employees is  
11 all employees who worked in any location at  
12 the Oak Ridge Hospital in Oak Ridge, Tennessee  
13 for a number of workdays aggregating at least  
14 250 workdays from May 15, 1950 through  
15 December 31, 1959 or in combination with  
16 workdays with the parameters established for  
17 one or more other classes of employees in the  
18 SEC.

19 The health-endangerment  
20 determination, NIOSH has determined that it is  
21 not feasible to complete dose reconstructions  
22 with sufficient accuracy for the period of

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1 ORINS operations associated with the Oak Ridge  
2 Hospital from 1950 to 1959, and that the  
3 health of the employees covered may have been  
4 endangered. The evidence reviewed indicates  
5 that an undetermined number of workers in the  
6 Class may have received chronic internal and  
7 external exposure from a large variety of  
8 internally and externally administered  
9 radionuclides to treat cancer at the ORINS  
10 cancer hospital.

11 In summary, the feasibility  
12 determination dose reconstruction is not  
13 feasible for internal exposure, for all  
14 radionuclides from 1950 to 1959 and it is not  
15 feasible for beta and gamma external exposure  
16 from 1950 to 1959. NIOSH has determined that  
17 external x-ray exposure to an x-ray technician  
18 can be reconstructed as well as the  
19 occupational medical x-ray exposure.

20 And that concludes my presentation.

21 Thank you. Questions, please?

22 CHAIRMAN ZIEMER: Thank you, Dr.

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1 Hughes. Let me see if there are any immediate  
2 questions. Dr. Roessler?

3 MEMBER ROESSLER: Do you want me to  
4 wait until the petitioners --

5 CHAIRMAN ZIEMER: Well, let's hear  
6 from the petitioners and then we will open the  
7 floor. Yes, okay. And maybe you can sort of  
8 stand by, too, Lara.

9 But let me ask if any of the  
10 petitioners -- I think we have two or three  
11 that may be on the line. If they wish to  
12 speak, just identify who you are and then you  
13 may make your statement.

14 MS. EDMUNDSON-CUMMINGS: I am Sara  
15 Edmundson-Cummings and I would like to speak,  
16 please.

17 CHAIRMAN ZIEMER: Could you just  
18 repeat that again? We got the volume here now  
19 turned up. Go ahead.

20 MS. EDMUNDSON-CUMMINGS: And I am  
21 on a speaker phone. Can you hear me okay?

22 CHAIRMAN ZIEMER: Yes.

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1 MS. EDMUNDSON-CUMMINGS: Okay.  
2 Thank you so much for the opportunity to speak  
3 to the Board. I am Sara Edmundson-Cummings  
4 and my [identifying information redacted] and  
5 [identifying information redacted] are in a  
6 listening mode. We are the children of Ethel  
7 Blythe Edmundson. Our mother was an RN and an  
8 employee of the Oak Ridge Hospital beginning  
9 in the 1950s. She was an employee of Oak  
10 Ridge Hospital for 25 years.

11 Our mother died of metastatic  
12 breast cancer. She had a very poor quality of  
13 life with her sternum breaking with just a  
14 cough, ribs breaking, and her right leg  
15 breaking, all due to the cancer. She was in  
16 tremendous pain, requiring heavy doses of pain  
17 medication.

18 Each time I drive I-40 East towards  
19 Oak Ridge, I see the sign, 19 miles to Oak  
20 Ridge, and I am teary-eyed. The thing that I  
21 really have a hard time with is the fact that  
22 I can't go home again. I miss mother's hugs

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1 at the door and she would light up like a  
2 Christmas tree because I was home. We miss  
3 her at Mother's Day, her birthdays and at  
4 Christmases.

5 I have driven by the old home many  
6 times and I no longer belong there. Still,  
7 some part of me cannot accept that and I keep  
8 wanting to go back. Our love with our mother  
9 was cut short by 20 or more years. Her sister  
10 and her mother lived to be up in their '90s.  
11 We missed many years of love and companionship  
12 with our mother due to her cancer death.

13 Oak Ridge Hospital's employees were  
14 in the same work area as ORINS. ORINS  
15 conducted research with cancer patients with  
16 various radioactive materials. There was no  
17 personal radiation monitoring, externally or  
18 internally, for the Oak Ridge Hospital  
19 employee.

20 This has been a very lengthy  
21 process for all of us. We have tried to be  
22 patient and thank you for your patience and

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1 understanding. We agree with the petition and  
2 are confident that our mother's cancer death  
3 was related to radiation exposure while  
4 employed at Oak Ridge Hospital. She would be  
5 proud to know that her death and the deaths of  
6 other Oak Ridge Hospital colleagues has been  
7 recognized by this petition.

8 Please take the action to approve  
9 and add the Class to the SEC. Several Oak  
10 Ridge Hospital employees have left this life  
11 too soon, and their families have been  
12 slighted a full life with their loved ones.  
13 We are very grateful to see that this will be  
14 resolved for employees of the Oak Ridge  
15 Hospital. And thank you so much for listening  
16 to our concerns.

17 CHAIRMAN ZIEMER: Okay, thank you  
18 very much, Sara.

19 MS. EDMUNDSON-CUMMINGS: You're  
20 welcome.

21 CHAIRMAN ZIEMER: And now we can  
22 open the floor for questions. Dr. Roessler,

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1 do you want to begin?

2 MEMBER ROESSLER: What we are  
3 looking at here is a building next to another  
4 building and questioning whether contamination  
5 and so on would go from one building to the  
6 other, and I think I looked at it critically  
7 from that point of view. I mean, you were  
8 persuasive to me in discussing the people  
9 going back and forth.

10 But I am a little concerned that  
11 there are so many indications in your report  
12 that they did have good practices in ORINS and  
13 between the hospital and the nuclear facility.

14 Some of the things that I picked out was that  
15 they had separate laundries. The maids, and  
16 this is out of your report, janitors and so on  
17 were trained not to go into controlled areas.

18 Marshall Brucer had this book, and  
19 I haven't read it, on radioisotope hazards.  
20 Apparently they were aware of the problems  
21 that would occur with people going back and  
22 forth. So, I am just trying to play devil's

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1 advocate here. I just really am not totally  
2 convinced that enough looking has been done to  
3 find some more records. And I did notice you  
4 interviewed some people. And you know, this  
5 is in the '50s. I am not sure who you did  
6 interview but I guess I would feel more  
7 comfortable either reading those interviews or  
8 maybe even talking to some people who are  
9 still alive, I would assume, who were there at  
10 the time to ask them more about the controls  
11 that they had. I am just trying to play  
12 devil's advocate here and bring up a few  
13 questions.

14 CHAIRMAN ZIEMER: My understanding  
15 is the two buildings were actually connected  
16 by some kind of a walkway or --

17 DR. HUGHES: That is correct.

18 CHAIRMAN ZIEMER: It showed up in  
19 the picture as well. Is that correct?

20 DR. HUGHES: That is correct.  
21 There were actually -- ORINS started in the  
22 wing of the hospital and they just added

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1 another wing to the end. So yes, it was  
2 connected.

3 CHAIRMAN ZIEMER: So from that  
4 point of view, it wasn't a matter of leaving  
5 one building and going to another, in a sense,  
6 except going through a connecting corridor, as  
7 it were. Is that correct?

8 DR. HUGHES: That is correct.  
9 There were two separate entities; they had two  
10 separate contracts with the AEC. They were  
11 treated as two separate facilities.

12 And initially we looked at it. We  
13 were like yes, we don't really see how they  
14 are connected but we found all the contract  
15 information. And that was actually what  
16 caused us to move in this direction, because,  
17 well, it pretty specifically states they could  
18 draw on any employee, any personnel need that  
19 they would have. And I did interview a former  
20 physician of this facility. And he said, oh,  
21 yes, I would go over there and do an  
22 amputation or do this and he was not

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1 monitored.

2           So it was handled that it --  
3 indeed, ORINS was aware of the radiation  
4 exposure potential but I am not sure how much  
5 it was enforced with these personnel that  
6 would come in and help out.

7           CHAIRMAN ZIEMER: Now I suppose  
8 from kind of a practical point of view, we  
9 would expect that the nurses and the doctors  
10 would be, perhaps, heavily exposed and maybe  
11 some of the orderlies and others who were  
12 support staff. I don't know how much Oak  
13 Ridge Hospital operated like a normal  
14 hospital, but in many hospitals, the doctors  
15 are not employed by the hospital. They have  
16 privileges there but they are paid by somebody  
17 else.

18           I am wondering in this case, and I  
19 don't know if Labor looks at this or if is  
20 this an issue, but it seemed to me that there  
21 is a possibility that many doctors, such as  
22 the one you described, who went in there to

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1 either do rounds or attend patients may not  
2 actually be employees of the hospital. Maybe  
3 they are, you know, a physicians' clinic of  
4 some sort. But they are there every day. In  
5 fact, it occurred to me if they are making  
6 rounds every day, how do you count the 250  
7 days for those folks if they are there partial  
8 days.

9 But I think it is a valid question  
10 for a hospital. Also hospitals have,  
11 typically, have many volunteers who do various  
12 things. They are sort of like Wal-Mart  
13 greeters in some cases, and I don't mean that  
14 in a derogatory way. Many of them, at least  
15 nowadays are in the hospital quite a bit. How  
16 do we handle them?

17 And also, not only the regular  
18 physicians, but often radiology groups are  
19 independent. And you know this if you have  
20 paid bills. You often don't pay the hospital  
21 for services you get in the hospital. You pay  
22 a clinic or some other group.

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1           So, I am wondering if that applies  
2           at all or were these all employed by the  
3           hospital, and if they weren't, how does Labor  
4           handle that?    Because there wouldn't be a  
5           record of them being employed there if they  
6           were a physicians' group that came in to tend  
7           to patients in one way or another.

8           So, you get the drift of what I am  
9           asking.

10           DR. HUGHES:   Yes.   I can't really  
11           answer that question but we know we have  
12           available -- the Oak Ridge Hospital, as it was  
13           an AEC facility, published an annual report to  
14           the AEC and it listed staff in every single  
15           report.    So it lists the names of all the  
16           doctors that worked there that were employed  
17           there now.    Was there any other doctor  
18           possibly that was in that situation that you  
19           pointed out?   I don't know at this time.

20           CHAIRMAN ZIEMER:   Well, and maybe  
21           Sara or some of the petitioners or others  
22           would know whether or not doctors were

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1 employed privately in Oak Ridge. Because it  
2 would not be unusual for a private doctor to  
3 have hospital privileges for whatever reason.

4 And, Josie, you have a comment?

5 MEMBER BEACH: Well, I was just  
6 looking on the report on page 20 of 46. It  
7 does list type of employees. Staff MDs or  
8 physicians are listed, along with part-time  
9 staff technicians, nurses' aides, anyway down  
10 to the maintenance personnel. I don't know if  
11 that is everybody involved but it seems to be  
12 a pretty good list.

13 CHAIRMAN ZIEMER: Well, I think my  
14 question would remain, would only staff  
15 physicians have privileges in the hospital,  
16 and in a typical hospital, that would not be  
17 the case.

18 MEMBER MUNN: Would they be  
19 employees in that case?

20 CHAIRMAN ZIEMER: Well, I don't  
21 know the answer. I know in many hospitals,  
22 certainly today, the physicians are typically

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1 not employed by the hospital. They may have  
2 an agreement to have privileges there but they  
3 are independent from a payment point of view.

4 And so if you looked at the hospital --

5 What you have is you have the  
6 regular -- there is a certain number of  
7 regular staff. Dr. Lockey knows this better  
8 than I. I am just talking about how I get  
9 billed and so on.

10 You know, I have a funny view. I  
11 should tell you my oldest daughter was born in  
12 the Oak Ridge Hospital and I don't think I  
13 will have a conflict of interest. But it  
14 occurred to me that maybe my wife would  
15 qualify as a laborer --

16 (Laughter.)

17 CHAIRMAN ZIEMER: -- although she  
18 wasn't there 250 days. I shouldn't say that.

19 This is serious business. But we are not  
20 sure. I am not sure how we identify the  
21 workers in some of the hospital situations.  
22 That is my point.

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1 DR. NETON: This is Jim Neton. It  
2 seems to me we have a number of claimants the  
3 Department of Labor has vetted and are in the  
4 program for dose reconstructions. And it is  
5 really under their purview to establish  
6 whether those people are valid claimants. Any  
7 physician who was a contractor to DOE or such  
8 could -- has the opportunity to file, like  
9 anyone else would be, to be a member of this  
10 class or to be a valid claimant.

11 So, I am not sure that is a  
12 question that we can answer here but certainly  
13 the Department of Labor could maybe speak up  
14 as to how they would --

15 CHAIRMAN ZIEMER: Yes, I understand  
16 it is really a Labor issue. Within the  
17 wording of the Class that we would recommend,  
18 I am really raising the question as to whether  
19 we have covered all the folks in the wording.

20 MR. KOTSCH: As Jim mentioned, --

21 CHAIRMAN ZIEMER: This is Jeff  
22 Kotsch from Labor.

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1                   MR. KOTSCH:       I'm sorry.       Jeff  
2                   Kotsch with the Department of Labor.   Each of  
3                   these would be looked at on a case-by-case  
4                   basis but certainly, if they were direct  
5                   employees or contractors, they would be, you  
6                   know, they should be covered under the  
7                   definition, at least the way we were  
8                   interpreting it. It is a DOE facility.

9                   MEMBER GRIFFON:   Yes, I just wanted  
10                  to follow up on the -- I mean, it is our  
11                  responsibility in a sense in that class  
12                  definition we have to think about the language  
13                  of who is included in the Class. And in this  
14                  case, I think you included all workers --

15                  MEMBER LOCKEY:       It says all  
16                  employees.

17                  MEMBER GRIFFON:       I mean, all  
18                  employees. And that sort of stuck out to me  
19                  because so often in our arguments we are  
20                  arguing whether people were in certain  
21                  buildings or actually in, you know, had the  
22                  potential for exposure. And here we are just,

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1 I am not sure we went far enough with the  
2 research or NIOSH went far enough with the  
3 research to distinguish whether there were  
4 classes of employees.

5 You know Paul is maybe asking the  
6 broader question of does it go beyond the  
7 hospital walls. But I am saying within the  
8 hospital, should you have included all  
9 employees in this class.

10 And this is just kind of looking at  
11 other SECs that we have reviewed and I am  
12 thinking of consistency here. You know, were  
13 there administrative people in the hospital  
14 that had any potential to be in those areas  
15 where, you know, and I know maybe you are  
16 going to say, well we don't have the records  
17 to show who was who. But, I mean, I see job-  
18 title stuff, so I don't know. I just wonder  
19 if you went far enough to try to determine  
20 whether there was some way to distinguish who  
21 was likely, you know, higher exposure  
22 potential.

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1 DR. NETON: Yes, I understand what  
2 you are saying and you sort of guessed where I  
3 was going to come from. But, you know, in  
4 this situation, we have no monitoring records.

5 So in the situations you described or other  
6 SEC determinations where we have a large  
7 amount of monitoring data that could help us  
8 determine, you know, where people may have  
9 worked based on their monitoring status, we in  
10 some cases can triage those folks.

11 But in a situation where you have  
12 no monitoring data at all, it is very hard to  
13 place anyone in a location at all. And in  
14 that situation, I think there has been a  
15 precedent set that we do default to this all-  
16 employees. There have been a number of  
17 classes established with that criterion, and  
18 it is usually almost always the case that it  
19 is because we have no monitoring information  
20 at all.

21 MEMBER GRIFFON: And I am not sure  
22 -- maybe I should ask this question. I mean,

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1 how many employees were there in this time  
2 period in the Oak Ridge Hospital? What is the  
3 number we are talking about? Because I  
4 remember this came up with MIT, our discussion  
5 about MIT. And I think you came back and  
6 modified the approach that, I may have that  
7 wrong, but you know, with MIT, we could have  
8 had all students, all faculty, you know.

9 MR. RUTHERFORD: Yes, actually MIT  
10 is a little different. MIT -- we actually  
11 never completed the evaluation on MIT. We  
12 actually shifted to the Hood Building.  
13 Originally, we had defined all -- you are  
14 correct. We actually pulled that evaluation  
15 back. We had defined all employees at MIT.

16 I'm sorry. This is LaVon  
17 Rutherford, by the way.

18 MEMBER GRIFFON: You are re-  
19 examining that one, though.

20 MR. RUTHERFORD: Yes.

21 MEMBER GRIFFON: I mean, the Board  
22 brought up the same concern.

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1 MR. RUTHERFORD: Right. But a  
2 couple of examples, Westinghouse Atomic Power  
3 Development, there was an indication that  
4 there was a very small activity that was  
5 conducted in what was probably a smaller area.

6 However, we had no evidence of that area and  
7 we had no information to change it.

8 Standard Oil. Standard Oil was a  
9 pilot project. We had indications it was  
10 pilot activity, probably not large-scale. But  
11 we just didn't have enough information to  
12 reduce that class as well. So, I think  
13 precedence has been set in this situation.

14 MEMBER GRIFFON: Well, maybe it is  
15 mixed a little bit.

16 MR. RUTHERFORD: Yes, and here is -  
17 - yes. And the difficulty, Oak Ridge  
18 Hospital, or if you remember, I did Oak Ridge  
19 Institute of Nuclear Studies originally, I had  
20 totally separated them. But after looking at  
21 it and after discussions with Dr. Hughes and  
22 such, you did have employees moving back and

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1       forth.

2                   Plus, you have to remember, you had  
3       the morgue. It was a common morgue that was  
4       used between both facilities. And you had  
5       patients who were injected with radioisotopes  
6       who died that were taken to that morgue. So  
7       you had contamination potential there as well.

8                   You had the eating utensils --  
9       don't forget that -- that were used. The same  
10      cafeteria. And we know we have documentation  
11      of contaminated eating utensils.

12                  So, I just think it was probably  
13      not a routine monitoring program at Oak Ridge  
14      Hospital as well for surface contamination  
15      that could have been spread from one facility  
16      to the other. You have already got  
17      indications that that contamination had spread  
18      through the cafeteria and possibly through the  
19      morgue as well.

20                  So, it made it very difficult.  
21      Believe me, we struggled with the Class  
22      definition on this one.

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1 MEMBER GRIFFON: The laundry, too.

2 MR. RUTHERFORD: Well, they had  
3 separate laundries.

4 CHAIRMAN ZIEMER: We have Bob  
5 Presley and Phil Schofield, then John Poston.

6 MEMBER PRESLEY: Emily, can I talk?

7 CHAIRMAN ZIEMER: What was that  
8 question, Bob?

9 MEMBER PRESLEY: The question was,  
10 can I talk?

11 CHAIRMAN ZIEMER: Maybe you can but  
12 you may not. I don't know. Bob is asking  
13 whether he is conflicted on Oak Ridge  
14 Hospital.

15 I believe this is considered a  
16 separate facility. Is it not? Robert, are  
17 you conflicted on ORINS?

18 MEMBER PRESLEY: No.

19 CHAIRMAN ZIEMER: No. Then you are  
20 okay.

21 MEMBER PRESLEY: All right. Paul  
22 brought the question up about the doctors and

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1 the nurses. In the early days at Oak Ridge  
2 Hospital, your doctors were military  
3 personnel. We have got pictures of the  
4 doctors with their military uniforms on. Most  
5 of the nurses were brought in, and there was  
6 some nurses hired outside but there was a lot  
7 of laborers that were hired in at Oak Ridge  
8 Hospital.

9 But the majority of the doctors and  
10 a lot of the nurses in the early days,  
11 probably up to the gate opening, were military  
12 personnel that were brought in there to work  
13 onsite. I know a lot of the military doctors  
14 worked on me. [Identifying information  
15 redacted], I think both were military doctors  
16 that stayed in Oak Ridge.

17 CHAIRMAN ZIEMER: And I suppose the  
18 same question would arise. Would they qualify  
19 under this definition?

20 MEMBER PRESLEY: Yes, and the thing  
21 was, did you all, I am not causing any  
22 problems but, did you look at records for

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1 monitoring at Y-12 and ORNL? Because if I  
2 remember correctly, Y-12 did some of the early  
3 film badges and things like that. The  
4 hospital did not have their own monitoring  
5 facilities.

6 So Y-12 or ORNL might have been the  
7 ones that had done the early monitoring of  
8 those film badges.

9 DR. HUGHES: Yes, that is correct.

10 We actually -- got memos that they did do  
11 this. You know, the memos instituting the  
12 program but we never actually found the data.

13 We did look there. So, we found records that  
14 they were supposed to be sent to the -- oh, I  
15 don't remember.

16 We have memos that the bad results  
17 should be sent there and there. And we tried  
18 to look there and we were unable to locate  
19 them.

20 CHAIRMAN ZIEMER: LaVon Rutherford.

21 MR. RUTHERFORD: Yes, we actually  
22 did a pretty detailed search when we did Oak

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1 Ridge Institute of Nuclear Studies. What we  
2 found was -- we found a little bit of film  
3 badge data for the Oak Ridge Institute of  
4 Nuclear Studies personnel. However, none of  
5 those were for the Oak Ridge Hospital  
6 personnel. This was back when we did ORINS.  
7 We actually checked at Y-12. And really, we  
8 checked at Oak Ridge National Lab because they  
9 were producing a lot of the isotopes that were  
10 being done at the time between Y-12 and Oak  
11 Ridge National Lab. So we figured they might  
12 actually have been doing the monitoring as  
13 well. However, we didn't find anything.

14 CHAIRMAN ZIEMER: Okay, Philip.

15 MEMBER SCHOFIELD: You know, the  
16 Atomic Energy Commission controlled that  
17 hospital. Is that correct?

18 DR. HUGHES: That is correct.

19 MEMBER SCHOFIELD: Okay, then they  
20 really -- they would have had to say who  
21 worked there and who did not work there, given  
22 the security restrictions in the early days.

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1 So you would have to assume anybody that  
2 worked in there was only there with their  
3 permission, which means they are effectively  
4 an Atomic Energy Commission employee or Oak  
5 Ridge employee.

6 CHAIRMAN ZIEMER: That is helpful.  
7 Thank you. John Poston.

8 MEMBER POSTON: Cancer is a  
9 terrible thing and I can testify to that. But  
10 I just, at this point, find it very difficult  
11 to make a decision on this issue because I  
12 don't think there is enough information here.

13 At this point, you know, even in  
14 the 1950s, nuclear medicine and so forth was  
15 actually becoming a fairly mature activity.  
16 And the fact that there were cancer therapy  
17 sources, intense sources for cancer treatment  
18 is sort of irrelevant to me in terms of  
19 potential exposures because of the rules that  
20 were in place even in the 1950s.

21 So you know, I just haven't heard  
22 enough here to give me a clear idea of what is

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1 going on. And at this point, I would not be  
2 in favor of voting in favor of this petition.

3 CHAIRMAN ZIEMER: Dr. Lockey.

4 MEMBER LOCKEY: In relationship to  
5 physicians, they function usually through  
6 professional corporations, and even though  
7 they may be a full-time employee of Oak Ridge  
8 Hospital, most likely it is their professional  
9 organization that contracts with Oak Ridge  
10 Hospital to provide their service. So they  
11 may be there 60 hours a week but payment goes  
12 to the professional corporation, which is  
13 their employer, which then comes back to them  
14 personally.

15 So that issue, I think, either has  
16 to be addressed in the language or has to be  
17 further explored. That is the way -- you  
18 know, there are anesthesiologists here. There  
19 are surgeons here. There is radiologists. I  
20 suspect a lot of these physicians had their  
21 own corporation that contracted directly to  
22 provide services to Oak Ridge Hospital.

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1                   CHAIRMAN ZIEMER:     Certainly, as  
2 Robert Presley described, perhaps the early  
3 ones were military. I am not -- we perhaps  
4 don't know how long that lasted. It was  
5 certainly in the '40s and into the '50s, I  
6 suppose. I doubt if it was the case in the  
7 middle '50s, would you say?

8                   MEMBER POSTON:     When did the gate  
9 open?

10                  MEMBER PRESLEY:    The gate opened in  
11 1949, March the 16th, I believe -- 19th and at  
12 that point, then, anybody could come in and  
13 work.

14                  So I would say that after the gate  
15 opened in '49, that probably, that is when  
16 things opened up for everybody to live there.

17                  CHAIRMAN ZIEMER:    Well, there were  
18 certainly a lot of private physicians in Oak  
19 Ridge in the '50s.

20                  Dr. Lockey.

21                  MEMBER LOCKEY:     I noticed in the  
22 review, that a person interviewed was a

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1 physician.

2 DR. HUGHES: That is correct.

3 MEMBER LOCKEY: And were you able  
4 to explore with him or her as to how the  
5 physicians were functioning at Oak Ridge  
6 Hospital at that time, in relationship to --  
7 he or she would probably be able to answer all  
8 of those questions.

9 DR. HUGHES: Yes, possibly. I did  
10 not specifically ask the question whether or  
11 not they were employed by a third entity and  
12 had this employment relationship that you  
13 described. I was under the impression they  
14 were employed by the hospital. And I think  
15 this physician that I interviewed actually was  
16 employed by the hospital.

17 I was more concerned with staff  
18 going to the ORINS hospital so I asked those  
19 questions. I did not ask the different  
20 question, whether or not, like who their  
21 actual employer was, actually.

22 MEMBER LOCKEY: Perhaps this

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1 physician could be a source to gather  
2 additional information so at least we can get  
3 the language correct that we cover those  
4 people that need to be covered.

5 CHAIRMAN ZIEMER: Michael Gibson.

6 MEMBER GIBSON: Yes, my question is  
7 a little different. It is more on the covered  
8 time period that NIOSH is proposing that the  
9 period ends in '59. I notice some of the  
10 references looked like -- that there was still  
11 an AEC Radioactive Material License until '63.

12 So, could you tell us why you are  
13 proposing to cut it off in '59?

14 DR. HUGHES: It is the end of the  
15 covered period. Under EEOICPA, the Oak Ridge  
16 Hospital is not covered past 1959. They did  
17 continue an AEC license because they were  
18 using radioisotopes.

19 CHAIRMAN ZIEMER: Yes, I believe  
20 and they had a separate facility then, in the  
21 early '60s and probably had a regular nuclear  
22 medicine type or sources as part of a regular

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1 hospital operation. But the period identified  
2 through the EEOICPA regs ends in '59. So that  
3 is -- we are locked into that in a sense, I  
4 believe. But the relationship with ORINS  
5 ended as well. Right?

6 DR. HUGHES: It ended with respect  
7 to it being a wing of the Oak Ridge Hospital,  
8 since the old hospital was, most of it was  
9 torn down and a new hospital was built. So  
10 there were separate facilities after that.

11 CHAIRMAN ZIEMER: Okay, any further  
12 questions?

13 We have a couple of options. One  
14 would be to have a motion to agree to or  
15 recommend this SEC. Another option would be  
16 to recommend that it not be granted. A third  
17 option would be to defer action by asking that  
18 a work group examine the issues that have been  
19 raised. I think if that were the case -- this  
20 is an 83.13 petition, which I believe goes to  
21 Dr. Melius' work group for further  
22 consideration.

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1                   So, any of those actions would be  
2 possible actions.

3                   Dr. Lockey?

4                   MEMBER LOCKEY: John, I was asking,  
5 what additional issues besides the ones that  
6 are on the table were you concerned about?

7                   CHAIRMAN ZIEMER: You are asking  
8 John Poston?

9                   MEMBER LOCKEY: Yes, John Poston.

10                  MEMBER POSTON: Well, because there  
11 is no evidence that they have been exposed,  
12 that works both ways, you know? And 1950 to  
13 1959, there were regulations in place for all  
14 exposures, including those in hospitals. And  
15 typically in a nuclear medicine facility, even  
16 back then, the exposures are quite low. I  
17 mean, you are talking a few millirads, not  
18 huge doses. The cancer therapy systems that  
19 were in use are in shielded rooms and no one  
20 is present, except the person receiving the  
21 treatment, as you probably know. So, those  
22 are not a source of exposure of the personnel.

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1           And the incidents of contamination  
2           and stuff like that, they shouldn't have  
3           happened but those are typically low level  
4           kinds of exposures that to me would indicate  
5           that there is not a huge risk. But I just  
6           don't know. I just don't know.

7           The fact that somebody did  
8           radiation measurements, somebody did the  
9           dosimetry, I was there. Well, I wasn't there  
10          in '59, but I was working in '59 and I know  
11          what we did in my facility and the kinds of  
12          dosimeters that we were required to wear and  
13          all of those kinds of things.

14          Oak Ridge Institute for Nuclear  
15          Studies was quite well run. The folks in  
16          there were quite versed in radiation  
17          protection procedures and so forth. But I  
18          don't have any evidence that there were any  
19          things amiss in terms of over-exposures or  
20          anything that would lead to the conclusion  
21          that we should vote in favor of this SEC.

22          I don't know. Maybe we should

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1 table this or ask NIOSH to look further. But  
2 I just don't see the evidence here that would  
3 cause me to vote in favor of this, at this  
4 point.

5 CHAIRMAN ZIEMER: Dr. Roessler.

6 MEMBER ROESSLER: I don't feel  
7 comfortable in voting against this and I don't  
8 feel comfortable in voting for it. I really  
9 think we should defer it. And because of  
10 that, I am going to move that we defer a  
11 decision at this point and form a work group  
12 to look at it.

13 I don't think it would take much  
14 time. I think some of the questions we  
15 brought up could be answered fairly quickly  
16 and we could move on with it fairly quickly.  
17 So that is a formal motion.

18 CHAIRMAN ZIEMER: You have heard  
19 the motion. Is there a second?

20 This is a motion to ask a work  
21 group to examine the issues that have been  
22 raised and to make a recommendation --

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1 MEMBER MUNN: Second.

2 CHAIRMAN ZIEMER: -- and seconded  
3 by Wanda Munn.

4 Yes, Josie Beach?

5 MEMBER BEACH: You did mention  
6 sending it over to Melius' work group. Was  
7 Gen suggesting a new work group or --

8 CHAIRMAN ZIEMER: Well, we have a  
9 work group that is specifically responsible  
10 for 83.13 petitions. Oh, no. He has got  
11 83.14s. I'm sorry.

12 MEMBER BEACH: That is what I was  
13 wondering.

14 CHAIRMAN ZIEMER: Yes. So, yes, I  
15 guess your motion would be to ask that a work  
16 group look at this.

17 Other discussion on the motion?  
18 Yes, Phil?

19 MEMBER SCHOFIELD: Just one quick  
20 thing. This is similar to, probably, some of  
21 the medical contracts and stuff they had at  
22 Hanford and Los Alamos. Have you looked to

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1 see how those were handled? Because AEC  
2 actually owned Los Alamos Medical Center and  
3 controlled all the personnel there up until  
4 1964. And so that would actually, they would  
5 fall under -- I mean, I would assume the same  
6 thing there that all these people would have  
7 to have been ultimately contractors of the  
8 Atomic Energy Commission.

9 And how that was handled given that  
10 AEC controlled all of these contracts, I think  
11 maybe some of those questions could be  
12 answered by looking at the Hanford and Los  
13 Alamos contracts.

14 CHAIRMAN ZIEMER: Of course the  
15 ultimate problem here is the inability to  
16 reconstruct dose due to lack of records. And  
17 if that can't be done, then we have kind of a  
18 default position. But there are some  
19 questions that have been raised. We have a  
20 motion on the floor to defer action until a  
21 work group has had a chance to consider these  
22 issues further, and perhaps with the

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1 assistance of our contractor and working with  
2 NIOSH, depending on how it goes, but that is  
3 the motion before us.

4 Further discussion pro or con?  
5 Wanda Munn.

6 MEMBER MUNN: My discussion is  
7 neither pro nor con but it would be  
8 beneficial, if we are in fact going to put  
9 together a work group, for the people sitting  
10 at this table right here to be very clear  
11 today about exactly what they are asking of  
12 the Work Group, because there does not appear  
13 to be an extensive number of issues here. The  
14 issues should be very clearly defined so that,  
15 unlike many work groups, there is not a body  
16 of additional information to be gleaned, not a  
17 number of major activities that have to be  
18 undertaken but more, a very precise level of  
19 information, a very precise type of  
20 information that we are seeking.

21 I would request that, if we do  
22 constitute a work group, we are very clear

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1 about what we expect their product to be and  
2 when.

3 CHAIRMAN ZIEMER: Thank you for  
4 that comment. And if the motion passes, what  
5 the Chair proposes is that, during our work  
6 session, we identify the Work Group membership  
7 and give it a specific charge relating to the  
8 items to be addressed.

9 Dr. Lockey?

10 MEMBER LOCKEY: From what I heard  
11 that John was talking about, John Poston was  
12 talking about, I guess you are requesting, the  
13 request is to go back and make sure there is  
14 no data available. Is that correct? Do a  
15 double search.

16 And by default, if no data can be  
17 found, then at that point, you can't even  
18 possibly consider reconstructing exposures.  
19 So, that is your main question. Do another  
20 search; make sure there is no data.

21 CHAIRMAN ZIEMER: Well, I think we  
22 will spend some time during our work session

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1 defining what the complete nature of the  
2 issues are because I want to keep us on  
3 schedule for other petitioners as we go  
4 forward this morning.

5 Mark, we will get another comment  
6 from you.

7 MEMBER GRIFFON: Yes, I mean I  
8 guess this is a comment in support of the  
9 motion, I suppose. I think that I don't  
10 disagree with Wanda. I think that there are  
11 probably just a couple of issues on the table.

12 I think the problem is that they are pretty  
13 broad. I mean, in my mind, it is defining the  
14 worker population question and maybe Jim and  
15 NIOSH is accurate that it can't be better  
16 defined but I think we want to look into that.

17 But also look into this; can we characterize  
18 the exposure potential better? And that is  
19 going back to the records. Was everybody  
20 equally likely to be, you know, equally likely  
21 to have a high exposure potential or, you  
22 know, in my mind I am thinking that we might

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1 be able to redefine the Class that way, if we  
2 had some more information.

3 So, it might not be that many  
4 issues but I think they are kind of broad.  
5 So, I understand Wanda's position but I just  
6 wanted to make that point.

7 CHAIRMAN ZIEMER: Thank you.  
8 Further comments? Are you ready to vote on  
9 the motion?

10 I guess let's go ahead and take a  
11 roll call vote and just go around the table.  
12 Poston?

13 MEMBER POSTON: Yes.

14 CHAIRMAN ZIEMER: Roessler?

15 MEMBER ROESSLER: Yes.

16 CHAIRMAN ZIEMER: Gibson?

17 MEMBER GIBSON: No.

18 CHAIRMAN ZIEMER: Munn?

19 MEMBER MUNN: Aye. Yes.

20 CHAIRMAN ZIEMER: Lockey?

21 MEMBER LOCKEY: Yes.

22 CHAIRMAN ZIEMER: Ziemer, yes.

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1 MEMBER GRIFFON: Yes

2 MEMBER SCHOFIELD: Yes

3 MEMBER CLAWSON: Yes

4 MEMBER BEACH: Yes

5 MEMBER PRESLEY: Yes.

6 CHAIRMAN ZIEMER: Okay, the ayes  
7 have it. The motion carries. And during our  
8 work group, we will establish the membership -  
9 - or during our work session, we will  
10 establish the Work Group membership and the  
11 charge or the issues to be dealt with, and  
12 hopefully, also a time table. I don't think  
13 we want to drag this one out. We need to come  
14 to closure as rapidly as possible.

15 And from a practical point of view,  
16 although this is not necessarily an overriding  
17 consideration, but we don't want to spend two  
18 years on something this size, that is a small  
19 population group that we need to bring to  
20 closure as rapidly as we can.

21 MEMBER BEACH: Paul just reminded  
22 me to get Dr. Melius' vote. Is that required?

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1 CHAIRMAN ZIEMER: Actually, we are  
2 not required to get Dr. Melius' vote on this,  
3 since it is not an action that goes to the  
4 Secretary, no.

5 I do know from talking with Dr.  
6 Melius that he also had concerns about the  
7 description of the population group itself.  
8 That is, the Class definition.

9 Okay, and thank you, Dr. Hughes,  
10 for your presentation and participation in  
11 this one.

12 DR. HUGHES: Thank you.

13 CHAIRMAN ZIEMER: Next, we will  
14 address the Baker-Perkins SEC petition, and  
15 LaVon Rutherford will make the presentation on  
16 the Evaluation Report on that one.

17 LaVon?

18 MR. RUTHERFORD: All right. Give  
19 me one moment here. Oh, there it is.

20 Okay, again, I am LaVon Rutherford.  
21 I am the Special Exposure Cohort Health  
22 Physics Team Leader for NIOSH, and I am going

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1 to talk about the Baker-Perkins Company SEC  
2 Petition evaluation.

3 This petition was received on  
4 September 9th of 2008. The petitioner had  
5 proposed a class of all employees who worked  
6 at Baker-Perkins facility in Saginaw, Michigan  
7 from May 14, 1956 through July 12 of 1968.

8 We qualified the petition for  
9 evaluation on March 13th of 2009. That basis  
10 was no external monitoring records exist for  
11 the Class.

12 The Department of Energy facility  
13 database actually indicates that May of 1956  
14 is the covered period for this site. However,  
15 documentation available to us indicates that  
16 the activity actually occurred from May 14th  
17 of 1956 through May 18th of 1956. Therefore,  
18 the Class that we qualified and evaluated was  
19 all AWE employees who worked at Baker-Perkins  
20 in Saginaw, Michigan from May 14, 1956 through  
21 May 18th of 1956.

22 A little background on Baker-

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1 Perkins. Baker-Perkins is located in Saginaw,  
2 Michigan. It was originally a company that  
3 developed industrial mixing machines for the  
4 food industry. However, in 1919, Baker-  
5 Perkins, and in later years, they kind of  
6 expanded their role from the food industry  
7 into the chemical industry and into other  
8 applications where they were developing mixers  
9 and equipment that could be used throughout  
10 industry.

11 In the 1950s, Baker-Perkins  
12 Chemical Machine business, offered products  
13 including heavy duty mixers for use in  
14 industrial applications. One of those was a  
15 Ko-Kneader. It is a heavy duty mixer. And  
16 for those of you that have the Petition  
17 Evaluation Report, the actual figure in the  
18 Petition Evaluation Report is incorrect. I  
19 have put the correct figure next to the report  
20 on the back table. I have also emailed the  
21 Board and I have also contacted the petitioner  
22 and let the petitioner know that we are

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1 revising the report to include the correct  
2 picture and that report should be issued today  
3 or tomorrow.

4 In 1956, the Ko-Kneader was tested  
5 for its use in mixing uranium compounds, which  
6 was orange oxide for National Lead of Ohio,  
7 which is the Fernald project. These tests  
8 were performed from May 14th through May 16th  
9 at the Baker-Perkins company and then the  
10 equipment was decontaminated and cleaned from  
11 May 15th through May 18th at the facility.

12 Basically, what they did was they  
13 brought material in. They were looking at  
14 mixing the orange oxide with an ammonia-water  
15 mixture to see if it could get the right  
16 consistency that they could use that Ko-  
17 Kneader in production applications.

18 Again, we looked at a number of  
19 sources for information on Baker-Perkins. We  
20 looked at existing Site Profiles, Technical  
21 Information Bulletins. We interviewed former  
22 employees. Existing claimant files, we looked

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1 at documentation provided by the petitioner,  
2 which was some good documentation, including  
3 the picture of the Ko-Kneader itself.

4 NIOSH Site Research Database, we  
5 did data captures, looked at the Baker-Perkins  
6 Group, Michigan Department of Environmental  
7 Quality, DOE Germantown, DOE Legacy  
8 Management, NNSA, the NRC, a number of  
9 sources.

10 We also went to Washington State  
11 University. We do DOE OpenNet searches on  
12 OSTI, internet search, CEDR database in  
13 various DOE locations and the National  
14 Academies Press.

15 We had eight claims for this site  
16 for Baker-Perkins. We have completed dose  
17 reconstructions. All eight of those claims  
18 meet the Class definition and we have  
19 completed dose reconstruction on all eight.  
20 None of the claims included internal dosimetry  
21 and none of them included external dosimetry.

22 A little more on the test, and I

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1 think I gave some of this already. Again, the  
2 test was conducted on May 14th through May  
3 16th. There were actually two different Ko-  
4 Kneaders in the process. They tested each  
5 application to see if they could, again, use  
6 this in a production operation by mixing this  
7 uranium trioxide or orange oxide with a water-  
8 ammonium solution. They tested the first Ko-  
9 Kneader and then they tested the second one.  
10 They were following applications.

11 When you actually looked through  
12 the operations itself, there is a description  
13 of the activity, of how it was performed, the  
14 start-stop times, when it was done, operation  
15 of each Ko-Kneader and the description on why  
16 they didn't use it, meaning, the process  
17 generated too much heat that they felt that  
18 they couldn't use it in a production scale.  
19 So again, that project report discusses that.

20 And then -- I'm sorry. Also from  
21 May 15th to May 18th, they decon-ed and  
22 cleaned the K Ko-Kneader, as well as the omega

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1 pump and routing pump that were used in the  
2 process. They used various techniques in  
3 decon-ing that, brushes, steam cleaning, and  
4 so on.

5 Internal sources of exposure.  
6 Again, the internal source of exposure would  
7 have been associated with loading the orange  
8 oxide into the mixer, operating the mixer,  
9 removal of the orange oxide and  
10 decontamination of equipment. Potential  
11 inhalation and ingestion from this work would  
12 pose an internal radiation hazard.

13 External sources of exposure; you  
14 had, initially, one to two drums of orange  
15 oxide. So, we have photon and beta exposure  
16 from that orange oxide and in the machine as  
17 well. The neutrons were determined not to be  
18 a significant source of external exposure.

19 Our data. Internal monitoring  
20 data. We have no bioassay data for the Class  
21 period. However, we have 24 general area  
22 samples that were taken during the entire

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1 process of operations over the five days,  
2 including operating -- loading the feed hopper  
3 with the orange oxide, operating the Ko-  
4 Kneader, as well as decontamination of the  
5 equipment. And we have 14 breathing zone  
6 samples.

7 Those breathing zone samples were  
8 where you would expect the highest exposures  
9 to occur: hand scooping of the orange oxide  
10 into the feed hopper of the Ko-Kneader for  
11 operations, as well as during decontamination  
12 of the equipment.

13 We have no film badge or pocket  
14 dosimetry data and no area radiation surveys.

15 However, you would not necessarily expect  
16 that for a five-day test activity.

17 Again, this is a two-prong test.  
18 You have seen this before. Is it feasible to  
19 estimate the level radiation dose of  
20 individual members of the Class? If that  
21 answer is yes, we don't answer the second one.

22 However, if it is no, is there a reasonable

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1 likelihood that such radiation dose may have  
2 endangered the health of members of the Class,  
3 is the second question.

4 We found that the available  
5 monitoring records, process description and  
6 source-term data are adequate to complete dose  
7 reconstruction with sufficient accuracy for  
8 the evaluated class of employees.

9 Our feasibility approach, we took  
10 the general area air sample data, developed a  
11 distribution, as well as taking the breathing  
12 zone data and developing a distribution.

13 Geometric mean and standard  
14 deviation were established. The breathing  
15 zone data, geometric mean, can be used to  
16 bound the internal exposure. However,  
17 Appendix P of Battelle-6001, which is actually  
18 for Baker-Perkins, does use that exact data  
19 but it looks closer at what the workers'  
20 description, the work activity, the location.

21 So there is places in that process that allow  
22 it to reduce that exposure, depending on if

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1 you were an operator operating equipment or if  
2 you were a clerk at the facility.

3 So again, the breathing zone data  
4 bounds it. But Appendix P provides additional  
5 applications. Ingestion intakes are derived  
6 from deposition and re-suspension factors  
7 defined in 6000 and 6001 of TBD.

8 The external exposures can be  
9 bounded by assuming a continuous exposure for  
10 the five to the two barrels of orange oxide.  
11 Again, for the duration of the activity.  
12 However, again, Appendix P looks at a little  
13 more in detail of -- it actually uses a  
14 surrogate operation looking at uranium  
15 refining operations and using the external  
16 exposures from those activities, which are  
17 production-scale activities which you would  
18 anticipate being higher level than these small  
19 tests.

20 TBD-6001 provides skin dose  
21 estimates that are used for Appendix B, and  
22 the bounding external dose, again, as I

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1 mentioned before, can also be determined by  
2 assuming continuous exposure to the two drums.

3 Our feasibility determination was  
4 that we can do dose reconstruction, internal  
5 and external, and our recommendation is for  
6 the period of May 14, 1956 through May 18 of  
7 1956. We find that dose estimates can be  
8 reconstructed for compensation purposes. So  
9 we say it is feasible, and health  
10 endangerment, we don't have to answer that.

11 Questions?

12 CHAIRMAN ZIEMER: Thank you, LaVon.

13 Let me ask first if any of the petitioners  
14 are on the line and wish to make a statement.

15 MR. D. BRENNAN: Yes.

16 CHAIRMAN ZIEMER: Yes, please --

17 MR. D. BRENNAN: I am on the line  
18 and would like to make some statements.

19 CHAIRMAN ZIEMER: Yes, please  
20 identify yourself and then proceed.

21 MR. D. BRENNAN: My name is David  
22 Brennan. I am the son of Clara Brennan, who

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1 was an employee of the Baker-Perkins Company  
2 during this covered time period. And -- go  
3 ahead.

4 MR. S. BRENNAN: My name is Stephen  
5 Brennan and I am a son of an employee of  
6 Baker-Perkins.

7 MS. MURASKY: And my name is Amy  
8 Murasky Brennan, daughter of Clara Brennan.

9 CHAIRMAN ZIEMER: And thank you.  
10 And do any of you have a statement to make  
11 then?

12 MR. D. BRENNAN: Yes, I would like  
13 to make a statement. I am David Brennan.

14 CHAIRMAN ZIEMER: David, please  
15 proceed.

16 MR. D. BRENNAN: Yes, I have some  
17 documents in front of me and I don't know if  
18 you have these in front of you as well, but I  
19 will be referencing them. One is the  
20 Evaluation Report summary SEC-00128 Baker-  
21 Perkins. This is the document that Mr.  
22 Rutherford has just reviewed. The other is

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1 the analytical data sheet, which is where a  
2 lot of this information came from. This  
3 analytical data sheet is the only document we  
4 have that reported on or discussed the testing  
5 and cleanup of this material during the period  
6 of the 14th to the 18th in 1957.

7 What Mr. Rutherford did was sort of  
8 give us a good overview. However, the  
9 conclusion of the Evaluation Report summary we  
10 feel is incorrect. The essential part of this  
11 report is they said that this whole period  
12 took place in 1956 between the 14th and the  
13 18th. And during this period of time, there  
14 was testing and then there was some cleanup,  
15 and that ended the exposure levels of one to  
16 two barrels.

17 However, as we look over these  
18 documents -- and we did this in our testimony  
19 that we gave on July 22nd of 2008, which we  
20 feel was probably ignored, because we did  
21 point out some serious issues that we believe  
22 would lead to an extended period of exposure,

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1 as a result of the method of testing and most  
2 certainly the method of cleanup, which did not  
3 clean up the area. Indeed, our contention is  
4 that led to a greater exposure for a longer  
5 period of time.

6 It essentially concerned the  
7 loading of the orange oxide material and how  
8 it was cleaned up. And for this, I want to  
9 look at the analytical data sheet. This is  
10 the only document or witness of what happened  
11 during this period of time and how it was  
12 conducted. And it sort of discusses what they  
13 did and how they did it. It talks about the  
14 sample numbers. It gives hours and it also is  
15 a flowmeter report where apparently they were  
16 measuring the air that was being generated in  
17 the area. They were measuring what was in the  
18 atmosphere. However, there were written  
19 observations from the tester, from the  
20 individual who was doing this, and some of  
21 these are rather disturbing.

22 To begin with, in the very first

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1 page of it, where it talks, the 1956 Baker-  
2 Perkins Corporation, it says samples of water  
3 discharged to river during steam cleaning of  
4 equipment. This indicates to me that they  
5 were steam cleaning the orange oxide from the  
6 equipment. When they had the leftover water,  
7 they allowed it to go into the drains, which  
8 allowed it to go into the river. This is the  
9 very first problem we have. As we go through  
10 this, there is a whole series of things which  
11 I detailed during my testimony of July 22nd.  
12 But I will touch upon a few of these things  
13 right now. Okay?

14 In 69-05, they say the operator was  
15 very careful in scooping material from the  
16 drum to the hopper. And the material he is  
17 referring to here, we are assuming, is the  
18 orange oxide from one of the two drums.  
19 However, no matter how careful, the scooping  
20 produces a very fine, very visible dust which  
21 disperses in the air around the machine.

22 Now, we have a problem with some of

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1 the accounting for the orange oxide dust. In  
2 all of the reports that we have, they  
3 reference one to two barrels. They are not  
4 specific of how many barrels it is. Mr.  
5 Rutherford discussed two barrels but some  
6 reports said between one and two barrels.  
7 However, there is no weight of the barrels.  
8 So we don't know how many pounds or kilograms  
9 or however you want to measure it, whether in  
10 metric or whatever. So we don't know how much  
11 material was sent to Baker-Perkins. And the  
12 biggest concern we have is we don't know how  
13 much materials were returned.

14 And we believe that during the  
15 course of this testing and cleaning, a great  
16 deal of this material was exposed into the  
17 atmosphere. This dust was allowed to blow  
18 around the facility and this dust remained in  
19 the facility, on the equipment, on the floors,  
20 on the walls, and when the doors and windows  
21 were opened, as I will point out later, blown  
22 out into the environment around in the

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1 neighborhood, and also some what may have been  
2 discharged into the river. Okay?

3 Let's move on in this thing. In  
4 69-06, the Ko-Kneader area during calibration  
5 of Omega feeder, material fed through the  
6 feeder and dropped in the cardboard container  
7 from a sampler shoot, only visible dust when a  
8 box was removed and emptied.

9 So basically, they are using this  
10 material, they are dumping it into cardboard  
11 boxes from the barrels. So some of it was  
12 lost, it was this dumping into cardboard boxes  
13 that led to dust. Okay?

14 They had a waterline plugged up on  
15 69-08. There was a discharge causing  
16 considerable dust. So once again, throughout  
17 this entire operation, dust, an orange oxide  
18 dust was blowing around the area which is in  
19 this facility.

20 69-10, some dusting as material  
21 falls in the drum on top of the dry material.

22 A vacuum hose from the dispenser, apparently

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1 that is some kind of vacuum, was inserted into  
2 drum to reduce the amount of escaping dust,  
3 but once again, a vacuum cleaner works where  
4 you suck something out into the vacuum  
5 cleaner, and then there is some sort of a  
6 filter, presumably, but then other material is  
7 vented into the air in a forceful way. We  
8 didn't know what kind of filter this vacuum  
9 had. It may have cut down on some of the dust  
10 but, nevertheless, blew other parts of it  
11 around into the building, around the area.  
12 Okay?

13 So, and they talk about more  
14 dusting. And it goes through this. And  
15 although I went into detail on my July 28th  
16 (sic, 22nd) testimony, I just will sort of  
17 touch on it because I know we have limited  
18 time here. But once again, there is hand  
19 scooping the material, dust flows, respirators  
20 were worn by some of them during part of it  
21 but they were not worn by employees during the  
22 rest of it.

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1           And I want to go right to the very  
2 back here because they talked about, in 69-19,  
3 talking about the cleanup and the way in which  
4 they went about cleaning it up. They pulled  
5 this big machine apart and they ground and  
6 chipped loose material on this thing but they  
7 also put it on a piece of paper on the floor.

8           So, you know, I would wonder  
9 whether this was an appropriate cleanup  
10 operation, where you have orange oxide dust  
11 encrusted onto a machine and so, in order to  
12 clean it up, you take employees who are not  
13 covered with respirators or gloves or any kind  
14 of hazmat outfit. They pull this thing out of  
15 the machine. They set it on a piece of paper  
16 on the floor, then they proceed to chip and  
17 grind this material off.

18           Some dumping was done during sample  
19 69-31. We don't know whether that was dumped  
20 on the floor or into a bag or into a cardboard  
21 box but he did think it was important enough  
22 for him to say some dumping was done. Okay?

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1 Once again, they talked about vacuums.

2 But finally, I would like to point  
3 out 69-40 and this is most disturbing of all.

4 They talk about this part is also with the  
5 cleanup of the machine where he notes this was  
6 probably the dustiest of the decontamination  
7 job. Doors and windows were opened and  
8 personnel wore respirators.

9 It seems to me that during the  
10 cleanup and what they called decontamination  
11 of this machine, they opened up the doors and  
12 windows of the building because it was so  
13 dusty that they opened the doors and windows  
14 to allow air to come in and move this dust  
15 around the building away from the area that  
16 they were working in onto the floors, the  
17 walls, the machines, and to the outside  
18 environment.

19 I do not believe that by any -- I  
20 don't know what standards they had in 1956 but  
21 I would think today, if somebody said well, we  
22 sent between one and two barrels of orange

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1 oxide somewhere. We don't know what it  
2 weighed. We don't know what we sent. We  
3 don't know what we got back. We do know that  
4 when they cleaned it there was a considerable  
5 amount of dust vented into the building to the  
6 point where they had to open windows and doors  
7 and then all of this dust was floated around.

8 Now, in the report that they gave  
9 us, this evaluation summary, they said, and  
10 this was from Mr. Stout and a Mr. Baumann and  
11 also in the evaluation summary, the allegation  
12 or what they say here is that the exposure was  
13 only between the 14th and the 18th, that the  
14 machinery was cleaned, and after the machinery  
15 was cleaned and decontaminated, this was all  
16 sent back and everything was fine.

17 Well, we contend, in reading this  
18 analytical data sheet, reading all of this  
19 information that they have available to them,  
20 they ignored the fact that this dust, this  
21 material was blowing around the Baker-Perkins  
22 facility and that it remained there, even

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1 after the machines had been what they called  
2 decontaminated.

3           They don't know how much orange  
4 oxide was sent and they don't know how much  
5 was sent back. So the problem is, how do you  
6 have a dose reconstruction? Would people  
7 continue to be exposed to it with dust on the  
8 floors, on the walls, in the surrounding  
9 areas? We don't know what the quantity of  
10 dust was or orange oxide was. We don't know  
11 how long it remained there. It could have  
12 remained there for weeks, for months, for  
13 years. If we took a Geiger counter there,  
14 perhaps we could even pick up traces of it  
15 today.

16           So the dose reconstruction that  
17 they gave us in that report was, well, things  
18 were pretty dusty between the 14th and the  
19 18th but that ended the exposure level. I  
20 believe that the evidence -- we believe that  
21 the evidence shows that this material was  
22 blown around the area and there was no effort

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1 to clean up the facility itself. There was  
2 only an effort to decontaminate and clean up  
3 the two machines. But in the process of  
4 cleaning up these two machines, there was a  
5 considerable amount of material, an unknown  
6 amount of material that was distributed on the  
7 site at Baker-Perkins.

8 CHAIRMAN ZIEMER: Okay, thank you  
9 very much. Do any of your other colleagues  
10 there have comments or statements?

11 MS. MURASKY: Yes, this is Amy  
12 Murasky.

13 CHAIRMAN ZIEMER: Amy.

14 MS. MURASKY: I would just like to  
15 add that I had provided a Saginaw News  
16 article, which was from the Vice President of  
17 Baker-Perkins, and he had direct quotes that  
18 he was not even aware of the project that was  
19 going on in his plant.

20 I don't believe any of the  
21 employees were aware of what was actually  
22 going on in Baker-Perkins. And that is also

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1 proven by there was no dose monitoring.  
2 Employees were not given personal protective  
3 equipment to wear.

4 And I would just ask that the  
5 Advisory Board make consideration for this  
6 Special Exposure Cohort and we ask for a  
7 favorable outcome on this.

8 CHAIRMAN ZIEMER: Okay, thank you  
9 very much. Any additional comments?

10 MR. S. BRENNAN: Just that the  
11 exposure rates were not a finite number. It  
12 did not just happen one day and then five days  
13 later end. It is, by the evidence that is  
14 there and the only documents and that was done  
15 by the inspector written by the people who  
16 were there, shown that there was a great deal  
17 of dust that contaminated the entire building  
18 and possibly the drain system. And that the  
19 form of just taking a number for a few days'  
20 exposure probably is not a very good  
21 reconstruction. Thank you.

22 CHAIRMAN ZIEMER: Okay. And was

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1 that Stephen speaking?

2 MR. S. BRENNAN: Yes, it was. Yes,  
3 sir.

4 CHAIRMAN ZIEMER: Okay, Stephen  
5 Brennan. Thank you, Stephen.

6 Now let me open the floor here for  
7 questions. I want to start with kind of a  
8 theoretical question, LaVon.

9 Let's suppose you found that you  
10 could not reconstruct dose. You have a five-  
11 day period. It seems to me it is going to be  
12 pretty difficult to squeeze the 250-day period  
13 into that. Would you not automatically find  
14 that there was no health risk in this case?  
15 Or obviously you could add it to another  
16 partial --

17 MR. RUTHERFORD: Right. As you are  
18 saying, if we found that we could not  
19 reconstruct dose, we would actually make a  
20 class for this period. However, no one would  
21 be compensated unless they had aggregated days  
22 from another facility to aggregate up to 250

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1 days.

2 CHAIRMAN ZIEMER: So health  
3 endangerment, with this restrictive five-day  
4 period, would automatically default to no  
5 health endangerment, under the present way you  
6 operate, unless it was added to exposure at an  
7 additional site that was an SEC.

8 So as a practical matter you would  
9 end up then having to do dose reconstructions  
10 in any event.

11 MR. RUTHERFORD: That is correct.

12 CHAIRMAN ZIEMER: Right. Okay, I  
13 just wanted to sort of understand --

14 MR. RUTHERFORD: Yes.

15 CHAIRMAN ZIEMER: -- the converse  
16 of what the recommendation is.

17 MR. D. BRENNAN: May I make a  
18 question here?

19 CHAIRMAN ZIEMER: Yes.

20 MR. D. BRENNAN: I am David  
21 Brennan. The point we are trying to make here  
22 is the cleanup was so ineptly done that either

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1 they didn't know what they were working with  
2 or they certainly weren't trained in the  
3 material. But nevertheless, our contention is  
4 if you are going to do any kind of dose  
5 reconstruction, you cannot limit it just to  
6 that five-day period.

7 It was clear from the document that  
8 we have, from a witness who was there who  
9 described the process that this material was  
10 handled in, and the fact that we don't know  
11 how much came there and certainly we have no  
12 idea how much was sent back, that it is likely  
13 that there was material that remained there  
14 that these people would be exposed to.

15 So if we want to go ahead and do a  
16 dose reconstruction, it would not only include  
17 five days of intense exposure of breathing  
18 clouds of this material, handling it with bare  
19 hands, not having any protective equipment,  
20 but also the employees of the plant wandering  
21 around in the plant doing their duties,  
22 stepping on this stuff, touching this stuff,

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1 and inhaling this stuff for an extended period  
2 of time.

3 CHAIRMAN ZIEMER: Yes, we  
4 understood that point. My question really had  
5 to do with how NIOSH was evaluating this  
6 particular thing in terms of the five-day  
7 issue. But we understand your point is that,  
8 beyond the five days, there was perhaps  
9 additional contamination throughout the plant  
10 that may have covered a much more extensive  
11 period of time. So we understand that point,  
12 yes.

13 Brad Clawson?

14 MEMBER CLAWSON: LaVon, what was  
15 the product that they sent to them? There has  
16 got to be shipping records.

17 MR. RUTHERFORD: Yes.

18 MEMBER CLAWSON: Okay, what was it  
19 enriched to?

20 MR. RUTHERFORD: You know, we do  
21 not know the enrichment of the orange oxide  
22 that was sent to them. All we know is the

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1 description of it being orange oxide. So we  
2 do not know the actual enrichment that was  
3 sent.

4 MEMBER CLAWSON: Now, this was  
5 shipped up to the plant?

6 MR. RUTHERFORD: Yes, it was  
7 shipped from -- actually, it was taken from  
8 Fernald. I mean, we could actually look at  
9 NLO records to see at that time. However, we  
10 did do a detailed search of our Fernald  
11 records on Baker-Perkins, as well. But you  
12 could look at what was being produced in 1956  
13 at Fernald from the orange oxide perspective.

14 So that is not an issue from a dose  
15 reconstruction perspective. I mean, we could  
16 deal with that, if that was a question.

17 MEMBER CLAWSON: Well, the point  
18 that I am getting about is we have seen that  
19 you guys have got pretty close details for  
20 everything else there, Fernald and so forth.  
21 We should have been able to see what product  
22 was sent up there. How much was sent up

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1 there. And actually --

2 MR. RUTHERFORD: The Fernald  
3 records had the same things that we had that  
4 we had actually received through other sources  
5 which was the actual trip, which the report of  
6 the test operation itself, as well as nine  
7 pages of air sampling data as well as the  
8 water samples.

9 Air sampling data was taken by NLO.

10 It was NLO employees that did the work, that  
11 did the air samples, brought the air samples  
12 back, and analyzed the samples.

13 MEMBER CLAWSON: And the  
14 respirators and stuff, they --

15 MR. RUTHERFORD: There is an  
16 indication, if you look at the datasheets, of  
17 who was wearing respirators, when the feed  
18 hoppers were loaded.

19 You know, again, we don't take into  
20 account respiratory protection when we do dose  
21 reconstruction anyway. We assume no  
22 respiratory protection. So the intakes that

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1 are given to the employees for dose  
2 reconstruction are based on no protection  
3 factors whatsoever. We have had that practice  
4 from the beginning.

5 So if you look at the datasheets,  
6 and I agree with the petitioner on the  
7 descriptions that are there. However, if you  
8 look at the operations, the operations, the  
9 14th and the 15th, two to three hours per day  
10 were the operations. You looked at the  
11 general area where air samples were run for  
12 short periods of time during those operations  
13 to get that general area activity. The  
14 deposition that would potentially occur beyond  
15 the machine and the deposition on the -- is  
16 going to be minimal over a five-day activity,  
17 especially when your only production period is  
18 roughly three to four hours per day.

19 And also remember, if you look at  
20 the picture, this is a rotary-feed type of  
21 mixer. And it was mixed in a water ammonia  
22 solution. So again, you know, there was

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1 airborne. You know, I am not going to sit  
2 there and say there wasn't airborne  
3 contamination. There clearly was. You know,  
4 the breathing zones indicated to the workers  
5 that were loading the feed hopper, the general  
6 area samples indicate there was some elevation  
7 in the general area. However, we can  
8 reconstruct dose during that five-day period  
9 and we feel that the deposition beyond that  
10 and the indication from the decontamination  
11 cleanup is that there is no residual period  
12 beyond that.

13 MEMBER CLAWSON: Thank you.

14 CHAIRMAN ZIEMER: Wanda Munn and  
15 then Mark Griffon.

16 MEMBER MUNN: It sounds as though  
17 the concern here is that the dose rates may  
18 have been high enough that individuals who  
19 were in the area following the actual period  
20 of activity may have been exposed at some  
21 level that would be of concern.

22 Is the air sample data that you

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1 have adequate to identify that any residual  
2 contamination that might have existed would  
3 not be a significant hazard to other workers?

4 MR. RUTHERFORD: We could take the  
5 air sample data and, again, and this is beyond  
6 the five-day evaluation of dose reconstruction  
7 which we have said we can do dose  
8 reconstruction. If, you know, for practical  
9 purposes we could take the air sample data,  
10 the general area air sample data, assume a  
11 deposition rate, and then assume a re-  
12 suspension rate to come up with a potential  
13 airborne concentration that would have been  
14 exposed to the workers post-May 18th. And  
15 that would obviously decay at a rapid rate,  
16 based on that re-suspension, as well. Because  
17 as it is re-suspended and moved, it is going -  
18 - there is a removal constant there, as well.

19 Now, you know, I believe that can  
20 be done but, you know, my professional  
21 judgment is that the actual dose to an  
22 individual from the re-suspension of that

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1 material is going to be extremely low. You  
2 know, I can't give a number to it because I  
3 haven't done the numbers.

4 CHAIRMAN ZIEMER: Mark Griffon.

5 MEMBER GRIFFON: Yes, I wanted to  
6 go back to what you were asking about, Paul.  
7 I am trying to understand why the defined time  
8 period is, like, for 12 years. It goes from -  
9 -

10 MR. RUTHERFORD: Well actually the  
11 petitioner petitioned originally -- is that  
12 what you are getting at?

13 MEMBER GRIFFON: The Class  
14 definition.

15 MR. RUTHERFORD: The petitioner  
16 petitioned 12 years --

17 MEMBER GRIFFON: Oh, okay.

18 MR. RUTHERFORD: -- and that was  
19 pretty much based on the employees operating  
20 time period at the facility, and petitioner  
21 will correct me if I am wrong.

22 MEMBER GRIFFON: Until '68. Okay.

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1 MR. RUTHERFORD: However, the  
2 covered period, the DOE covered period is May  
3 of 1956.

4 MEMBER GRIFFON: Okay.

5 MR. RUTHERFORD: We have actually  
6 changed, you know, what we qualified it was  
7 the May 14th through May 18th.

8 MEMBER GRIFFON: So DOE only  
9 covered as one --

10 MR. RUTHERFORD: Yes, DOE has only  
11 covered May of 1956.

12 MEMBER GRIFFON: So then your 250  
13 analysis stands. Okay, I just wanted to  
14 clarify that.

15 CHAIRMAN ZIEMER: The DOE covered  
16 period is the five days?

17 MR. RUTHERFORD: Actually the DOE  
18 covered period, if you look at it, it just  
19 says May of 1956. It does not break it down  
20 to the May 14th through May 15th as we defined  
21 it.

22 CHAIRMAN ZIEMER: So at most, --

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1 MR. RUTHERFORD: At most, it is one  
2 month.

3 CHAIRMAN ZIEMER: -- you could  
4 evaluate 30 days, --

5 MR. RUTHERFORD: That is correct.

6 CHAIRMAN ZIEMER: -- which would  
7 only give you 12 days beyond the work period  
8 or the sort of active period when the work was  
9 done for considering --

10 MR. RUTHERFORD: Exactly, because  
11 you start on May 14th and end at the --

12 CHAIRMAN ZIEMER: -- area  
13 contamination of the type described by the  
14 petitioners.

15 Dr. Lockey.

16 MEMBER LOCKEY: Do you actually  
17 have environmental monitoring data after the  
18 decontamination was completed, exit sampling?

19 MR. RUTHERFORD: Excuse me? Say  
20 that again. I'm sorry.

21 MEMBER LOCKEY: After the  
22 decontamination was completed, do you have a

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1 final set of data?

2 MR. RUTHERFORD: No. That is  
3 another -- there is no post-decon  
4 contamination survey of the equipment. There  
5 is clear description of how they decon-ed the  
6 equipment and what they did to decon the  
7 equipment, but there is no post-decon survey.

8 MEMBER LOCKEY: One other question.  
9 Do you know what this equipment was used for  
10 afterwards?

11 MR. RUTHERFORD: By indications of  
12 the reports read and as well as the -- there  
13 is a discussion with an employee. Now, this  
14 employee worked post this period: 1970. This  
15 employee, one, indicated as long as we are  
16 into this discussion, the samples indicate  
17 that they were taken in Building 15 of the  
18 laboratory, which is supposedly where the  
19 tests were run. And the employee indicated  
20 that there was an old laboratory building and  
21 it was numbered. And in that old laboratory  
22 building, there were Ko-Kneaders that were

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1 used as tests for bringing in potential buyers  
2 to test the equipment.

3 MEMBER LOCKEY: So the assumption  
4 is this equipment was used afterwards.

5 MR. RUTHERFORD: Yes, it was  
6 probably used as additional testing  
7 afterwards, for future buyers.

8 CHAIRMAN ZIEMER: LaVon, if you  
9 were reconstructing for a claim, --

10 MR. RUTHERFORD: Yes?

11 CHAIRMAN ZIEMER: -- would you only  
12 use the five-day active period or would you do  
13 what you just described for the rest of the  
14 month of May, using -- because you have air  
15 sampling data during the decontamination  
16 period. So you know what the levels were.

17 MR. RUTHERFORD: Right.

18 CHAIRMAN ZIEMER: And the  
19 petitioner is probably right. There has got  
20 to have been some residual contamination  
21 around. Intuitively, it seems like it would  
22 be low but based on the area air samplers, one

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1       could --

2                   MR. RUTHERFORD:       Do as I said,  
3       deposition/re-suspension.

4                   CHAIRMAN    ZIEMER:       -- make a  
5       determination       of       the       general       area  
6       contamination and using re-suspension factors  
7       could calculate if there were indeed  
8       additional dose. I mean, is that what would  
9       be done?

10                   MR. RUTHERFORD:   Yes, if we --

11                   CHAIRMAN    ZIEMER:       Or would you do  
12       it in sort of a modeling way and say okay, it  
13       only represents an increase of some fraction  
14       of a percent or whatever it might be over the  
15       main dose?

16                   MR. RUTHERFORD:   What we would do  
17       is -- right. We would look at actually what  
18       the actual potential doses were. And if those  
19       potential doses were at a de minimis level,  
20       then we would say that it's not -- no need to  
21       include them.

22                   CHAIRMAN    ZIEMER:       Robert Presley.

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1                   MEMBER PRESLEY: Let me see if I am  
2 right. Orange oxide is a product of mostly U-  
3 238, with less than 0.7 percent enrichment.

4                   MR. RUTHERFORD: Yes, you are  
5 correct. In fact, it is typically considered  
6 normal.

7                   MEMBER PRESLEY: Right. Exactly.

8                   MR. RUTHERFORD: Natural.

9                   MEMBER PRESLEY: Natural uranium.

10                  MR. RUTHERFORD: Yes.

11                  MEMBER PRESLEY: Which you could  
12 find in paints on bridges. You could find in  
13 pottery, in glaze. So you know, we are not  
14 talking about a tremendous amount of uranium  
15 floating around in the air and things like  
16 that when they did this.

17                  CHAIRMAN ZIEMER: Josie Beach.

18                  MEMBER BEACH: I just wanted to  
19 make sure I am clear. The last air sampling  
20 was done on May 18th. Is that correct? Or  
21 was there sampling done after that?

22                  MR. RUTHERFORD: May 18th was the

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1 last sample. You will see that the samples  
2 were read on May 22nd, or 21st or 22nd. And  
3 that is, I am sure, the traveling distance or  
4 the actual documenting of when they actually  
5 read the samples.

6 MEMBER BEACH: Okay, and then dose  
7 was assigned to the personnel based on the air  
8 sampling?

9 MR. RUTHERFORD: Yes. What was  
10 done again, was we used the air sample data.  
11 We established a distribution. All right?  
12 Because one, we don't know which, you know, we  
13 have to establish distribution to give to all  
14 employees that are coming in here.

15 So, we established a distribution  
16 for the general area samples. We established  
17 a distribution for the breathing zone.  
18 Depending on if you were an operator, you  
19 would get the way Appendix K identifies it.  
20 You get a percentage of the breathing zone  
21 activity and a percentage of the general area  
22 activity.

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1           And then a clerk or a supervisor  
2 would get just general area activity  
3 distribution and so on. And so that is how it  
4 is set up in Appendix P.

5           MEMBER BEACH: And then a final  
6 question. How many operators were established  
7 out of the eight? Do you know how many?

8           MR. RUTHERFORD: I do not know. I  
9 didn't go back and -- I mean, I looked at the  
10 claims but I didn't look at what each person  
11 was identifying.

12           MEMBER BEACH: Thanks.

13           CHAIRMAN ZIEMER: Dr. Lockey? No?

14           MEMBER LOCKEY: Sorry.

15           CHAIRMAN ZIEMER: Additional  
16 questions? Mark.

17           MEMBER GRIFFON: I just wondered  
18 if, through your interviews, or maybe the  
19 petitioner can shed some light on this. Were  
20 there any other operations? This is a very  
21 short contract, obviously. What was the net  
22 result? They tested it in five days and

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1 Fernald said we love it and we'll take ten?

2 MR. RUTHERFORD: No. Actually what  
3 happened was the operation occurred as, again,  
4 they used a P and a K Ko-Kneader in the  
5 operation. The first two, few tests were just  
6 to see if they could get the right moisture  
7 content and the right mixture of the process.

8 After that, they tried to extend because they  
9 noticed during that process that they were  
10 getting a heating of the material. The actual  
11 -- the product that was coming out was heating  
12 up. So they started being concerned with the  
13 friction and generation that was inside the  
14 machinery if they were going to be able to  
15 maintain proper temperature for a production  
16 scale of this.

17 And so ultimately, they ended up  
18 doing on the last test, they did a longer  
19 test, which was roughly three hours and  
20 something. I can't remember. And right at  
21 the three-hour period, they recognized that  
22 they were not going to be able to maintain

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1 temperature with that equipment without some  
2 major modification and ultimately, the  
3 decision was made not to use that.

4 MEMBER GRIFFON: You might have  
5 said that earlier. I was probably reading.

6 And did anyone run -- I mean, just  
7 looking at the numbers from the breathing zone  
8 air samples and stuff, did you run a reality  
9 check against --

10 MR. RUTHERFORD: Today's standards?

11 MEMBER GRIFFON: Well, no. Just to  
12 look and see if you had such a source term,  
13 would you get values in that vicinity? They  
14 look --

15 MR. RUTHERFORD: Well, you know, it  
16 is kind of hard because you didn't have  
17 another piece of machinery.

18 MEMBER GRIFFON: It was hard to  
19 simulate that operation. Right? Yes.

20 MR. RUTHERFORD: -- simulate that  
21 activity. Wherever the GA is established,  
22 exactly, you know, and the breathing zone

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1 data.

2 So, yes.

3 MEMBER GRIFFON: But I am just  
4 thinking we know quite a bit about uranium  
5 operations so I thought you probably could --

6 MR. RUTHERFORD: Well, we did use  
7 surrogate data for the external portion of it,  
8 and Appendix K or Appendix P.

9 MEMBER GRIFFON: And that is  
10 Appendix B of 6001?

11 MR. RUTHERFORD: P, of Battelle-  
12 6000.

13 CHAIRMAN ZIEMER: Additional  
14 questions or comments?

15 MEMBER GRIFFON: The only other  
16 thing I would say, Paul, for us to consider is  
17 that we are still reviewing TBD-6000. So, and  
18 that is referenced in here, you know, being  
19 used. So, I don't know how that impacts our  
20 decision.

21 CHAIRMAN ZIEMER: There are, I  
22 think, only a couple outstanding issues on

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1 TBD-6000. Certainly, that should be close to  
2 closure. But this would be an option for the  
3 Board, if you wanted to defer final action on  
4 this until TBD-6000 review has been closed.  
5 That is an option.

6 Another option would be to accept  
7 the recommendation or to not accept the  
8 recommendation. Wanda Munn.

9 MEMBER MUNN: In light of the small  
10 number of days involved and in light of the  
11 small amount of natural uranium involved,  
12 given that what we know now makes it possible  
13 for us to provide a reasonable and defensible  
14 bounding case for any of the individuals who  
15 were involved in this operation, I would like  
16 to move that we accept the NIOSH  
17 recommendation to not accept this SEC and to  
18 allow NIOSH to continue their dose  
19 reconstruction activities.

20 MEMBER PRESLEY: Second.

21 CHAIRMAN ZIEMER: There has been a  
22 motion and seconded by Mr. Presley.

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1 Discussion on the motion? Again, I  
2 guess I would simply point out that even if  
3 this were expanded beyond the week that is  
4 shown, it would only expand through the month  
5 of May, based on the DOE determination of the  
6 period, as I understand it.

7 And I am not sure, LaVon, if that  
8 would make any difference anyway, if you  
9 called it the month of May. And I am not  
10 proposing that you do.

11 MR. RUTHERFORD: Right.

12 CHAIRMAN ZIEMER: Because the first  
13 part of the month there was nothing and you  
14 only had 12 days of residual.

15 MR. RUTHERFORD: Are you asking  
16 whether we will or will not?

17 CHAIRMAN ZIEMER: It was more  
18 rhetorical. No, I wasn't asking if you would.

19 I was just sort of speculating that had it  
20 been defined as we got it from DOE as the full  
21 month. It makes very little difference, it  
22 appears.

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1                   MEMBER GRIFFON:    Yes, I was just  
2 going -- I mean, I think --

3                   CHAIRMAN ZIEMER:    Well, because  
4 either way, you don't come close to 250 days.  
5       So, and SEC doesn't do much for these folks,  
6 in any event.

7                   MEMBER GRIFFON:    Yes.  No, I was  
8 just going to ask and you may have answered  
9 this, too.  But I was kind of reading while  
10 you were presenting.  But the D&D, the  
11 petitioner seemed to be questioning --

12                  MR. RUTHERFORD:  Yes.

13                  MEMBER GRIFFON:  -- the adequacy of  
14 the D&D.  Do you have measurements from the  
15 D&D?

16                  MR. RUTHERFORD:  Yes, that is what  
17 I mentioned, that we do not have post-  
18 decontamination measurements of the equipment.  
19       We have a detailed description of what they  
20 were doing and how they were doing it.  And  
21 there were air samples taken during the  
22 activity but we do not have a post-decon

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1 survey.

2 MEMBER GRIFFON: I mean, I guess, I  
3 am really actually speaking in support of the  
4 motion because I think that -- but I do want  
5 to -- you know, I mean, the only qualifier I  
6 have, I guess on my statements would be that,  
7 you know, if -- I mean, the petitioner can  
8 still pursue other information --

9 MR. RUTHERFORD: That is correct.

10 MEMBER GRIFFON: -- and get it to  
11 DOE to expand the covered period, if there is  
12 a residual period. So that may be some  
13 recourse for the petitioner. You know, I just  
14 wanted to --

15 MR. RUTHERFORD: And that is always  
16 an option. Always an option. And as we have  
17 seen and as we continue to see when we do data  
18 captures, we get additional information, we  
19 routinely provide that information to  
20 Department of Labor, Department of Energy to  
21 adjust covered time periods.

22 CHAIRMAN ZIEMER: Any other

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1 comments speaking for or against the motion to  
2 accept the NIOSH recommendation?

3 There appear to be none. Are you  
4 ready to vote? And if the motion is  
5 successful, during our work period, we would  
6 provide the detailed wording that will go to  
7 the Secretary for the Board to review. But  
8 that is standard boilerplate if the motion  
9 passes.

10 Are you ready to vote? Then we  
11 will vote by roll call. We will also obtain  
12 Dr. Melius' vote separately. You will use a  
13 different order this time.

14 MR. KATZ: I am going to use the  
15 original order right now and for the next  
16 vote, we will randomize it.

17 CHAIRMAN ZIEMER: Question?

18 MEMBER CLAWSON: I just wanted --  
19 what exactly are we voting on? To accept  
20 NIOSH's -

21 CHAIRMAN ZIEMER: To accept NIOSH's  
22 recommendation. Their recommendation is that

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1 they can do dose reconstruction and therefore,  
2 they are not recommending that Special Cohort  
3 Status be awarded to this. This would be a  
4 recommendation -- well, actually it would, in  
5 essence, end there because we would not be  
6 recommending to the Secretary that this group  
7 be a Special Exposure Cohort.

8 MEMBER GRIFFON: Yes, I just want  
9 to state for the record again, you know, for  
10 the petitioner on the phone, it doesn't have  
11 to end there. If you find other information,  
12 you know, you can work with NIOSH and get it  
13 to DOE and there is an opportunity to -- you  
14 know, if there was other stuff done or you  
15 find D&D reports from later or whatever, you  
16 know, you can work with DOE to try to expand  
17 the covered period.

18 MR. D. BRENNAN: If I could just  
19 ask a question? This is Dave Brennan.

20 CHAIRMAN ZIEMER: Yes, certainly.  
21 Go ahead.

22 MR. D. BRENNAN: Right now you are

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1 saying --

2 CHAIRMAN ZIEMER: Is this Dave?

3 MR. D. BRENNAN: Yes, David.

4 CHAIRMAN ZIEMER: Yes, David.

5 MR. D. BRENNAN: What you are  
6 saying now is that the covered period ends at  
7 the end of May of '56, that for the purpose of  
8 dose reconstruction, you are not saying that  
9 it would extend further, despite the fact that  
10 at least, in our opinion, there appears to  
11 have been residual dusting throughout the  
12 building.

13 What information would we have to  
14 get to you to show that this might have some  
15 effect?

16 CHAIRMAN ZIEMER: The situation at  
17 the moment is that NIOSH is constrained by the  
18 way in which the period is defined by  
19 Department of Energy and Department of Labor.

20 So as I understand it and I think NIOSH  
21 people can delineate this in more detail to  
22 you, but there would have to be some

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1 convincing evidence to, I believe, the  
2 Department of Energy and Labor, that there is  
3 reason to extend the covered period beyond  
4 that month of May. I don't know, Larry, if  
5 you or any of the staff -- is what I said  
6 basically correct? They are nodding that it  
7 is correct.

8 It is not within the purview of  
9 either NIOSH or of this Board to change the  
10 dates. We are constrained with the dates that  
11 have been defined by DOE and Department of  
12 Labor.

13 Now Mark, do you have an additional  
14 comment?

15 MEMBER GRIFFON: Yes, and I was  
16 just going to say that May, I mean, I can  
17 certainly see a scenario where some of this  
18 contamination remained behind after this small  
19 operation, this short operation. So,  
20 extending the covered period might be an  
21 option but NIOSH likely would still say that  
22 they could do dose reconstruction.

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1           Because even if you said, you know,  
2           you lost ten percent or something of that  
3           material, it is not a lot of uranium. And so  
4           then they could probably bound and do some  
5           dose reconstructions but at least you might  
6           get more people in the 250 days and things.  
7           So, I am thinking that that might be some  
8           option that the petitioner can work with to  
9           extend that period beyond just this month of  
10          time.

11                   CHAIRMAN ZIEMER: Of course, even  
12          if it 250 days, if they can bound the dose  
13          that is not pertinent. Larry. This is Larry  
14          Elliott from NIOSH.

15                   MR. ELLIOTT: If the Petitioner  
16          identifies information that speaks to residual  
17          contamination after the covered period, we  
18          would be most interested in that at NIOSH.  
19          Because we sat through the report to Congress  
20          on residual contamination for AWE facilities.  
21          And this is an AWE facility. And so, that  
22          should come to us.

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1 Right now, our Residual  
2 Contamination Report shows, based upon the  
3 information that we have, that there is no  
4 residual contamination for radioactive  
5 material at this site, post this May period.

6 CHAIRMAN ZIEMER: Okay, so  
7 petitioners then, you did hear that. And  
8 NIOSH is indeed interested and have already  
9 heard today your statements about that. But  
10 if that needs to be formalized further, I  
11 guess you can work with LaVon and Larry  
12 Elliott's staff on that.

13 MS. MURASKY: Larry Elliott? Okay.  
14 I guess I was kind of questioning it. I  
15 understand that there was one paid claim. Did  
16 they take that into effect, the timing, too,  
17 the date range?

18 CHAIRMAN ZIEMER: Here is LaVon to  
19 answer that.

20 MR. RUTHERFORD: There was one paid  
21 claim. The one paid claim actually did not  
22 use the approach of Appendix P. It was

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1 actually prior to that Appendix being  
2 developed. It was back when we for a short  
3 period of time used an overestimating approach  
4 and paid some of our claims.

5 MS. MURASKY: Okay.

6 CHAIRMAN ZIEMER: Okay, thank you.

7 Okay, Board members, we still have  
8 a motion before us. Are you ready to vote?  
9 We will do a roll call vote.

10 MR. KATZ: Ms. Beach?

11 MEMBER BEACH: Yes.

12 MR. KATZ: Mr. Clawson?

13 MEMBER CLAWSON: Yes.

14 MR. KATZ: Mr. Gibson?

15 MEMBER GIBSON: Yes.

16 MR. KATZ: Mr. Griffon?

17 MEMBER GRIFFON: Yes.

18 MR. KATZ: Dr. Lockey?

19 MEMBER LOCKEY: Yes.

20 MR. KATZ: Ms. Munn?

21 MEMBER MUNN: Aye.

22 MR. KATZ: Dr. Poston?

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1 MEMBER POSTON: Yes.

2 MR. KATZ: Mr. Presley?

3 MEMBER PRESLEY: Yes.

4 MR. KATZ: Dr. Roessler?

5 MEMBER ROESSLER: Yes.

6 MR. KATZ: Mr. Schofield?

7 MEMBER SCHOFIELD: Yes.

8 MR. KATZ: And Dr. Ziemer?

9 CHAIRMAN ZIEMER: Yes.

10 Okay, thank you very much. We  
11 still will get Dr. Melius' vote but the motion  
12 does carry.

13 Thank you very much. We thank the  
14 petitioners as well for their participation  
15 and providing additional insights for us on  
16 these issues.

17 Now, we are going to take our break  
18 now. We will have a 15-minute break and then  
19 resume our deliberations.

20 (Whereupon, the above-entitled matter went off  
21 the record at 11:06 a.m. and  
22 resumed at 11:31 a.m.)

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1                   CHAIRMAN ZIEMER: We are going to  
2 resume our deliberations, if you would take  
3 your seats, please. And if Greg or someone  
4 near the back could stick your neck out and  
5 see if our Designated Federal Official is  
6 floating around there so we can get underway.  
7 I don't know if I can legally start without  
8 him here.

9                   Okay. We are going to resume our  
10 deliberations. The next item on our agenda is  
11 the Lake Ontario Ordnance Works SEC. It is an  
12 83.14 petition and Dr. Neton from NIOSH is  
13 going to present the Evaluation Report from  
14 NIOSH. And then we will have, as well,  
15 opportunity to hear from petitioner online, if  
16 the petitioner wishes to speak and then an  
17 opportunity for Board discussion. So Dr.  
18 Neton, the podium is yours.

19                   DR. NETON: Thank you, Dr. Ziemer.

20                   It always amazes me the diversity  
21 of issues that we discuss from the Oak Ridge  
22 Hospital to the Baker-Perkins kneader/mixer

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1 and then, today, I am going to talk a little  
2 slightly different from that, which is the  
3 Lake Ontario Ordnance Works Special Exposure  
4 Cohort petition.

5 A little bit about the petition  
6 overview. This is an 83.14 petition, that is,  
7 a NIOSH self-initiated petition, where we  
8 obtained a petition from two survivors for an  
9 Energy employee whose dose reconstruction we  
10 believe could not be completed. The Energy  
11 employee worked at the Lake Ontario Ordnance  
12 Works between 1947 and 1951. And the petition  
13 was received by NIOSH for evaluation on May  
14 18th of this year.

15 A little on the background of Lake  
16 Ontario Ordnance. It is a Department of  
17 Energy facility, not an AWE, that is covered  
18 from 1944 through 1997. It essentially was a  
19 storage depot. Very little went on except for  
20 the fact that radioactive materials from  
21 various sites were transferred there for  
22 storage and ultimate disposition.

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1           The material came in from a variety  
2 of sites, as you can see on the slide. The  
3 first shipments of material that arrived were  
4 from Linde Air Products starting in 1944. And  
5 if you recall, Linde Air Products during that  
6 time period actually processed pitchblende  
7 ore, a lower grade than what was processed at  
8 Mallinckrodt but nonetheless, they processed  
9 pitchblende ore to extract uranium. And so  
10 the various residues from that process were  
11 shipped and stored at Linde between 1944 and  
12 1946.

13           Subsequent to that in 1949,  
14 Mallinckrodt Chemical Works' pitchblende ore  
15 residues began to be shipped. Interestingly,  
16 I just realized in looking at this Evaluation  
17 Report that between 1946 and 1949, the  
18 Mallinckrodt pitchblende ore residues were  
19 actually shipped back all the way to Belgium.  
20 And for some reason, they stopped that  
21 shipment in early '49 and started shipping the  
22 residues to Linde for storage.

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1           So nonetheless, between '49 and  
2 '53, Mallinckrodt pitchblende ore residues,  
3 which of course includes a high amount of  
4 radium-226 and associated progeny, was shipped  
5 there.

6           In addition to that, there were a  
7 number of other miscellaneous shipments that  
8 occurred; Knolls Atomic Power Laboratory  
9 shipped a number of drums. I believe they  
10 were liquid waste that contained evaporator  
11 bottoms that included various isotopes of  
12 fission products and plutonium.

13           University of Rochester waste was  
14 shipped there at one period. And we all  
15 remember University of Rochester did a lot of  
16 metabolic research with various radionuclides.

17           So I think this included a lot of  
18 contaminated animal carcasses and laboratory  
19 waste.

20           And in addition to that, other  
21 decommissioned facilities, as material became  
22 available, was shipped there, which would

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1 include various reduction slags and  
2 contaminated crucibles and stuff from various  
3 sort of smaller uranium processing operations.

4 The third bullet on this slide sort  
5 of goes over what I just talked about, which  
6 is the source term, pitchblende ore residues,  
7 uranium. I didn't mention the uranium thorium  
8 billets. There was thorium and uranium  
9 shipped there as well for storage in the form  
10 of billets, not drummed powders or anything of  
11 that nature.

12 Nonetheless, the shipments did stop  
13 in 1953. I should also mention that of the  
14 shipments that we have listed here, they are  
15 the ones that we know about. We don't have  
16 all of the shipping manifests or logs, so this  
17 is sort of a minimum bottom, a minimal amount.

18 There could have been others that just we are  
19 not aware of.

20 To look at how we could go about  
21 dose reconstructions, we went through our  
22 usual sources of available information. We

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1 looked at our OCAS -- our site research  
2 database. Various data capture efforts were  
3 conducted. There were some worker interviews  
4 conducted which included review of the  
5 Computer-Assisted Telephone Interviews that we  
6 do for all cases and there were some online  
7 database searches.

8 As far as the data capture efforts,  
9 we went and talked to a number of  
10 representatives from the various site  
11 contractors who managed the Lake Ontario  
12 Ordnance site. That included representatives  
13 from Bechtel, B&W, OxyChem, project managers  
14 for the Corps of Engineers. There is a lot of  
15 different people that had their hands in the  
16 operations there at various periods of time.  
17 This is a listing of all of the data capture  
18 efforts that we have conducted, including  
19 those at the New York State Department of  
20 Environmental Conservation, the NRC, the DOE  
21 records, including OSTI, OpenNet, and the  
22 National Archives.

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1           As far as claims go, we have a  
2 total of 38 claims that have been submitted to  
3 NIOSH for reconstruction. But of the claims  
4 that meet the criteria for the Class that we  
5 are recommending for inclusion in the SEC,  
6 which is people who have worked between  
7 January 1, 1944 and December 31, 1953, there  
8 are only seven claims that meet that  
9 definition. Of those seven claims, one of  
10 them had internal dosimetry information in  
11 their file, case file, and three had some  
12 external dosimetry information.

13           I mentioned about the source term  
14 that was available. We looked at how we could  
15 go about characterizing the operations to  
16 conduct dose reconstructions and we have come  
17 to the conclusion that between 1944 and 1953,  
18 there is insufficient information to  
19 characterize the source term because we don't  
20 know how much material was actually shipped  
21 there. We know what was shipped, to some  
22 degree, but we don't know all of it.

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1           In addition to that, if you recall,  
2 a lot of the Mallinckrodt waste was shipped  
3 there. The pitchblende ore residues, that  
4 material is actually transferred from the  
5 drums and dumped into open silos which could  
6 create a serious dusty environment in addition  
7 to having a fairly large radon source term  
8 available for exposure to the workers.

9           We could find no information in the  
10 data searches to establish any of the  
11 radiological boundaries of where these  
12 operations occurred. In other words, we  
13 couldn't restrict our evaluation to a certain  
14 building, an area of a building or even a  
15 building.

16           Of course because of the  
17 pitchblende ore source term and the presence  
18 of thorium billets and such, potential  
19 external exposure at all locations where  
20 material is stored is quite possible and, in  
21 principle, could be very high. And as I  
22 mentioned, the internal exposures potential

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1 from the dumping of drums of K-65, especially  
2 from the Mallinckrodt chemical works material  
3 into silos creates a very high potential for  
4 internal exposure.

5 And again, we don't know anything  
6 about the handling practices for the other  
7 materials such as the plutonium, the thorium,  
8 the fission products, et cetera.

9 So what type of data do we have as  
10 far as internal dose reconstruction? There is  
11 no internal monitoring data available to us,  
12 that we could find at least, prior to 1951.  
13 Prior to 1954, the bioassay data is limited  
14 before 1954. It included some radon breath  
15 data. Of course, that is a technique that is  
16 used to try to establish radium body burdens,  
17 which would be an indication that there was at  
18 least some concern at the site that people  
19 were inhaling a radium source term.

20 And there was very limited uranium  
21 and I think there is a typo on this slide.  
22 That should say uranium and radium data.

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1 There were some radium bioassay samples and  
2 uranium bioassay samples but very limited in  
3 nature.

4 There was no bioassay data  
5 available for plutonium, thorium, or the  
6 fission products. And there were some  
7 localized radon area samples that were  
8 collected between 1949 and 1951. There was  
9 some gross alpha air measurements available  
10 only for a short period of time in 1951.

11 When available, we do intend to use  
12 individual data that is available for cases to  
13 reconstruct doses for those who would be not  
14 members of the SEC class because of having  
15 non-presumptive cancers or a short duration of  
16 employment.

17 The data available for external  
18 dose reconstruction, we have film badges.  
19 Film badge results started to be available  
20 some time in mid-1949. And we have looked at  
21 this in some detail and we believe that there  
22 is sufficient data available to develop

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1 coworker distributions after 1953 but not  
2 before that time.

3 So for non-SEC cases prior to '53,  
4 again, we will use any individual monitoring  
5 data that we can pull out of the case files to  
6 reconstruct doses but we believe we have no  
7 ability to accurately reconstruct doses prior  
8 to '53 from the external exposure perspective.

9 As with many of these sites, we  
10 believe the occupational medical doses can be  
11 reconstructed over all time periods, using the  
12 existing methods that we have in one of our  
13 TIBs that sort of addresses this exposure  
14 pathway on a complex-wide basis.

15 So regarding feasibility, given the  
16 lack of any of this monitoring data, which  
17 would include internal-external exposure data,  
18 any air sample data, any area monitoring data,  
19 and an incomplete source term, we have come to  
20 the conclusion that we cannot reconstruct  
21 external internal doses at Lake Ontario  
22 Ordnance Works.

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1           And as I mentioned before, for non-  
2 presumptive cancers, we will use any available  
3 external and internal data that we have to  
4 complete dose reconstruction.

5           I have mentioned this before -- is  
6 that TIB-006? Yes, that is the right TIB,  
7 isn't it? Yes, we will reconstruct the  
8 medical doses using the complex-wide TIB for  
9 dose reconstructions.

10           So, since we can't reconstruct  
11 doses for this time period, health  
12 endangerment needs to be evaluated. And we  
13 have looked at that and we found no evidence  
14 of episodic acute exposures that would have  
15 been present in the work force. And in fact,  
16 we believe that they would have accumulated  
17 exposures on a chronic basis, more than  
18 likely. So the health endangerment in this  
19 case would be defined as anyone who was  
20 employed and exposed, who was employed at the  
21 site for 250 days within the parameters  
22 established for the Class. And as usual, that

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1 would be aggregated in combination with any  
2 work days from other classes that have been  
3 previously established.

4 So, the slide here gives us the  
5 proposed class, which is all employees of DOE,  
6 its predecessor agencies, and contractors who  
7 worked at Lake Ontario Ordnance between the  
8 first of January '44 through December 31, 1953  
9 for 250 days.

10 And this slide provides our  
11 recommendation which is internal doses,  
12 reconstruction is not feasible, nor are gamma,  
13 beta, and neutron doses reconstructable up  
14 through 1953, and medical x-rays can be  
15 reconstructed.

16 And that concludes my presentation.

17 CHAIRMAN ZIEMER: Thank you, Dr.  
18 Neton. Let me ask now if the petitioner is on  
19 the line and wishes to speak.

20 (No response.)

21 CHAIRMAN ZIEMER: The indication I  
22 got was that the petitioner might be on the

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1 line depending on his work schedule, so  
2 perhaps he is not able to participate at this  
3 point.

4 Let me open the floor for questions  
5 from the Board. Let me start, Jim. Can you  
6 give us a little better idea of the physical  
7 size and layout of this facility, multiple  
8 buildings and so on? We are covering everyone  
9 on the site, I guess, as I understand it.

10 DR. NETON: Yes, that is correct.  
11 I might have to rely on LaVon to give me some  
12 help. I am not that familiar with -- I know  
13 it is a fairly large facility.

14 CHAIRMAN ZIEMER: There is no  
15 restriction. It is everyone who worked there.  
16 Is that correct?

17 DR. NETON: That is correct.

18 CHAIRMAN ZIEMER: And we have no  
19 indication that there was any restricting to  
20 sort of areas where they stored this stuff, I  
21 guess.

22 MR. HINNEFELD: No, I don't believe

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1 so. I mean, it was hundreds of acre site  
2 originally. It was subsequently reduced in  
3 size and some of the outlying properties were  
4 sold privately. But as late as the '80s the  
5 property, I want to say was on the order of a  
6 couple hundred acres at that time.

7 CHAIRMAN ZIEMER: This is an  
8 ordnance work, so they were doing what  
9 ordnance places do besides storing waste, I  
10 guess.

11 MR. HINNEFELD: I believe the name  
12 is historical. I believe by the time the  
13 Department of Energy was utilizing it, its  
14 work as an ordnance facility was done.

15 CHAIRMAN ZIEMER: Okay.

16 MR. HINNEFELD: I believe that is  
17 the situation.

18 CHAIRMAN ZIEMER: So this is what  
19 they did, period.

20 MR. HINNEFELD: I believe that is  
21 the case.

22 CHAIRMAN ZIEMER: I got you.

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1 DR. NETON: That is correct.

2 CHAIRMAN ZIEMER: Any other  
3 questions or comments, Board members? Yes,  
4 Mark.

5 MEMBER GRIFFON: Just on the cut-off  
6 period, Jim, you said you had sufficient data  
7 beyond that and it says sort of in '54 there  
8 is enough static information. In other words,  
9 the shipments stopped but you have a good  
10 handle on what was there and what -- I mean,  
11 are there monitoring records, though, or there  
12 is some internal monitoring records beyond  
13 that?

14 DR. NETON: Yes, monitoring records  
15 become more abundant after '53, which is  
16 interesting. That is when the material became  
17 more static. But there were a number of  
18 characterizations of the site over time, like  
19 three or four different instances where people  
20 would come in and do surveys and such to  
21 characterize the contamination levels and  
22 such. But during most of this time it was,

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1 you know, what we would characterize as a  
2 caretaker operation, which the material just  
3 happened to be there. I mean, not much was  
4 done with it, with a few exceptions.

5 At one point in 1958, I believe  
6 they disposed of the Knolls atomic waste. But  
7 that was monitored. There was an air sampling  
8 campaign associated with that, some bioassays.

9 So activities that we do know about after  
10 that time period that could have generated  
11 airborne were more appropriately monitored so  
12 that we have information that we could use.

13 MEMBER GRIFFON: Just to follow up  
14 on that, so beyond that point, are you still  
15 developing your approaches for dose  
16 reconstruction? I mean, are you going to need  
17 coworker models? You have some internal but  
18 you might rely on coworker models?

19 DR. NETON: Right. We are  
20 developing those approaches.

21 MEMBER GRIFFON: Okay. All right.

22 DR. NETON: I mean, as with any

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1 83.14, we try to get these added as soon as  
2 possible to get some relief for members of  
3 that class.

4 MEMBER GRIFFON: Right. Okay.

5 CHAIRMAN ZIEMER: Further questions  
6 or comments on this one?

7 If there are none, a motion would  
8 be in order at this time. The appropriate  
9 motion probably would be to accept the  
10 recommendation of NIOSH and recommend to the  
11 Secretary that this be designated as an SEC  
12 class.

13 MEMBER PRESLEY: So moved.

14 CHAIRMAN ZIEMER: Comment first?

15 MEMBER GRIFFON: Yes, I was just  
16 going to say, I am not sure. Did you get a  
17 satisfactory answer to your question about the  
18 -- again, it is the all worker question.

19 CHAIRMAN ZIEMER: I was trying to  
20 get a feel as to whether other things were  
21 going on at the site that may have nothing to  
22 do with waste storage. And my understanding

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1 is that basically that is all that was going  
2 on. So the size, in my mind, becomes somewhat  
3 immaterial. If they work there, they were  
4 probably involved with this activity is what  
5 it appears to me.

6 MEMBER GRIFFON: And it would have  
7 been -- I mean, the question strikes me that,  
8 you know, even at this kind of place, you  
9 probably had administrative offices and things  
10 like that. And you are just going to say we  
11 are not sure if they could have been in the  
12 field or --

13 CHAIRMAN ZIEMER: No indication  
14 that they were restricted from active areas or  
15 vice-versa.

16 I think we were about to get a  
17 motion.

18 MEMBER PRESLEY: Well, I said so  
19 moved.

20 CHAIRMAN ZIEMER: Okay.

21 MEMBER PRESLEY: But according to  
22 their website, they manufactured TNT up until

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1 1946 and then after, they were used by the  
2 Army Warfare Services as a storage facility.  
3 But I make a motion that we approve this.

4 CHAIRMAN ZIEMER: There might have  
5 been a little overlap in the other work.

6 MEMBER PRESLEY: Yes.

7 CHAIRMAN ZIEMER: The motion is to  
8 approve and recommend to the secretary adding  
9 a class to the SEC. Is there a second?

10 (Chorus of seconds.)

11 CHAIRMAN ZIEMER: Well, there are  
12 several seconds here.

13 MEMBER PRESLEY: Okay, I will third  
14 it.

15 CHAIRMAN ZIEMER: Which second was  
16 first?

17 MEMBER MUNN: Probably mine.

18 CHAIRMAN ZIEMER: Okay. Any  
19 discussion on the motion?

20 (No response.)

21 CHAIRMAN ZIEMER: We will take a  
22 roll call vote, re-randomized.

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1 MR. KATZ: Mr. Schofield?

2 MEMBER SCHOFIELD: Yes.

3 MR. KATZ: Dr. Roessler?

4 MEMBER ROESSLER: Yes.

5 MR. KATZ: Mr. Presley?

6 MEMBER PRESLEY: Yes.

7 MR. KATZ: Dr. Poston?

8 MEMBER POSTON: Yes.

9 MR. KATZ: Ms. Munn?

10 MEMBER MUNN: Aye.

11 MR. KATZ: Dr. Lockey?

12 MEMBER LOCKEY: Yes.

13 MR. KATZ: Mr. Griffon?

14 MEMBER GRIFFON: Yes.

15 MR. KATZ: Mr. Gibson?

16 MEMBER GIBSON: Yes.

17 MR. KATZ: Mr. Clawson?

18 MEMBER CLAWSON: Yes.

19 MR. KATZ: Ms. Beach?

20 MEMBER BEACH: Yes.

21 MR. KATZ: Dr. Ziemer?

22 CHAIRMAN ZIEMER: Yes.

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1           The motion carries. We will, for  
2 the record, obtain Dr. Melius' vote as well.  
3 And at our work session tomorrow, we will  
4 provide the precise wording that will go  
5 forward to the Secretary with this  
6 recommendation.

7           With that, we are going to declare  
8 that our morning session is ended and we will  
9 recess for lunch and reconvene at 1:30.

10         (Whereupon, the above-entitled matter went off  
11           the record at 11:52 a.m. and  
12           resumed at 1:35 p.m.)

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1 internal exposure to ceramic metals such as  
2 you heard about at Mound. In addition, some  
3 unique statistical applications we are  
4 developing for analyzing coworker models when  
5 you have no positive bioassay samples. But  
6 that is for a future meeting.

7 I would like to start off today,  
8 though to expand a little bit on what I  
9 brought to the Board in the February meeting,  
10 which is the verification of the NIOSH-IREP  
11 program. If you recall, we undertook an  
12 effort with the support of SENES Oak Ridge,  
13 our contractor, our risk model contractor, to  
14 do a verification of the NIOSH-IREP program.  
15 I would like to distinguish that from the  
16 verification and validation effort because it  
17 is our opinion that the validation effort was  
18 actually conducted years ago by the National  
19 Academy of Sciences when they reviewed the  
20 original IREP model for the actual equations  
21 that go into the model.

22 In this particular effort, we

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1       undertook a project to basically compare the  
2       numerical data that is in IREP source code  
3       using, essentially, Excel spreadsheets to go  
4       through and verify that the program is  
5       actually calculating the numbers as we  
6       intended.

7                   And if your recall back in  
8       February, identified that three -- there were  
9       a few typographical errors and such but what  
10      arose from this entire analysis was that there  
11      were three errors that were identified in the  
12      code that could have or did have an effect on  
13      the estimate of Probability of Causation. And  
14      I list those three under the bullets here.  
15      That is the estimate of risk in the acute  
16      lymphocytic leukemia model. The second bullet  
17      is the uncertainty equation for the age-  
18      dependency modifier for Group 2 cancers.

19                   If you recall, there is like four  
20      groups of cancers within NIOSH-IREP. Group 1  
21      cancers are typically those that have a higher  
22      incidence, such as liver and breast cancer.

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1 And the excess relative risk is modified for  
2 age exposure and age diagnosis.

3 Group 2 cancers are for the,  
4 essentially the cancers that have a lower  
5 incidence rate. And because of that, there is  
6 an uncertain equation that is applied to them  
7 to expand the uncertainty associated with the  
8 central estimate.

9 So that applied to those Group 2  
10 cancers. And there is a number of those,  
11 lymphoma, esophageal cancer, and a number of  
12 the digestive track cancers.

13 And the third area where we noticed  
14 a discrepancy was the uncertainty in the  
15 modifier for age dependency in the NIH lung  
16 model.

17 Well, we took a look at those just  
18 to find out what effect these errors in the  
19 program would have on the 29,000 or so cases  
20 that we processed thus far. And I have to  
21 say, with the help of Daniel Stancescu, who is  
22 our staff statistician who has done an

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1 excellent job pulling these out, this was not  
2 an easy job, he identified 50 cases that are  
3 potentially affected by these errors.

4 And you see listed here, there  
5 would be 41 acute lymphocytic leukemia cases,  
6 six group 2 cancers, and three NIH lung model  
7 cases. I should say that this reflects the  
8 status of the cases, I think, as of mid-March  
9 of this year.

10 We ran all cases using the new  
11 algorithm, a test version, a prototype version  
12 of the IREP program that we intend to use with  
13 the corrections installed. And I did indicate  
14 at the last meeting that these corrections  
15 were minor. They were errors, essentially, in  
16 the uncertainty parameter, not of the central  
17 estimate. So, we expected that the change in  
18 the Probability of Causation would be small.  
19 And indeed, we discovered that no case would  
20 be compensable under the new algorithm once we  
21 put it into effect.

22 So, we are going to go through, as

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1 is our normal mode of practice to issue a  
2 Program Evaluation Report. We will upgrade  
3 that Program Evaluation Report to include  
4 cases up to the date that we switch to the new  
5 IREP. And the new IREP would be version 5.6  
6 and our current estimate is that we will  
7 switch over to that program. Right now mid-  
8 August is our best estimate is when we will  
9 switch. At the time we switch, then we will  
10 pull the cases out and re-validate which ones  
11 need to be re-certified.

12 A copy of the IREP validation  
13 report we put out on the website at the  
14 address that is indicated on the slide. It  
15 was just out there, I think last week is when  
16 we posted it so it is fairly new. It is a  
17 500-page report. So, give yourself some time.

18 Although, I would say most of it, as you can  
19 imagine in an effort of this type is tables,  
20 with comparison tables. I think the text  
21 itself is really somewhere in the order of 30  
22 to 40 pages. So it is out there. I would

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1 encourage anyone who is interested to pull it  
2 down from the website and take a look at it.

3 But we are pretty pleased with how  
4 this came out. We are not happy, of course,  
5 there were three errors but knock on wood, it  
6 could have been worse, I suppose.

7 The second issue I would like to  
8 talk about is the chronic lymphocytic leukemia  
9 model. I feel like a broken record because I  
10 have been here many times talking about this  
11 and giving status updates but this time we are  
12 getting very close. We have issued the final,  
13 well, the latest version of the risk model.  
14 We have put out for review to subject matter  
15 experts. We have solicited input from five  
16 subject matter experts, two from the United  
17 Kingdom, three from the U.S. We are hoping to  
18 get those review comments in mid to late  
19 August.

20 I was going to mention that  
21 unfortunately for us, Maxia Dong, our staff  
22 epidemiologist and physician has left NIOSH

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1 about a month or so ago, took a new position  
2 at the National Center for Environmental  
3 Health and we are without her services at this  
4 time. So, you are kind of looking at the  
5 acting risk-modeling person, although we  
6 fortunately have the help of SENES Oak Ridge,  
7 our contractor who does most of this work for  
8 us.

9           Since Maxia has left, those of you  
10 who have been on the Board for a while might  
11 remember Russ Henshaw who was our previous  
12 epidemiologist. He has agreed to come back to  
13 NIOSH part-time, very part-time, and assist us  
14 in the interim while we search to fill that  
15 position.

16           At any rate, we put this model out  
17 for review. This is the second go-round. The  
18 first go-round we put out was a plausibility  
19 review. This last go-round is the final  
20 model.

21           In parallel with that, we are also  
22 having the dosimetry model being evaluated

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1 both in-house and by an internal dosimetry  
2 expert located in Oak Ridge, who was going  
3 through the calculations, just to do a sanity  
4 check again, a final sanity check to make sure  
5 that it is workable in the field.

6 It is one thing to have this  
7 theoretical model that we propose but how is  
8 this really going to work when push comes to  
9 shove when you start to try to process, you  
10 know, I am not sure how many CLL cases we are  
11 going to have but let's say it is a couple  
12 hundred. We have to have the ability to  
13 automate this, computerize it, and make sure  
14 it is do-able on sort of a mass production  
15 basis. And we are looking at that right now.

16 Just a little bit about the model.

17 It is based on the non-Hodgkin's lymphoma  
18 and/or multiple myeloma model. The models are  
19 there. We actually are soliciting input from  
20 the subject experts as to which approach might  
21 be a more viable alternative.

22 It assumes that the excess relative

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1 risk receiver is equal between both sexes and  
2 it has some adjustments for attained age.

3           The big difference here from the  
4 multiple myeloma or the non-Hodgkin's lymphoma  
5 model is that the latency period is much more  
6 protracted because that is the reality of how  
7 chronic lymphocytic leukemia develops. And so  
8 as we have done with other cancers, we don't  
9 start and stop. You know, there is no  
10 Litmus Test for when the latency period is  
11 valid or not. We have actually implemented an  
12 S-shaped function that has 15 years at the  
13 mid-point. And the maximum excess relative  
14 risk receiver in this model would be attained  
15 at 25 years post-original exposure.

16           Okay, the last thing I just would  
17 like to mention is a change in the organ of  
18 dose reconstruction, you might recall that  
19 TIB-005 is our document that is sort of our  
20 roadmap to which organs we reconstruct for  
21 different covered cancers. It also provides  
22 the IREP risk model and it is all key to the

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1 ICD-9 code, the International Classification  
2 Disease Code 9.

3 And I put a little excerpt up here  
4 from TIB-005. You may recall that probably  
5 the last time that we did this, the only other  
6 time that we have done this that I can recall,  
7 is when we changed the target organ for  
8 lymphomas. And as you see here, lymphomas,  
9 the target organ is now for internal dose, is  
10 the thoracic lymph nodes, which prior to that,  
11 I think we had it designated as the site of  
12 diagnosis which, you know, after  
13 retrospective, you know, looking at it and  
14 reflecting on it, the original organ was  
15 incorrect and we made that modification.

16 Well, in going through and actually  
17 this came about as a result of an inquiry from  
18 a claimant. We recently reviewed the  
19 assignment of cancer of the intrahepatic duct.

20 That is ICD-9 Code 155.1. It is classified  
21 as a liver cancer but it is not the cancer of  
22 the liver cells themselves, the hepatocytes.

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1 It is a cancer of the plumbing, if you will,  
2 the internal plumbing, of the transfer of the  
3 bile material through the liver. So there are  
4 some arguments that could be made that that  
5 tissue is different, different than the  
6 metabolic tissue of the liver that we model  
7 with the internal dose organs.

8 But in obtaining the opinion of  
9 some medical experts and reviewing the  
10 literature, it became pretty clear that we  
11 couldn't make that distinction, especially in  
12 cases when the hepatic duct actually  
13 bifurcates into such small duct works that it  
14 is intimately involved with the liver tissue  
15 itself.

16 So, after some internal  
17 consultation, we made a decision that that is  
18 just not appropriate and we are reclassifying  
19 the target organ to be reconstructed for the  
20 intrahepatic duct to be the liver. As you see  
21 right now, it is the gall bladder and the  
22 bladder which just did not -- it made some

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1 sense when the model was first proposed but in  
2 looking at it, we feel to be claimant  
3 favorable, we are going to reclassify. And it  
4 makes some difference for those organs, for  
5 those cases where there has been exposure to,  
6 in particular, actinides or plutonium,  
7 specifically. Plutonium is known to  
8 concentrate in the liver. So you will get a  
9 much higher liver dose if you reconstruct the  
10 dose of the liver than you would for the gall  
11 bladder here, which is essentially a non-  
12 metabolic organ.

13 So this will affect some cases. We  
14 are going to go back and right now, our best  
15 estimate, it is surprising because it is a  
16 fairly rare cancer but when you have got  
17 20,000 something of anything, you end up with  
18 a fairly high number. There is about 25 cases  
19 that have been reconstructed prior to this  
20 time, using the gall bladder as the internal  
21 target organ.

22 So we are going to do a Program

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1 Evaluation Report on this and rework all the  
2 cases where we have used the gall bladder as  
3 opposed to the liver. And again, it probably  
4 won't affect all the cases. It will affect,  
5 surely, it will have a more profound affect on  
6 the cases that had plutonium exposures. So, I  
7 will report later on how that analysis comes  
8 out.

9 Did I miss something here? I think  
10 this slide is redundant. Yes. So anyway,  
11 that concludes my presentation. Thank you.

12 CHAIRMAN ZIEMER: I appreciate the  
13 update. Now let's see if there are specific  
14 questions. Yes, Mark.

15 MEMBER GRIFFON: Paul, I am not  
16 sure if you actually covered this. But there  
17 are some outstanding White Papers that I know  
18 we have talked about on the Subcommittee and  
19 maybe on the Procedures Subcommittee as well,  
20 oral nasal breathing comes to mind and there  
21 is a couple of others.

22 I don't know if you have any update

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1 on where those things stand.

2 DR. NETON: No, I don't. I mean,  
3 we have actually come to agreement on where we  
4 stand on those as part of the working group  
5 process and we have not changed our  
6 fundamental position on either of those. So,  
7 it is not affecting what we are doing for dose  
8 reconstruction.

9 MEMBER GRIFFON: You have put a  
10 final position out though on those?

11 DR. NETON: We have not put out the  
12 final position.

13 MEMBER GRIFFON: We have talked  
14 through it.

15 DR. NETON: Right. And the last  
16 working group, I forget which working group it  
17 was, we came to at least a mutual  
18 understanding of our positions on ingestion.  
19 I am not sure, for example, SC&A 100% agrees  
20 with it but at least they understand where we  
21 are coming from. At a minimum, we have agreed  
22 to disagree on that issue.

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1           And so what we are doing is we are  
2 going to continue doing as we have in the  
3 past. So, it doesn't make any difference in  
4 how we are doing dose reconstructions but I do  
5 agree with you that we need to put out a final  
6 --

7           MEMBER GRIFFON: Yes, I think you  
8 committed to putting it in writing.

9           DR. NETON: -- position to close  
10 that one. I agree with you.

11          MEMBER GRIFFON: All right. Just  
12 those two Jim? I can't remember if there were  
13 other -

14          DR. NETON: No, there was a few  
15 other --

16          MEMBER GRIFFON: A few others.

17          DR. NETON: -- sort of odds and  
18 ends out there. And I need to, next time I  
19 will report on those.

20          MEMBER GRIFFON: Can you add on  
21 that? Yes, thank you.

22          DR. NETON: I apologize, yes.

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1 CHAIRMAN ZIEMER: Dr. Lockey?

2 MEMBER LOCKEY: The ICD code for  
3 biliary tract tumors is, I guess, is  
4 different. Right?

5 DR. NETON: Biliary tract?

6 MEMBER LOCKEY: Yes.

7 DR. NETON: You mean the  
8 intrahepatic duct tumors?

9 MEMBER LOCKEY: No, actually  
10 involving the biliary tract itself.

11 DR. NETON: Well the liver itself  
12 is 155. I mean, that is the cancer of the  
13 liver itself which is, in my view of thinking,  
14 the hepatic tissue, the hepatocytes. There is  
15 intrahepatic ducts, which are 155.1 and then  
16 there is also the intrahepatic ducts, which is  
17 a different code.

18 MEMBER LOCKEY: Right.

19 DR. NETON: The intrahepatic ducts  
20 is -- you are talking about the connection  
21 between the bladder and liver? That is a  
22 different code.

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1                   MEMBER LOCKEY: That is a different  
2 code. Okay.

3                   DR. NETON: Yes.

4                   MEMBER LOCKEY: Thank you.

5                   DR. NETON: And that we would not  
6 use this approach for.

7                   MEMBER LOCKEY: Sorry.

8                   CHAIRMAN ZIEMER: Okay. Other  
9 questions, comments?

10                   Jim, at I don't know a couple of  
11 meetings ago, we had, I think it was a member  
12 of the public that raised the issue of  
13 validation of the IREP code. And then I think  
14 you told us that it had been validated  
15 originally. But we have NIOSH-IREP and I  
16 don't know enough about validation of computer  
17 codes to even ask the question right but it is  
18 sort of along the lines is are we assured that  
19 in the transformation, if I can call it that,  
20 from the original IREP to what we call NIOSH-  
21 IREP that there would be something outside of  
22 the original validation or is it your

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1 understanding that this verification process  
2 would indeed pick up any such glitch, if I can  
3 call it that.

4 DR. NETON: The verification  
5 process would not. I mean, that is purely the  
6 mechanics of the calculations. Are they being  
7 done in accordance with the way the source  
8 code should be written?

9 CHAIRMAN ZIEMER: But if the code  
10 itself or if the equations themselves are not  
11 right, then it is a separate question.

12 DR. NETON: Right. And you are  
13 correct to point out that there are some  
14 differences between the IREP code itself,  
15 which was originally validated in our opinion  
16 by the National Academy of Sciences Review in  
17 the NIOSH-IREP model itself.

18 I will say that before we  
19 implemented the NIOSH-IREP model, any of those  
20 changes that we made were vetted through  
21 subject matter expert reviews and they are  
22 posted on our website. I forget how many

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1 expert reviews we got but the models  
2 themselves were put out for public comment or  
3 not public comment, but subject matter expert  
4 review comments.

5 CHAIRMAN ZIEMER: And these  
6 included folks external to OCAS?

7 DR. NETON: Yes, right.  
8 Definitely.

9 CHAIRMAN ZIEMER: Thank you.

10 Any other comments, questions?  
11 Okay, thank you very much.

12 The Subcommittee on Dose  
13 Reconstruction and the Board have reported to  
14 the Secretary on a number of occasions about  
15 the outcomes of the Dose Reconstruction  
16 Audits, if we can call them that. We had an  
17 initial report on the first 20 cases and then  
18 I think a report on the next 40. And then I  
19 believe a third report on the following 40.  
20 And then at the last meeting, this Board  
21 approved a summary or wrap-up report of those  
22 first 100 cases. Incidentally, that report

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1 which was approved has been undergoing a  
2 number of edits, which are edits that are more  
3 along the lines of formatting, not editing the  
4 technical content. And I believe the final  
5 version has, I think, Mark has agreed to the  
6 final version even this week. So that is  
7 ready to go to the Secretary.

8 But in any event, there were a  
9 number of issues that arose through those  
10 audits. There were a number of findings.  
11 There were discussions between the Board and  
12 SC&A and NIOSH. And Stu Hinnefeld is going to  
13 give us a report now on the Dose  
14 Reconstruction Program and the OCAS actions  
15 relating to the review of the first 100 cases.  
16 Keep in mind, these are not the first 100 dose  
17 reconstructions done by NIOSH but the first  
18 100 audit reviews done by the Board and the  
19 impact, in essence, that those have made on  
20 the way dose reconstructions are conducted.

21 MR. HINNEFELD: Well, thank you,  
22 Dr. Ziemer, and thank you, Board members, for

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1 the opportunity here today. I notice on the  
2 agenda that I have consecutive presentations  
3 without the benefit of lunch in between. So I  
4 am assuming the Board's thought process was  
5 well, if we have got to listen to this guy,  
6 let's just get it over with quick. You know,  
7 kind of like pulling the Band-Aid off, sort  
8 of.

9 CHAIRMAN ZIEMER: It is the  
10 Designated Federal Official who makes that  
11 determination. We tried to talk him out of  
12 it.

13 MR. HINNEFELD: Whoever feels that  
14 way, I don't care. You know, I have been  
15 doing this a long time.

16 I think it is worthwhile to provide  
17 a little bit of information here because this  
18 has been, a dose reconstruction review from my  
19 standpoint, is a particularly laborious  
20 process. It is really detailed, the Board's  
21 technical support contractor, is a really  
22 detailed group of people. And so we have

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1 quite a lot of information provided in these,  
2 and there has been an evolution of how dose  
3 reconstructions are prepared, as we have gone  
4 through this process, in large part due to  
5 this feedback that has been received through  
6 this process. And so I think it might be  
7 worthwhile for us to say that yes, we  
8 understand the comments, a lot of the  
9 comments. So we are serious about trying to  
10 provide a product that is satisfactory to the  
11 affected parties and we are not just sitting  
12 here not doing anything. You know, we are in  
13 fact making revisions as we go.

14 So I have structured this for  
15 brevity along the lines of speaking to the  
16 Summary Findings or the Summary  
17 Recommendations, I forget now exactly which  
18 they are called, in the report, and providing  
19 some sort of indication to the Advisory Board  
20 about what has been done or is being done in  
21 response to those summary findings.

22 So essentially, I am going to

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1 recount the Summary Findings or Summary  
2 Recommendations from the Report and then  
3 provide some sort of action, you know, what  
4 has gone on or what is going on in response to  
5 those. And then after the presentation, this  
6 is going to be fairly brief, I will entertain  
7 whatever questions or comments anyone has  
8 beyond that. Because we could discuss this  
9 topic, probably at considerable length.

10 The first finding in the summary  
11 was Dose Reconstruction Final Reports need  
12 modification to allow for a more complete  
13 audit and better explanation of information to  
14 the claimant.

15 And that is kind of like two parts.

16 One is better explanation of information to  
17 the claimant. And then the second is to make  
18 it more clear what, you know, technically what  
19 was done in the dose reconstruction so that  
20 the audit process can be done maybe more  
21 efficiently. And in fact, just in general the  
22 file contains more specific information than

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1 about how the decision was reached.

2 Our response here really speaks to  
3 the first part of this, which is we need  
4 modification to allow a more complete audit,  
5 which is to provide a more complete technical  
6 story. And also, it also speaks to the better  
7 explanation to the claimant.

8 For quite some time now, our  
9 contractor and we have worked on a new kind of  
10 changing the format of the dose reconstruction  
11 to do a couple of things. One is to simplify  
12 the discussion to the claimant because right  
13 now a Dose reconstruction Report is sort of a  
14 mingled description, a mingled account in  
15 which we try to convey to the claimant what we  
16 have done and we also try to convey the  
17 technical aspect of how it was done.

18 And it is very hard in one section  
19 to accomplish both those tasks, to try to  
20 explain something to the claimant and also  
21 provide the actual technical approach because  
22 the technical approach is really a kind of

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1 specialized field that defies, in some cases,  
2 simple explanation.

3           And so that format we have worked  
4 on with our contractor kind of hit or miss as  
5 resources are available for a while. It is  
6 moving along quite well now. I think we are  
7 getting close to having something that we can  
8 work out and proceed with. Part of this is we  
9 want to make sure we have a broad consensus in  
10 what this needs to look like. And on the  
11 slide, I say among dose reconstructors and  
12 OCAS reviewers but there are other people we  
13 want to have the consensus from, too.

14           For instance, this simplified  
15 explanation to the claimant, is this really an  
16 improvement? Because there will be less in  
17 there. It will not explain as many details in  
18 the section that is essentially aimed at the  
19 claimant as is currently explained. All those  
20 details will be there but they will not be  
21 explained in the same fashion.

22           So we think that it will be a

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1 better read for the claimant and actually give  
2 them a better understanding of what was done  
3 than what is currently done because all of the  
4 technical stuff kind of gets in the way.

5           The technical information will be  
6 provided in a separate file, probably Excel or  
7 something like that which will kind of  
8 describe to people who are conversant in the  
9 technical aspects of the program what choices  
10 were made and what decisions were made in how  
11 the dose reconstructions were done.

12           Now along this line, in terms of  
13 making a dose reconstruction more  
14 understandable to the claimant. We have done  
15 a number of things with the existing format to  
16 try to emphasize that we are being more clear  
17 in our report of what was done. And that has  
18 developed over time. It has been evolution in  
19 large part due to the feedback we have  
20 received from this. But so it is kind of, we  
21 have not like done nothing along this, while  
22 we waited for the new format. We have done

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1 some things in terms of existing format and  
2 what the words are put in there. But the real  
3 change that we are really shooting for is the  
4 new format of the Dose reconstruction Report.

5 The next finding is the case files  
6 which include the supporting data for the dose  
7 reconstruction should include the internal  
8 guides or instructions used by the dose  
9 reconstructors and should include supporting  
10 data analysis. Now these internal guides and  
11 instructions are, essentially instructions  
12 issued to dose reconstructors were to clarify  
13 or further expound on the technical  
14 documentation. You know, maybe when a  
15 procedure is written, when someone goes to use  
16 it, they may encounter a situation that says  
17 this procedure doesn't entirely explain what  
18 to do in this situation. And this may be  
19 brought up say in the contractor staff  
20 meeting. And so the contractor determines  
21 this is what this means. In this situation  
22 this is how that technical document is to be

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1 interpreted. And that instruction is then  
2 provided to the dose reconstructors in  
3 something called a guide or an instruction.  
4 And so they are available to make for a  
5 consistent utilization of the technical  
6 document.

7 No those were not, those  
8 instructions have not been considered control  
9 documents and therefore were not readily  
10 available to be utilized and as a part of the  
11 response to this recommendation, we are now  
12 having the contractor include any kind of  
13 instructions that are current, that are  
14 currently applicable in a dose reconstruction  
15 supporting file.

16 So those are being added now. That  
17 was just started this year and so since dose  
18 reconstruction cases that get reviewed have to  
19 go through final adjudication before they come  
20 up, it will be awhile before the Subcommittee  
21 sees anything like that but we have begun to  
22 do that.

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1           The next finding was actually three  
2 parts. It had to do with the interview, the  
3 claimant interview process. Part A was there  
4 were questions about the adequacy of the  
5 interview. Part B is questions about the  
6 consideration of the information provided in  
7 the interview. In other words, was this  
8 information fully considered in the dose  
9 reconstruction and the Part C then is  
10 explanation in the dose reconstruction of how  
11 the information was considered. In other  
12 words, did it explain that? And rightfully so  
13 because there were times when people would say  
14 things in an interview that the dose  
15 reconstructor would conclude that this really  
16 doesn't affect this dose reconstruction. And  
17 so the dose reconstruction said nothing about  
18 it. And rightfully so, the claimants would  
19 say I told you this information and you didn't  
20 even pay any attention to me. Why did you  
21 bother to interview me?

22           So in response to that, going in

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1 the same order, the Procedures Subcommittee  
2 has taken on the task of the interview,  
3 looking at the CATI interview and I believe it  
4 is going to report on it at this meeting and  
5 the progress that has been made. That ended  
6 up in Procedures Subcommittee because the  
7 Procedures Subcommittee reviewed the CATI  
8 procedure and so it became part of that  
9 effort.

10 For Part B, the consideration of  
11 information, to the best of my knowledge in  
12 each case we have explained after the fact in  
13 the debate, in the discussion of the Dose  
14 reconstruction Report, how the information was  
15 considered or the fact that certain  
16 information that is provided really doesn't  
17 affect the dose reconstruction. You know, it  
18 would have been done this way whether they had  
19 said that or not.

20 So, I think in every case we  
21 already explained that. It doesn't improve  
22 the dose reconstruction that was sent to the

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1 claimant in that case, which didn't explain it  
2 to the claimant.

3 So, as part of that, number C, we  
4 now, in our Dose reconstruction Reports, we  
5 make a point of addressing the information  
6 that is provided in the interview so that if  
7 they say I was also exposed to beryllium,  
8 which is not radioactive, in the Dose  
9 Reconstruction Report we will now acknowledge  
10 that the claimant interviewed in the case,  
11 said they were exposed to beryllium but that  
12 doesn't affect the dose reconstruction because  
13 it is not radioactive.

14 This next finding is one that  
15 occurred for about a month back in 2005 and so  
16 we are estimating dose reconstruction  
17 methodology for compensable claims, which we  
18 generally don't do. In response, I think this  
19 is the response I have given for this for the  
20 last couple, three, four years. This was  
21 adopted briefly in 2005 under pressure in the  
22 Program Office to complete claims as quickly

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1 as possible. And the decision was let's just,  
2 if we have a way to do these dose  
3 reconstructions, let's just say okay, that is  
4 the best we can do. The research is done. We  
5 are going to apply these more broadly and if  
6 this is the best model we can come up with,  
7 that is the one we have, and people get  
8 compensated, then they get compensated. So  
9 that was the thought process behind making  
10 that decision.

11 Now, once we started down that  
12 road, a couple of things kind of got in the  
13 way. One was that there were not -- there  
14 were a lot of claims that were waiting to be  
15 done that had been waiting for a long time  
16 that really, because of the nature of the work  
17 that was done at the site, we really didn't  
18 have a method for but we used some of those  
19 accelerated methods anyway inappropriately for  
20 -- it shouldn't have been used for claims from  
21 that site and it was used anyway.

22 And the second issue was that we

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1       couldn't really in good conscience say that we  
2       had completed research at all of those sites  
3       because there were a number of sites that we  
4       had already researched to some extent. And so  
5       we kind of had a standard for what we would  
6       expect to do in order to research a site. And  
7       for the sites that we were applying this  
8       method to, we really hadn't done that. We  
9       hadn't really completed those.

10               So, we did this practice for about  
11       a month or two and then we stopped at our own  
12       accord, largely for these reasons that did  
13       come up during the review of the dose  
14       reconstructions that ultimately didn't appear  
15       before the Dose Reconstruction Subcommittee.

16               And the next finding is in best  
17       estimate cases, several findings related to  
18       professional judgment and consistency were  
19       made which may have impacted the overall  
20       outcome of the case.

21               And there is a time when there is  
22       some judgment to be made about what the record

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1 in front of you is telling you. And sometimes  
2 and I believe these are professionally  
3 characterized as professional judgments. From  
4 our standpoint, we feel like we have the  
5 professional judgment, the dose reconstructor,  
6 and the peer reviewer and then the OCAS  
7 reviewer all coming to bear. So we have three  
8 individuals who must essentially concur that  
9 the professional judgment has been made  
10 correctly and then gives us some level of  
11 comfort for having these kinds of decisions  
12 made.

13 I think in the specific cases of  
14 the dose reconstructions that were reviewed  
15 and commented on in this fashion, I believe we  
16 have explained our professional judgment  
17 satisfactorily, as far as I know, in each  
18 case. And so there are -- so I believe we  
19 have explained it and have been fairly  
20 consistent, if I am not mistaken in how the  
21 judgments were made.

22 And I would like to offer better,

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1 you know, I would like to able to say that we  
2 will never use a professional judgment again.

3 I don't think I can say that.

4 Okay, that was my final slide. I  
5 think it was the final recommendation. Now  
6 this may have prompted a bit of discussion so  
7 maybe I will just call it quits here.

8 CHAIRMAN ZIEMER: Stu, one of the  
9 problems we hear about a lot when we have  
10 public comments is the idea that when dose  
11 reconstructions are redone, perhaps because  
12 there is a second cancer or something and  
13 people look at the original report and then a  
14 new report and they see that the PoC has gone  
15 down and often this is due to the first round  
16 being due to a maximizing procedure and then  
17 the next round is more of a best estimate and  
18 we understand that. It seems to be a  
19 continual cause of confusion to the  
20 recipients. Are we including that in the  
21 explanations now as you are revising that?

22 MR. HINNEFELD: Yes.

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1                   CHAIRMAN ZIEMER:     Is that being  
2 addressed?

3                   MR. HINNEFELD:     I am glad you  
4 reminded me of that. It is something I forgot  
5 to mention. That problem does occur with some  
6 frequency. It is a fairly common happening.  
7 It is an outcome that we really didn't foresee  
8 of using efficiency methods, overestimating  
9 efficiency methods, which we used in order to  
10 try to get some of this huge backlog of claims  
11 out of the way in some sort of a timely  
12 fashion.

13                   And the fact is that if we use an  
14 overestimating approach and we arrive at a  
15 particular Probability of Causation number,  
16 and that goes all the way through the process,  
17 and then something about the facts of that  
18 case change. For instance, the claimant may  
19 be, the Energy employee may still be alive and  
20 may be diagnosed with an additional cancer.  
21 There may be a correction to the employment  
22 that adds more employment. Any number of

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1 things can happen. Those are the main ones.  
2 And that would then, the Department of Labor  
3 then refers that case back to us to do a new  
4 dose reconstruction.

5 At this point, a couple of things  
6 could have happened. It could be that that  
7 overestimating approach would now compensate  
8 them, which we don't want to do with an  
9 efficiency overestimating anymore or it could  
10 be that in the interim we have, whereas we  
11 didn't have a refined or best estimate  
12 approach before, now we do. And so we do a  
13 best or better estimate approach and the  
14 Probability of Causation number then, even in  
15 throwing in the additional cancer is actually  
16 lower than the original Dose reconstruction  
17 Report.

18 Now to help try to explain that, we  
19 now include in the language of a dose  
20 reconstruction for an overestimating report,  
21 there is a statement in there that this is an  
22 overestimating report, you know, a dose

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1 reconstruction for efficiency purposes and if  
2 the facts of the case would change, meaning  
3 the facts as we know them in the case would  
4 change, this number may well go down, the  
5 Probability of Causation may go down.

6 And so that is in the original  
7 statement. Now, if I am not mistaken, when we  
8 do a rework in a situation like this where it  
9 goes down, if I am not -- in fact, I think  
10 this is the case for any rework, I guess.  
11 Somebody can hit me if I am wrong. When a  
12 rework dose reconstruction is done, there is a  
13 summary of if there is a change like that.  
14 You know, in other words, we used one method  
15 before. We are using another method later.  
16 There is a summary of what was done in the  
17 first one and what is being done differently  
18 now. And to kind of also explain why this one  
19 doesn't just go up automatically with the  
20 addition of the second cancer.

21 CHAIRMAN ZIEMER: Thank you very  
22 much.

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1                   MR.     HINNEFELD:            Thanks     for  
2     reminding me of that.

3                   CHAIRMAN ZIEMER:    Yes, because the  
4     expectation of many of the workers is that,  
5     with an additional cancer or additional work,  
6     it has got to shoot the number up further.

7                   Now the other thing and this is  
8     sort of connected to that and you know that I  
9     have had this concern for a long time, even if  
10    it is an overestimate, we are still giving  
11    them two decimal places on that.    Isn't it  
12    time to change that, to something like a whole  
13    number?   That is almost rhetorical right now.

14                  MR. HINNEFELD:    Well I understand.  
15    That would be far more palatable I think to  
16    you and me.    It certainly would be more  
17    palatable to me because you would stop  
18    chastising me about it if we did that.   IREP  
19    prints it out that way and so we convey it  
20    over.

21                  CHAIRMAN ZIEMER:   Well, I know what  
22    IREP does and IREP is not the boss.   We are.

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1 So, -- you are. Larry is.

2 MR. HINNEFELD: Some people say  
3 that to me once in a while. I have never seen  
4 any evidence of it.

5 (Laughter.)

6 CHAIRMAN ZIEMER: Well, that is why  
7 you get the big bucks or the small bucks.

8 Well, it is a continual irritant to  
9 me.

10 DR. NETON: Well, just a point of  
11 clarification. We don't provide that number  
12 to the claimants at all.

13 CHAIRMAN ZIEMER: I know.

14 DR. NETON: And IREP prints it out  
15 and Department of Labor has adopted the use.

16 CHAIRMAN ZIEMER: Yes, I know but  
17 Jeff is here.

18 DR. NETON: I understand but to  
19 take a little of the onus off of us, I mean,  
20 we do not provide that number to the claimant.

21 CHAIRMAN ZIEMER: No, I said, it is  
22 a rhetorical question. I just like to have it

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1 be heard. You know, in the distant future  
2 maybe somebody will do something about it.

3 MEMBER CLAWSON: Maybe we can round  
4 up.

5 CHAIRMAN ZIEMER: Well, I am fine  
6 with rounding, just use rounding rules. But  
7 you know, it implies way more than it should.

8 MR. HINNEFELD: Yes, understood.  
9 It certainly does.

10 MEMBER CLAWSON: And to bring that,  
11 I have just gone through the paperwork here,  
12 49.79 --

13 MR. HINNEFELD: I'm pretty sure  
14 that was a dose model, meaning it is a site  
15 where we have a model that describes how you  
16 do the dose reconstruction. And I understand,  
17 that one would round to 50 if we were  
18 reporting to a whole number.

19 MEMBER CLAWSON: Well, I just think  
20 that claimants --

21 MR. HINNEFELD: Do we really know it  
22 that well, is what you were saying. And that

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1 is what Paul is saying, why use decimal points  
2 at all. Do we really know it that well?

3 CHAIRMAN ZIEMER: Well, point made.  
4 Let's open the floor to others to discuss.  
5 Yes, Brad?

6 MEMBER CLAWSON: Stu, when we have  
7 been going through these, many times as we  
8 review some of these in our reviews and stuff  
9 like that, we have found issues, and we have  
10 gone through it and you may have spoke to this  
11 earlier, but part of the problem that I saw  
12 was that we were making the comment, well this  
13 was compensated anyway, so it really doesn't  
14 matter. But what I want to make sure is that  
15 we are taking that information, that we are  
16 learning from reviewing these dose  
17 reconstructions and making sure that they get  
18 to the other ones that are coming up. And I  
19 spoke to you about this before because maybe  
20 in this one, it was compensable but are we  
21 learning from the mistakes that we made in  
22 that and putting them towards the other one,

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1 so that we don't make that same mistake?

2 MR. HINNEFELD: Well, certainly we  
3 are learning from these and doing some things.

4 Now, are we -- can I tell you today that we  
5 comprehensively do that? And that is probably  
6 not being done, that there is this  
7 comprehensive analysis of a finding. And you  
8 know, the way you would do if, for instance,  
9 you had a QA non-conformance report, for  
10 instance, to try to talk a language that you  
11 probably know a lot more about it than I do.  
12 You would generally try to determine why did  
13 that happen and let's go fix it. Right?

14 Or you might say, okay, yes, that  
15 one is not quite right but we are just going  
16 to accept as is. That is one of the terms  
17 they use is, accept as is. And we re not  
18 going to worry about trying to fix it because  
19 it is such a thing that it just doesn't  
20 matter. We don't really do that finding-by-  
21 finding on this. It would be if we want to  
22 talk about that, I would almost like to

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1 propose that maybe the Subcommittee take that  
2 up as a topic for how do we want to address  
3 this.

4           And part of this discussion also is  
5 what is the expectation for what a dose  
6 reconstruction should be? Because I have  
7 talked about summary findings here. I mean,  
8 if you want to go down to a greater detail  
9 about finding-by-finding of the discussion of  
10 finding-by-finding, I think there were a lot  
11 of findings written about the first hundred  
12 dose reconstructions that I would say those  
13 weren't deficiencies. You know, it was  
14 commented on but there is really nothing  
15 deficient about this dose reconstruction. And  
16 then there is sort of a, there are some that  
17 clearly are, when you read the finding and you  
18 look at the dose reconstruction and say, oops,  
19 you are right, it shouldn't have been done  
20 that way. There are some that are clear in  
21 that way.

22           And there are some that are kind of

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1 in this broader middle category that well, you  
2 know, that maybe could have been done better  
3 but I don't know that I would necessarily call  
4 that wrong. You know, so there are these kind  
5 of broad categories that these fall into which  
6 we don't necessarily go through in our  
7 discussion.

8 So it might be something for the  
9 Subcommittee to take up would be those kinds  
10 of questions. And we may want to start with  
11 trying to have some sort of common  
12 understanding of what are we trying to achieve  
13 in a Dose reconstruction Report? In other  
14 words, sort of how good, what are the  
15 requirements. How good does it have to be?  
16 That kind of stuff.

17 MEMBER CLAWSON: I understand that  
18 and I appreciate it.

19 CHAIRMAN ZIEMER: Well maybe Mark  
20 wants to speak to this but I think the  
21 Subcommittee has done a good job of  
22 distinguishing between those items which are

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1 sort of yes, that maybe was not exactly the  
2 right way to do it, versus those that have a  
3 real impact on an ongoing basis.

4 In fact, and clearly some of the  
5 methodologies have changed anyway and we have  
6 findings that, although they affected that  
7 particular case, they don't do it that way  
8 anymore in any event. So, it doesn't have any  
9 impact going forward. But let Mark comment.

10 MEMBER GRIFFON: I mean, yes, I  
11 think, you know, we have discussed these a  
12 little back but I take Stu's recommendation.  
13 I mean, I think we should probably look at  
14 these as a full Subcommittee topic instead of  
15 just as they sort of come up. But I mean,  
16 one, you know, part of the reason, what we go  
17 through in this Subcommittee and in our  
18 reports is to have case findings and rankings  
19 and then sort of this broader, I think we call  
20 them program rankings. And you know, I think  
21 Stu is accurate in that many of the findings,  
22 actually, many of the findings, we see, you

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1 know, we do six, seven, eight, nine cases, all  
2 from Savannah River, so you see the finding  
3 repeated. And of course, yes, that is going  
4 to come up because it was using the same  
5 spreadsheet; it is just a redundant finding.  
6 So that number of total deficiencies might  
7 look a bit inflated.

8 But then we do find other  
9 categories, and these are the ones that I  
10 think are important for us in looking at the  
11 overall program, that sort of, you know, make  
12 us wonder or question the overall Quality  
13 Assurance Program, for instance.

14 So if you see a number of errors,  
15 yes, it was minor and it didn't make a big  
16 deal with this particular case. But when you  
17 put them as a group, you say, gee, this has  
18 happened ten times or something like that.  
19 Wouldn't that have been caught by the peer  
20 review process?

21 These questions have been brought  
22 up but I don't think we have formally put it

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1 on an agenda. And I think --

2 MR. HINNEFELD: Yes, I would almost  
3 think it would be worthy of --

4 MEMBER GRIFFON: That would be a  
5 good idea, yes. It sort of comes up as a  
6 sidebar conversation sometimes but we haven't  
7 really looked at that so I think it would be  
8 useful to look at some of those overall topics  
9 and what does it mean.

10 CHAIRMAN ZIEMER: Is somebody on  
11 the phone?

12 PARTICIPANT: Hello. I am, you  
13 know, on the conference.

14 CHAIRMAN ZIEMER: I'm sorry, I  
15 couldn't understand that.

16 MR. HINNEFELD: They want to be on  
17 the conference.

18 CHAIRMAN ZIEMER: Yes, this is the  
19 Advisory Board on Radiation Worker Health. Is  
20 that who you are trying to reach?

21 (No response.)

22 CHAIRMAN ZIEMER: Okay, in any

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1 event, good point, Mark and Stu.

2 MEMBER GRIFFON: We will try to put  
3 that on there next -- one of our next  
4 meetings.

5 CHAIRMAN ZIEMER: Larry?

6 MR. ELLIOTT: I would welcome this  
7 because I think we have different perspectives  
8 here on what our acceptance -- quality of the  
9 product is. And we would say to you and the  
10 claimants that we are trying hard to get the  
11 right decision and communicate it effectively,  
12 communicate how we have done to arrive at the  
13 reasonable dose estimates.

14 And that's certainly, I think,  
15 different than what I see coming out of the  
16 reviews of the Subcommittee. Because as Stu  
17 said, many of the deficiencies that are  
18 identified that you would say this speaks to  
19 your lack of a Quality Assurance Program, I  
20 would say no, it doesn't have anything to do  
21 with the quality of the product that we are  
22 talking about because the quality as we define

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1 it is the right decision effectively  
2 communicated.

3 So I would welcome this kind of a  
4 discussion because I think we need to better  
5 understand where the Board's review  
6 perspective is coming from and it would help,  
7 I think to give an understanding from our  
8 perspective as well.

9 MEMBER GRIFFON: And I don't want  
10 to mischaracterize it but I know there are  
11 several that you know, we kind of scratched  
12 our heads and said there is no way. And I am  
13 not saying there is a lot of these, but there  
14 were some errors that were clearly errors and  
15 it got through three people.

16 MR. ELLIOTT: Sure.

17 MEMBER GRIFFON: So I think we  
18 should. But how often did it happen, you  
19 know, and that is just, you know -

20 MR. ELLIOTT: Well, I think it is  
21 problematic because a list of deficiencies  
22 sets an expectation with a stakeholder

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1 community that something is awry, something is  
2 wrong. And we would say, not in all cases.  
3 We still produced the quality product that we  
4 were seeking. We may not have effectively  
5 communicated how we arrived at that and we can  
6 do better in that regard but, you know, these  
7 litany of deficiencies that really don't go to  
8 a change in the compensation decision, that  
9 doesn't help us. It doesn't help the  
10 claimant.

11 MEMBER GRIFFON: We may have a  
12 little bit of a disagreement. We have some  
13 more ground to discuss on that, I would say.  
14 Because also if you do have these what might  
15 be small deficiencies and then a person  
16 develops another cancer and comes back. And  
17 you know, all of a sudden these -- you know,  
18 it does question the -- I think there are some  
19 quality questions. So, I will just leave it  
20 at that. I don't think we can go further  
21 here.

22 CHAIRMAN ZIEMER: I think the 100-

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1 case report tried to distinguish between those  
2 kind of defects that really have no impact on  
3 the end product. And, in fact, pointed out  
4 that in most cases, the decisions were  
5 nevertheless the right decisions. So, I think  
6 that has been made pretty clear that there may  
7 have been some questions on certain things  
8 along the way or maybe questions on how things  
9 were communicated or better communication. A  
10 lot of it had to do with that, even. But yes,  
11 I think we are aware of what the end product  
12 needs to be.

13 And at the same time, we want to  
14 make sure that the stakeholders believe that  
15 high quality covers everything not only  
16 including the final decision but all the steps  
17 to get there as well. I don't want to -- I  
18 will use the extreme and say well, we always  
19 make the right decision, even though we don't  
20 go about it the right way. That is not what  
21 Larry is saying and we don't want that  
22 impression to become prevalent either.

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1 Well, Stu, have we talked long  
2 enough here for you to catch your breath and  
3 be ready for the next round?

4 MR. HINNEFELD: Yes. I'm still  
5 going to have to help myself to water  
6 periodically.

7 CHAIRMAN ZIEMER: Okay.

8 MR. HINNEFELD: I just don't speak  
9 very much.

10 CHAIRMAN ZIEMER: Okay. Well, we  
11 are --

12 MR. HINNEFELD: People who know me  
13 know that is true.

14 CHAIRMAN ZIEMER: We are ready to  
15 go on to the next topic, which is the SEC  
16 petition for the Norton Company. That is an  
17 83.14 and Stu will present the NIOSH  
18 Evaluation Report on that.

19 We do not think there will be a  
20 petitioner on the line for this. My  
21 understanding is that the petitioner may be  
22 present and may listen but will probably just

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1 call after the meeting for an update. I  
2 believe that petitioner may not be able to be  
3 here today in any event because of personal  
4 reasons. I'll leave it at that.

5 MR. HINNEFELD: Okay. Thank you,  
6 Dr. Ziemer.

7 Today I will be reporting on our  
8 SEC evaluation for the Norton Company. And as  
9 you said, this is an 83.14 SEC petition. That  
10 is the one where we find that we can't find  
11 enough information to do dose reconstructions  
12 and we conclude on our own that dose  
13 reconstructions aren't feasible and then we  
14 essentially we solicit a petition from one of  
15 the claimants from that site.

16 Just to provide a little history  
17 here, in May we informed the Norton Company  
18 claimant that we were unable to find enough  
19 information to do dose reconstruction and we  
20 sent that letter. We also sent a form, I  
21 believe it is a Form A Petition, which they  
22 merely have to sign and send back. We

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1 received that petition back later on in May  
2 and promptly qualified the petition for  
3 evaluation and then issued the Evaluation  
4 Report earlier this month.

5 Norton Company was an Atomic  
6 Weapons Employer from January 1, 1945 through  
7 December 31, 1957, manufacturing refractory  
8 products from boron, beryllium, uranium,  
9 thorium and magnesium oxide. They were  
10 mainly, at least the part of the operation the  
11 AEC utilized were they were a ceramic  
12 manufacturing capability.

13 And the AEC sent them some  
14 radioactive material and some other kind of  
15 bad stuff, beryllium, et cetera, to try to  
16 make these crucible shapes for utilization  
17 probably in further uranium manufacture, I  
18 would guess.

19 This is the operational period,  
20 1945 to 1957 and that is what we have  
21 concluded is infeasible. We can't do dose  
22 reconstruction. There is a residual period

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1 for this site that runs, at last publication  
2 of the Residual Contamination Report, ran  
3 through the publication data of that report,  
4 which was 2006. Now there is a revised  
5 portion of the Residual Contamination Report  
6 that is making its way through the  
7 organization for publication and I don't know  
8 today whether that changes that date or not,  
9 the end date of the residual period.

10 But for this petition, we are only  
11 addressing the operational period. We haven't  
12 reached a conclusion about the residual period  
13 yet.

14 As of July 6, which was probably  
15 the day I put this slide together, there were  
16 15 claims from the Norton Company with  
17 employment during this operational period.

18 Our sources of available  
19 information, this kind of describes the data  
20 search that we did in trying to find  
21 information that would help us do dose  
22 reconstructions. Of course, we had used our

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1 existing technical documents. None of those  
2 really are applicable to a site that did the  
3 kinds of materials in the kinds of way this  
4 site did.

5 We looked at our Site Research  
6 Database, which is kind of redundant because  
7 that is just the compendium of all of the  
8 information we have managed to gather from all  
9 of our searches. For data captures, we got  
10 information from DOE Legacy Management. We  
11 searched the NRC ADAMS database.

12 The successor firm to Norton is a  
13 company called Saint-Gobain, still located in  
14 Worcester, Massachusetts. We contacted them.  
15 We contacted the Massachusetts Department of  
16 Health whose regulator today but probably  
17 would not have been much regulation back in  
18 this period. A couple of NARA, National  
19 Archives and Records Administration, record  
20 repositories and then other places: Oak Ridge  
21 National Laboratory, U.S. Transuranium and  
22 Uranium Registries, the OSTI database, we did

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1 internet searches, the CEDR database, the  
2 Hanford DDRS, which is a document database, an  
3 extensive database. I think it is  
4 Declassified Document, something storage and,  
5 Retrieval System. National Academies Press.  
6 Anyway, we looked pretty hard trying to find  
7 information and we just didn't come up with a  
8 whole heck of a lot that described in detail  
9 the kind of information that was done there.

10 This little tally of the claims  
11 from Norton are 20 total, 15 of which that  
12 fall into the Class Definition. That doesn't  
13 necessarily mean that they are all SEC cancers  
14 but there are 15 that fall into this period or  
15 at least have employment in this period.

16 There were two done previously.  
17 Those were compensable and they were done with  
18 that what I just talked about, the  
19 overestimating efficiency process, using for  
20 compensable claims. So that is how two of  
21 them were done.

22 And none of the claims that we have

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1 so far have any internal dosimetry or external  
2 dosimetry information specific to those  
3 people.

4 Now in terms of the work that  
5 Norton did, it manufactured several products  
6 under contract with the AEC during this  
7 period. For instance, refractory crucibles  
8 and rods from beryllium oxide and uranium  
9 oxide, various proportions in various shapes.  
10 Crucibles containing varying amounts of  
11 thorium, using thorium ore and other forms.  
12 And then they also used a thorium oxide  
13 product or produced that called Norton fused  
14 oxide. I believe that was fused with other  
15 ceramics as well. That is why it was called  
16 fused.

17 The Norton Company performed  
18 research and development activities with  
19 various enrichment chemical compounds. Now,  
20 in these processes, Norton Company processed  
21 uranium ores, concentrates and scrap as well  
22 as thorium ores and metals.

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1           So in other words, it did some  
2 purification of uranium and thorium, which  
3 then places the progeny chain in  
4 disequilibrium with uranium and thorium and  
5 gives you a particularly difficult  
6 reconstruction issue to deal with.

7           And we have very limited  
8 documentation about the amount of material at  
9 present at Norton. We have, I think, one or  
10 two periodic reports of, this is the inventory  
11 on-hand today without anything to talk about  
12 how much did we receive through the year, how  
13 much through-put was there in the year, to  
14 understand really how much went through the  
15 place.

16           So we have not been able to make a  
17 good judgment about really what quantity of  
18 radioactive material they had at the site  
19 during this period for the AEC.

20           With respect to the locations of  
21 the covered work, we don't know what that was  
22 either. Some of the information we have would

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1 indicate that this maybe wasn't a terribly  
2 large and extensive operation. It is a fairly  
3 large plant and this may have been a fairly  
4 small operation but we don't really know. We  
5 don't know where the raw material was brought  
6 into or stored, moved around. We don't know  
7 how it was moved around. We don't know how  
8 the product was moved around the facility. We  
9 don't know how many waste materials that would  
10 have been generated during the process were  
11 moved around the facility. And we don't know  
12 how people moved around the facility, whether  
13 there was some isolated areas that people were  
14 not allowed to go to or whether people could  
15 move freely throughout. We just don't know  
16 much about movement, either the radioactive  
17 material or the people around the facility.

18 Internal exposure potential, of  
19 course, when you are dealing with these  
20 materials and you are dealing with oxides and  
21 you are making them into fused shapes, because  
22 that means putting the powder into a mold and

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1 shaping it and heating it, usually that is  
2 what they did. You have potential for  
3 inhalation and ingestion from uranium,  
4 thorium, and their respective progeny.

5 And for the external exposure,  
6 there is some photon and beta source from  
7 operations with uranium and thorium and so  
8 there would be some potential for external  
9 exposure as well just from being in proximity  
10 to these materials.

11 We have not found any external  
12 monitoring data for people. I think we have  
13 maybe four film badge results that appear to  
14 be hung up as area dosimeters. They don't  
15 seem to have names associated with them. We  
16 have 13 urine sample results from a couple  
17 year period. This is kind of what makes you  
18 think that maybe this was a fairly small  
19 operation. There is a report that has five  
20 names on it. There is another report that has  
21 like eight names on it. None of those names  
22 are in our claimant database so none of that

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1 applies to actual claimants that we have.

2           And we don't really have  
3 information associated with medical x-rays but  
4 we believe that we can use one of our  
5 technical documents and can actually  
6 reconstruct the medical doses to the same.

7           Our conclusion then, in terms of  
8 the feasibility is that we have insufficient  
9 data from which to draw conclusions regarding  
10 the potential magnitude of internal doses from  
11 exposure to uranium, thorium, and their  
12 progeny of radionuclides.

13           And for external exposures, we have  
14 insufficient data from which to draw  
15 conclusions regarding the potential magnitude  
16 of the external exposures from uranium and  
17 thorium work. You know, uranium work, you  
18 wouldn't expect them to be too high. We just  
19 don't know what they are. You know, thorium  
20 work, theoretically they could be somewhat  
21 higher but again, we have got no information  
22 to really determine how large they are.

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1           We believe that we can reconstruct  
2 medical dose using the complex-wide technical  
3 documents that we use in most cases. And if  
4 we encounter personal monitoring data that is  
5 applicable, we intend to use that in the dose  
6 reconstructions. We don't think we will have  
7 -- we certainly don't see any hope of getting  
8 sufficient data to do some sort of coworker  
9 model for unmonitored people but if we happen  
10 to come across any monitoring data, either  
11 internal or external for people, we will use  
12 it if we have to do a partial dose  
13 reconstruction. This would only be applicable  
14 if someone is not paid through the SEC and we  
15 have to do a partial dose reconstruction for a  
16 non-compensable or a non-SEC cancer. We will  
17 use any information we find that is relevant  
18 to that individual.

19           So, our summary of feasibility then  
20 for the period of January 1, 1945 through  
21 December 31, 1957, we find that we don't  
22 believe that we can reconstruct internal doses

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1 or external doses, other than medical. We do  
2 believe we can reconstruct medical x-ray doses  
3 during the operational period. This again,  
4 this feasibility -- this determination applies  
5 for '45 through '57, which is the operational  
6 period.

7 Health endangerment. The evidence  
8 reviewed in this evaluation indicates that  
9 some workers in the Class may have accumulated  
10 chronic radiation exposures through intakes of  
11 radionuclides and direct exposure to  
12 radioactive materials. And consequently,  
13 NIOSH is specifying that health may have been  
14 endangered to the workers covered by the  
15 evaluation who were employed for a number of  
16 days aggregating to 250.

17 We did not find any evidence of an  
18 event that would lead to a large scale, you  
19 know, very large doses in, essentially, a  
20 short period of time that would lead us to  
21 conclude that presence should be sufficient  
22 for inclusion in class. We believe 250 days

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1 is the potential for harm threshold.

2 So our proposed class for Norton is  
3 for all AWE employees who worked at Norton  
4 Company in Worcester, Massachusetts from  
5 January 1, 1945 through December 31, 1957 for  
6 a number of work days aggregating at least 250  
7 work days occurring either solely under this  
8 employment or in combination with work days  
9 within the parameters established for one or  
10 more other classes of employees in the SEC.

11 And the summary of our  
12 recommendation is that we find that we cannot  
13 reconstruct doses for compensation purposes  
14 during the operational period '45 through '57.

15 So we find that it is not feasible for us to  
16 reconstruct those doses and there was a  
17 potential for health endangerment.

18 So, that concludes my presentation.

19 CHAIRMAN ZIEMER: Stu, the 13  
20 uranium urine results, were those positive  
21 results or just urine samples reported being  
22 taken?

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1                   MR. HINNEFELD: Those were -- that  
2 is the sum total of a number of samples that  
3 were taken. Thinking back on the results,  
4 there were quite a number of zero results in  
5 those particular samples. It represents  
6 essentially two days of sampling. You, know  
7 eight one day and five a year later.

8                   CHAIRMAN ZIEMER: I was trying to  
9 get a feel for if one assumed that there was  
10 some reason to sample those people, perhaps a  
11 particular campaign or the highest exposed  
12 workers --

13                   MR. HINNEFELD: Well, I think --

14                   CHAIRMAN ZIEMER: -- and were the  
15 results positive, and would they provide any -  
16 - if most of them were zero, then you don't  
17 have a good basis for even bounding internals  
18 then, it sounds like.

19                   MR. HINNEFELD: I don't --

20                   CHAIRMAN ZIEMER: And a very short  
21 time period, I gather.

22                   MR. HINNEFELD: I mean, there are

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1 so few. They are, like I said, two sampling  
2 dates, essentially, out of the entire  
3 operational period.

4 CHAIRMAN ZIEMER: Right.

5 MR. HINNEFELD: We just didn't feel  
6 like they would provide sufficient  
7 information.

8 CHAIRMAN ZIEMER: And maybe I  
9 missed it but what is the actual workforce  
10 size of that plant?

11 MR. HINNEFELD: It wasn't in the  
12 report. We don't really have a good, firm  
13 number but from conversation with the current  
14 staff at the successor company, they estimated  
15 there could have been about 3,000 people  
16 working there at the time. The site is about  
17 a half mile by one and a half miles.

18 CHAIRMAN ZIEMER: So 3,000 people,  
19 the normal incidence of cancer could be a  
20 pretty sizable group.

21 MR. HINNEFELD: It sure could.

22 CHAIRMAN ZIEMER: Okay. Other

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1 questions, comments on this? Yes.

2 MEMBER CLAWSON: Stu, in the  
3 profile --

4 MS. CARIGLIA: Well the thing is  
5 that this sizeable group tested wrong because  
6 not everyone worked with the material. There  
7 was --

8 CHAIRMAN ZIEMER: Who is speaking,  
9 please?

10 MS. CARIGLIA: Lucrezia Cariglia  
11 from Worcester, Massachusetts.

12 MR. HINNEFELD: The petitioner.

13 CHAIRMAN ZIEMER: Oh. Oh, okay.  
14 Thank you.

15 MS. CARIGLIA: The size of the  
16 people, there are only -- for a perfect  
17 example, our office housed about 50 of us and  
18 because there were 100 employees in that  
19 office, being that the office were small, they  
20 put us onto shifts. One shift of 50 would  
21 work 7:00 to 3:00. The other shift would come  
22 in and take the evacuated seat and fill in

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1 those same desks, making it 100 employees in  
2 that one particular office.

3 Out of 100 employees in that  
4 office, there were four girls that did the  
5 actual counting, figuring the prices, et  
6 cetera. And each girl was assigned to its own  
7 job. And the other three did not come into  
8 contact with that work. That one particular  
9 girl only. There were four in one shift, four  
10 in the other shift. There were eight total  
11 girls that were working with this.

12 The other girls that did handle  
13 also as much as everybody else were the girls  
14 that passed the work out. The work was passed  
15 to the girl that was figuring the work and she  
16 never left her desk. And that same girl would  
17 come and give the work to you. She would give  
18 you the work and when she brought the fresh  
19 work, she would pick it up.

20 In the meantime, the girl that was  
21 figuring the work would constantly have a pile  
22 of these papers that were so dirty and so

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1 smelly and greasy and everything else,  
2 whatever, you know, powders and stuff, were so  
3 bad that the girls that figured it had towels  
4 to wipe their hands on. They were not even  
5 allowed to get out of the desk to go wash  
6 their hands. So they handed fresh towels  
7 daily because they knew that this work was  
8 that dirty. That was one, the girls that  
9 passed the work out.

10 And the third girl that handled it  
11 was the typist. The typists worked piece  
12 work. They had a little meter on the  
13 typewriter that totaled how many letters that  
14 they hit and each stroke that they typed. And  
15 at the end of the day, that little meter was  
16 removed from the machine and the girls were  
17 paid piece work for typing.

18 So those typists were the girls  
19 that handled this filthy papers also, which  
20 they never, ever left their seat either  
21 because there you cannot waste a second.

22 I one day decided to see exactly

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1 how many invoices that I figured in one day,  
2 which stunned me. I couldn't believe myself.

3 I figured over 1,000 invoices. I handled  
4 more than 1,000 of those filthy papers in one  
5 shift.

6 And every single day when I went  
7 home, I couldn't walk straight because I had  
8 such a pain as a pit out of the middle of my  
9 ribs. And then I would go home and I would  
10 rest and do what I had to do. Get up in the  
11 morning, I would be in perfect health, get up  
12 and go to work again. I came home every night  
13 with that pain again. And I don't know how  
14 many doctors I went to, how many x-rays there  
15 were. Those places are all closed because I  
16 am 84 years old and since then, those  
17 buildings have been torn down. Those doctors  
18 are all dead.

19 But one thing that I do remember  
20 very clearly, the girl that was typing those  
21 had been working before me and she was the  
22 very, very best typist in the place, suddenly

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1       one day started to make mistakes and they  
2       kept multiplying. And so she got called into  
3       the office and the boss, which you know, we  
4       weren't allowed to talk, to say hello,  
5       goodbye, or nothing because you had to be sure  
6       you kept work. And he told her either you  
7       find out why you are making these mistakes,  
8       you go to a doctor or you are going to be  
9       fired.

10               And of course, her husband was at  
11       war and when he came home from war with his  
12       leg that he lost at war, came home to a dead  
13       wife. Because what happened was she got a  
14       tumor in her head and she was going blind.  
15       And she went to the doctors. The girl never  
16       came back because she died from cancer.

17               The girl that was passing out the  
18       work and picking up the work also, I had left  
19       Norton Company because they were laying off  
20       girls left and right and I had gotten a job  
21       offer as office manager with double my pay. I  
22       am not going to lie about it. And I grabbed

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1 it. I told my boss, don't lay off one of the  
2 girls. You know, keep one of the girls and I  
3 will leave because I have a job offer.

4 And I am walking downtown, and the  
5 girl that passed the work out was Jenny, and I  
6 ran into Jenny. And she grabbed me and hugged  
7 me and cried and cried because she died from  
8 cancer, too. All of us got cancer. All 90  
9 percent -- I don't know how many of the girls  
10 that worked in that office died from cancer or  
11 a heart condition. It was the worst place I  
12 worked in 32 years of my days of work. And I  
13 had nightmares about it for years and years.

14 Years later, when I went back to  
15 work because I was raising my girls, and they  
16 graduated from school at 15 years old and were  
17 sent to college, I went back to work.

18 The first job that was offered to  
19 me was Norton Company. I said I will wash  
20 toilets before I go back to Norton Company  
21 with those working conditions that they had  
22 there. And we were under threat at all times

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1 that if we quit, we couldn't be hired anyplace  
2 else because they would see to it. So we had  
3 to stay there during the war.

4 Like I says, you hear about this in  
5 factories, not in an office. This place, like  
6 I said, the papers smelled so bad. When we  
7 went to lunch, when we had to go to the  
8 cafeteria, God forbid we were hungry, we had  
9 to walk through these parts of the factory  
10 that it was as cloudy of dust as it is on a  
11 foggy day near the ocean.

12 CHAIRMAN ZIEMER: Okay, thank you  
13 for that input. And I believe NIOSH has  
14 probably also interviewed this petitioner or  
15 somebody?

16 MS. CARIGLIA: Yes, they have.

17 CHAIRMAN ZIEMER: Yes, okay. So we  
18 have additional information from you as well.

19 MS. CARIGLIA: Right. I had a  
20 kidney removed for cancer and I had two feet  
21 of my colon removed from cancer.

22 CHAIRMAN ZIEMER: Right.

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1 MS. CARIGLIA: And I was very, very  
2 lucky because they had no CAT Scan. They had  
3 no colonoscopy. They had nothing in them  
4 days. So, I was very -- I am the only one  
5 living. I am the only one left. Janette Roy  
6 just passed away a short while ago.

7 I do have damage to my lungs also  
8 that has been discovered through x-rays, oh, I  
9 don't know, maybe 15, 20 years ago, I don't  
10 know how long ago, with no explanation.  
11 Nobody has any explanation. I never smoked in  
12 my life. No one in my family smoked that I  
13 lived with at home, my husband or my children.  
14 None of us smoke, drink or I can't even stand  
15 the smell of perfume. And there is no  
16 explanation. Why do I have damaged lungs and  
17 cancer?

18 Like I said, you know, it is very,  
19 very difficult. You can't even imagine or  
20 know what it was like. Of course you know,  
21 because everyone today will work under any  
22 conditions to have a job. I myself, if I had

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1 to put food on my table, I would go back to  
2 Norton no matter how bad it was.

3 CHAIRMAN ZIEMER: Okay, well thank  
4 you for that input.

5 Board members, I am going to ask  
6 you now if you have any additional questions  
7 for Mr. Hinnefeld relating to the activities  
8 at Norton.

9 Okay, go ahead Brad and then Josie.

10 MEMBER CLAWSON: I just had a  
11 question. I was reading in the profile here  
12 and stuff. Was this enriched uranium or do we  
13 know that much about this uranium?

14 MS. CARIGLIA: I can't hear you.  
15 There is a noise.

16 CHAIRMAN ZIEMER: This is a  
17 question for Mr. Hinnefeld. He is asked  
18 whether this was enriched or natural uranium.  
19 Mr. Hinnefeld will answer that.

20 MR. HINNEFELD: My recollection is  
21 there were some reports of some enriched  
22 uranium there, yes.

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1                   MEMBER CLAWSON: Do we know any of  
2 the enrichments? The reason why, this is kind  
3 of a double thing because it was shipped to  
4 Fernald and I just wanted to kind of follow up  
5 on it.

6                   MR. HINNEFELD: I don't recall. We  
7 don't have -- we have very incomplete  
8 information about what material they received  
9 and how much material they received. It is  
10 just we have sketches of it. We will have  
11 like a memo from a particular day when this is  
12 what we have online or particular orders. On  
13 this order, we want them to make so many of  
14 these crucibles, ceramic crucibles, using such  
15 and such beryllium and such and such percent  
16 uranium. We have some things like that. I  
17 don't recall now whether any of those -- I  
18 want to say some of those were enriched but I  
19 don't recall for sure.

20                   The reason I was wondering, is it  
21 called out 160 kilograms of uranium that was  
22 shipped back to Fernald and I was just trying

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1 to get a feel for if it was enriched or if it  
2 was natural or what it was doing. But he can  
3 look into that further down another aspect.

4 MR. HINNEFELD: Yes, there may be.  
5 We may have some information about it. I  
6 just can't recall it right now.

7 CHAIRMAN ZIEMER: All right.  
8 Josie?

9 MEMBER BEACH: Yes. Stu, I know  
10 this isn't on the table but could you give us  
11 an idea of the residual period that you are  
12 looking at, the time frame?

13 MR. HINNEFELD: Well, it started  
14 the year after the operation. The operation  
15 ran through '57. Right? And so it started in  
16 '58 and it ran through 2006. If you look on  
17 the facilities database, it runs through 2006.  
18 That is the publication date of our last  
19 residual radioactivity report. Now there is a  
20 new one I am thinking that is working its way  
21 through the Department and I don't know if  
22 that is going to change or not.

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1 MEMBER BEACH: Okay, thank you.

2 CHAIRMAN ZIEMER: Okay, Mark  
3 Griffon.

4 MEMBER GRIFFON: Yes, I think this  
5 is another one of those where we have to  
6 examine the definition of the Class. I mean,  
7 I think we just heard the petitioners say that  
8 it wasn't 3,000. In fact, it was a much  
9 smaller population that was involved in  
10 handling this stuff. So think there alone is  
11 some evidence.

12 And if it was like 2,500 as opposed  
13 to 3,000 and we couldn't sort it out, that  
14 would be one thing but I think it is a lot  
15 lower. And I know, maybe you don't have it  
16 right now but --

17 MR. RUTHERFORD: I think the  
18 Petitioner was talking about her end of it,  
19 her experience.

20 MEMBER GRIFFON: Okay.

21 MR. RUTHERFORD: Her end of it with  
22 documentation and such and identifying that

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1 clerks were also exposed as well.

2 MEMBER GRIFFON: Okay.

3 MR. HINNEFELD: Yes, I would take  
4 her statements as saying that this plant was  
5 not very well controlled and that personnel  
6 movement in this plant was not controlled and  
7 everyone who was there in the factory part of  
8 the plant, I mean, that is what I took from  
9 her discussion.

10 CHAIRMAN ZIEMER: Yes, my  
11 understanding is that from --

12 MS. CARIGLIA: May I say something?

13 CHAIRMAN ZIEMER: -- is it Ms.  
14 Cariglia?

15 MS. CARIGLIA: Cariglia.

16 CHAIRMAN ZIEMER: -- Cariglia, that  
17 your group was actually more like clerks but  
18 that the surroundings were very dusty and  
19 dirty from the work in the plant. Am I  
20 understanding that correctly?

21 MS. CARIGLIA: First of all, you  
22 have the history that one company, the U.S.

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1 Steel, I also worked there, there is a huge  
2 land coverage and each one of those plants did  
3 something different.

4 Let's say for an example, I am  
5 going to use the kitchens because that is the  
6 best I can do. You have five kitchens and one  
7 kitchen might be cooking beans, and other  
8 kitchen may be cooking spaghetti, and another  
9 kitchen is cooking chicken. And this is the  
10 same thing applied to the factories. So each  
11 factory was working on a different product.

12 CHAIRMAN ZIEMER: Okay.

13 MS. CARIGLIA: People that worked  
14 with the product that I particularly worked  
15 with myself, that I handled myself, I would be  
16 the only one handling those papers, as I  
17 explained to you. The other person that would  
18 handle it was the girls that passed out the  
19 work and the girls that typed from that. I am  
20 telling you that even though there were 100  
21 girls working in that particular office, there  
22 were only three of us that were handling that

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1 filthy paper, the particular papers that were  
2 soiled with oil and had dust and all that sort  
3 of stuff.

4           These other girls at our office  
5 they would handle, that were sitting, most any  
6 particular girl ever handled would be a body  
7 of 50 because they were doing a different line  
8 of work. That applies to the factory.

9           The same thing with these factories  
10 that I walked through myself. Those factories  
11 that I walked through, there were maybe 15  
12 guys working in there with masks on at all  
13 times. They always had masks. A lot of  
14 times, they had covering clothes like the  
15 astronauts. You know, they had different  
16 kinds of overalls, special hats, all kinds of  
17 special clothing. But I don't know why they  
18 had us walk through there each time we went to  
19 the cafeteria. Here they act so fussy, you  
20 know, covering the guys but these girls are  
21 walking through with high heels and nylons,  
22 and they used to say you had to wear white

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1 gloves to work in that office, they were so  
2 particular. They had us walk through that  
3 mess, regardless what to me don't make sense.

4 Nothing made sense to me but little do I know  
5 now that I am 84 years old.

6 You cannot compare whether they had  
7 5,000, 8,000, or 2,000. This doesn't matter.

8 It has nothing to do with it because  
9 everybody did not work with that uranium or  
10 whatever they were working with. It was only  
11 a handful of people that were hand-picked.

12 The same thing worked at the wire  
13 mill. They had special people to do special  
14 jobs and they also had to wear uniforms. Not  
15 the whole company. It doesn't matter how many  
16 people worked in the company.

17 CHAIRMAN ZIEMER: Okay, thank you.

18 That is very helpful. That maybe speaks  
19 somewhat to what Mark's question was. But I  
20 think one of the questions will be can we  
21 distinguish who those are. And Larry, can you  
22 help?

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1 MS. CARIGLIA: Well, you can't --

2 CHAIRMAN ZIEMER: Yes, Mr. Elliott  
3 is going to speak now.

4 MR. ELLIOTT: You know, the point I  
5 want to make here is that through all of the  
6 work, research that we have done on this site,  
7 we are not able to figure out who worked on  
8 the uranium crucibles. Okay? Where it was  
9 done. We can't locate the building on this  
10 one mile by one and a half mile site.

11 So you know, we feel that we have  
12 got the Class definition right. We have  
13 vetted it with DOL and I would ask you to take  
14 this one up and vote it yes because I am  
15 campaigning for these old claims and this has  
16 about six of the oldest claims that we have  
17 got, two or three of them that are over six  
18 and a half years old. We have nothing that we  
19 can do for these claimants, except take this  
20 action.

21 MS. CARIGLIA: Yes, because they  
22 are all dead. It is so unfair. The thing of

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1 it is, I am really, really -- have to tell you  
2 when we worked there, I did ask questions. I  
3 am not going to lie. Because I was 18 years  
4 old and I wanted to learn. I wanted to learn  
5 every minute of my day. And we could not get  
6 answers. They would not tell us anything. No  
7 matter what you asked, it is a military  
8 secret.

9 CHAIRMAN ZIEMER: Yes, well, we  
10 understand and we appreciate the help that you  
11 have given us here today. So we are going to  
12 proceed now with final discussion on this.

13 Board members, do you have any  
14 questions or comments? And if not, it would  
15 be in order to have a motion.

16 MS. CARIGLIA: Okay, because I wish  
17 I could help you.

18 CHAIRMAN ZIEMER: Oh, you have been  
19 very helpful. So we are ready to proceed  
20 here, thank you.

21 MS. CARIGLIA: Thank you.

22 MEMBER GRIFFON: Stu, as far as

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1 outreach, you might have said this while I was  
2 reading, I apologize, but what kind of  
3 outreach did you do in the Worcester area?  
4 Was there a union involved? Did you get -- I  
5 am imagining Norton might have had machinists.

6 I am not sure.

7 MS. CARIGLIA: Oh, they had  
8 machinists.

9 MR. HINNEFELD: In discharging what  
10 we are trying to do here, which is determine  
11 whether it is feasible to do this  
12 reconstruction.

13 MS. CARIGLIA: We had no union.  
14 There was no union.

15 MR. HINNEFELD: Okay, thank you.  
16 We are trying to decide is it feasible to do  
17 dose reconstruction. And we are not really  
18 trying to advertise the program.

19 And in order to determine  
20 feasibility of dose reconstruction, we need to  
21 know if we can reconstruct, in this case, it  
22 is a very difficult issue. You have thorium,

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1 uranium, and their progeny, not in equilibrium  
2 and that is a difficult reconstruction.

3           So we did not embark on an  
4 interview campaign. We have not had, as far  
5 as I know, a formal outreach there. And so we  
6 did not embark on an interview campaign  
7 because we didn't believe that anyone would be  
8 able to describe to us sufficient technical  
9 information that this is how you reconstruct  
10 thorium doses. So we did not engage.

11           MEMBER GRIFFON: Yes, and I do  
12 appreciate Larry's, you know, these very old  
13 cases. I do appreciate that. But I also  
14 can't imagine that there is not people in the  
15 area that can tell you what buildings this  
16 work was done. You said you can't even  
17 identify which buildings did the work.

18           I mean, I can't imagine. I have  
19 done a lot of this risk mapping stuff at very  
20 old facilities and you can usually drum up,  
21 five, six, ten, people and get some useful  
22 production information out of it.

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1 MR. RUTHERFORD: Here is the  
2 question I have for you, Mark. Is that going  
3 to answer the question? If we find out, first  
4 of all --

5 MEMBER GRIFFON: It could help  
6 define the Class.

7 MR. RUTHERFORD: -- if we have  
8 indication --

9 MEMBER GRIFFON: It could help  
10 define the Class. It could help refine the  
11 Class. That is what I am saying.

12 MR. RUTHERFORD: No, it can't.

13 MEMBER GRIFFON: I'm saying it can.

14 MR. RUTHERFORD: Because if we do  
15 not know the environmental releases. If we do  
16 not know how the material is transferred  
17 onsite, if we don't know where the material  
18 was stored, we don't know enough information  
19 about those things, how do we limit the Class?

20 We can limit the Class to all  
21 workers that worked in Building X. And then  
22 we have to reconstruct the doses for all

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1 employees that worked outside that building.  
2 How are we going to do that? If we do not  
3 know any environmental releases, we do not  
4 know how the material was moved around the  
5 site, it is very difficult.

6 That is the reason why we make a  
7 decision that will worker interviews help us  
8 defining the Class? Will worker interviews do  
9 anything to change our situation? And that is  
10 how we come to that.

11 We do have indication that they  
12 possibly, that the work was done in a building  
13 called the Industrial Building. But again, we  
14 do not know beyond that how the material was  
15 moved, the personnel, how they were  
16 controlled, environmental releases and so on.

17 MR. ELLIOTT: Let me add, too, this  
18 is Larry Elliott again, these kind of  
19 processes, as you know, Mark, are very dirty,  
20 this kind of work. And one of the things that  
21 I would say that we did hear from the  
22 interviews that were conducted with claimants

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1 and especially what you have heard from the  
2 petitioner today, serving in a job  
3 classification that doesn't really put that  
4 individual in on the process floor but yet  
5 dealing with stuff that comes from the floor,  
6 was compelling to us.

7 We heard loud and clear that this  
8 was messy, that the paper itself stank. You  
9 know, their hands --

10 MEMBER GRIFFON: Well, that is why  
11 I asked if you heard that, who did you  
12 interview or was it in CATI interviews?

13 MR. ELLIOTT: Yes, they were CATI  
14 interviews.

15 MEMBER GRIFFON: Okay, fine. All  
16 right.

17 MR. ELLIOTT: Yes.

18 MEMBER GRIFFON: Okay.

19 CHAIRMAN ZIEMER: Wanda Munn has a  
20 comment.

21 MS. CARIGLIA: Now, what is the  
22 question you would like me to answer?

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1                   CHAIRMAN ZIEMER:    No, we have no  
2 further questions for you. Thank you.

3                   MS. CARIGLIA:    Okay. Thank you. I  
4 hope the petition will be approved.

5                   CHAIRMAN ZIEMER:    Wanda, did you  
6 have a comment?

7                   MEMBER MUNN:    My only comment is  
8 just an observational experience. It would be  
9 difficult to imagine why any enriched uranium  
10 or thorium would be used for crucibles in the  
11 type of material that has been described here.

12                  But that having been said, I am prepared to  
13 move that we accept the proposed class of  
14 employees at Norton Company in Worcester,  
15 Massachusetts for the 83.14 SEC petition that  
16 has been presented to us as NIOSH has done so.

17                  CHAIRMAN ZIEMER:    I will take that  
18 as a motion to approve the NIOSH  
19 recommendation.

20                  MEMBER CLAWSON:    Seconded.

21                  CHAIRMAN ZIEMER:    And seconded by  
22 Brad.            Is there discussion, further

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1 discussion, pro or con?

2 (No response.)

3 CHAIRMAN ZIEMER: There appears not  
4 to be. I take it that we are ready to vote on  
5 this petition, which would be the motion is to  
6 recommend to the Secretary the addition of  
7 this class to the Special Exposure Cohort. We  
8 will take a roll call vote. We will get Dr.  
9 Melius' vote later.

10 MR. KATZ: Mr. Clawson?

11 MEMBER CLAWSON: Yes.

12 MR. KATZ: Mr. Griffon?

13 MEMBER GRIFFON: Abstain.

14 MR. KATZ: Ms. Munn?

15 MEMBER MUNN: Aye.

16 MR. KATZ: Mr. Presley?

17 MEMBER PRESLEY: Yes.

18 MR. KATZ: Mr. Schofield?

19 MEMBER SCHOFIELD: Yes.

20 MR. KATZ: Dr. Roessler?

21 MEMBER ROESSLER: Yes.

22 MR. KATZ: Dr. Poston?

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1 MEMBER POSTON: Yes.

2 MR. KATZ: Dr. Lockey?

3 MEMBER LOCKEY: Yes.

4 MR. KATZ: Mr. Gibson?

5 MEMBER GIBSON: I'll abstain.

6 MR. KATZ: And Ms. Beach?

7 MEMBER BEACH: Yes.

8 MR. KATZ: And Dr. Ziemer?

9 CHAIRMAN ZIEMER: Yes.

10 MR. KATZ: And I will get Dr.  
11 Melius' vote. We will get Dr. Melius' vote  
12 tomorrow.

13 CHAIRMAN ZIEMER: Well, the ayes  
14 have it since the abstentions don't count as  
15 negatives.

16 So, the motion carries and an  
17 appropriately worded recommendation will be  
18 presented to the Board for final review  
19 tomorrow and we will get Dr. Melius' vote as  
20 well.

21 Thank you very much. And thank you  
22 for Ms. Cariglia for being on the line with us

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1 today.

2 MS. CARIGLIA: You're welcome.

3 CHAIRMAN ZIEMER: We are going to  
4 take a break until 3:30 and we will resume at  
5 that point.

6 (Whereupon, the above-entitled  
7 matter went off the record at 3:08 p.m. and  
8 resumed at 3:37 p.m.)

9 CHAIRMAN ZIEMER: Okay, thank you.

10 We are ready to resume the session. Our next  
11 item of discussion deals with Blockson. And  
12 you may recall and we have had a number of  
13 discussions on the Blockson SEC petition.  
14 That petition itself is on the table. But  
15 there was an issue under discussion relating  
16 to the so-called radon model. I believe at  
17 our last meeting Dr. Neton presented the, I  
18 guess we would call it the radon model for  
19 Blockson and that was promulgated to the Board  
20 as well. Mr. Griffon, particularly, had some  
21 questions and, I guess, responses to the radon  
22 model. And Mark, if you want to sort of

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1 outline -- and I believe the Board members  
2 have received copies of the responses but we  
3 will get those on the record here. And Mark,  
4 you can review your take on this and any  
5 concerns that may remain that you have.

6 Did you have a comment as well?

7 MR. KATZ: Just to be clear, Mark  
8 has provided for the Board and for OCAS and  
9 all parties involved, a set of questions about  
10 the model. And then OCAS has responded to  
11 those questions. So those are both available  
12 to the Board members in part of the  
13 proceedings.

14 CHAIRMAN ZIEMER: Right. And you  
15 should have received those, I guess it was a  
16 couple of weeks ago. I forget the exact date.  
17 Larry?

18 MR. ELLIOTT: Well, I want to make  
19 note that we sent this also to the  
20 petitioners.

21 CHAIRMAN ZIEMER: Right.

22 MEMBER GRIFFON: Okay, yes, I guess

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1 I did distribute the questions and they were -  
2 - I guess I was a little tardy in getting  
3 those out, too. And I appreciate Jim Neton  
4 turning them around fairly quickly.

5 I guess the fundamental -- there is  
6 a number of little things that I have  
7 questions on. But one of my biggest sticking  
8 points still, and this I am not sure we can  
9 ask NIOSH much more on this but for me anyway,  
10 personally, I still have a concern about this  
11 assumption of uniform instantaneous mixing.  
12 And the question I raised several meetings ago  
13 and also in these question was the idea of  
14 could you have concentration gradients that  
15 were near certain operations? It seems like  
16 we are talking about the sulfuric digester a  
17 lot. But you know, concentration gradients  
18 that developed that basically; the example I  
19 framed was an individual works two to three  
20 hours at a certain operation, with a higher  
21 concentration gradient and is there any chance  
22 that that kind of scenario would produce

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1 higher exposures that would be not be bounded  
2 by the 95th percentile in the current NIOSH  
3 model?

4 And you know, I asked if that could  
5 be modeled, if that kind of scenario could be  
6 modeled. And there wasn't a model response.  
7 There was a response sort of stating NIOSH's  
8 position. I won't restate that. People can  
9 read that but basically they said that the  
10 95th, they felt, would bound for several  
11 reasons and also that the 95th is quite higher  
12 than a lot of data that is available, even  
13 though it wasn't from the time period.

14 So a number of factors, they are  
15 saying that basically they feel it would  
16 bound. I don't want -- I will stick to my  
17 points, not NIOSH's position.

18 You know, and so that is one of the  
19 primary things that I am still concerned about  
20 and I am just going over my notes here. Some  
21 of the particular things in the model that I  
22 raised in the questions, for those that didn't

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1 look at them, the fraction of radon released  
2 this f value in the model and the Monte Carlo  
3 model that they used, they set the range from  
4 zero to 0.7. I sort of understand the 0.7  
5 ceiling that was discussed with some other  
6 experts and with SC&A. I think SC&A had  
7 originally set it to one, assuming that all of  
8 the radon would be released but that would  
9 sort of scale back.

10 I am not sure I understand putting  
11 the bottom value at zero but that is more of a  
12 minor point. But I assume that there would  
13 always be some small fraction of radon  
14 released. So, like I said, that, I don't  
15 think, is a huge point to be made but more  
16 like a Site Profile type of issue.

17 The building volume, I did have  
18 some concerns about this. Not only where this  
19 number came from. I think there is still, at  
20 least in my mind, a little confusion on that.

21 I think they do have a map with the  
22 footprint. The height was sort of through

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1 interviews or through an assumption that it  
2 was the same height as Building 55, I think.  
3 I am not sure about that.

4 But then the building was also, I  
5 think divided for another production process.

6 I am not sure. I think NIOSH assumed there  
7 was a physical boundary there and there may or  
8 may not have really been a physical boundary.

9 But one thing I noted in my questions was  
10 that there was no accounting for equipment and  
11 this is large equipment in this building that  
12 would have displaced some of the volume where  
13 the concentration was averaged over. So that  
14 wasn't sort of taken out.

15 And I think NIOSH has sort of  
16 indicated to me that they just wouldn't have  
17 that information to be able to do that anyway  
18 and that was another reason they used the 95th  
19 percentile, because they didn't have that  
20 information.

21 So I start to, you know, my concern  
22 there again is that you see this trend of, you

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1 know, it is a high value. It sort of takes  
2 care of all ills that we don't know about and  
3 that is one of my concerns in the model.

4 Another one is the production rate,  
5 6,000 tons a year. The best I can understand  
6 it is this came from one memo. No, 6,000 tons  
7 a week. I'm sorry. Your response said a year  
8 in one spot and I think that was a typo, yes.

9 So, 6,000 tons a week was the production rate  
10 and I think that just came from one memo. I  
11 am not sure if that was really corroborated  
12 with interviews or how, you know, how that was  
13 sort of, you know, finally resolved.

14 And that also ties in with the 160  
15 hours per week and I have already brought this  
16 one up before. But the question of whether  
17 this production was going on, basically 24  
18 hours a day, if you don't assume, if you  
19 assume an 8-hour it seems sort of -- that is  
20 why I wanted to understand because I have read  
21 some of the transcripts indicating that  
22 people -- and I thought it was referring to

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1 Building 55. I may be wrong on this and that  
2 is why I am raising it, where they did talk  
3 about working the three shifts or having  
4 constant operation in the building.

5 If this operation, for instance,  
6 was processing 6,000 tons a week and it was  
7 only doing it on an eight or ten hour shift,  
8 then obviously the concentrations go up by a  
9 factor of three. You know, so you are  
10 processing more volume in a shorter time.  
11 Anyway, the concentrations might go up, maybe  
12 not by a factor of three but that might affect  
13 it.

14 And again, it just raises that  
15 question of another unknown and whether people  
16 accept that the 95th is just going to take  
17 care of that. I don't know.

18 So those are, I think those are the  
19 main things that I have left. And to stress  
20 the main one is this concentration gradient  
21 question that, you know, I just envisioned and  
22 maybe I'm wrong about my picture of this

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1 facility but I do understand now that the --  
2 well, first of all, I am not even certain in  
3 my mind anyway that the sulfuric -- that the  
4 highest concentration gradient would  
5 necessarily be near the digester tanks. I  
6 mean -- well, I will just leave that at that.

7 But if I think about the digester  
8 tanks with the sulfuric acid radon coming out  
9 of these tanks, it seems to me that you are  
10 going to have more radon in a higher  
11 concentration gradient near the tank and  
12 ventilation will start to work and pull it out  
13 of the building, you are not going to get sort  
14 of this mixing throughout this huge warehouse  
15 instantaneously.

16 So how high are these gradients?  
17 Can you model by sort of putting a building  
18 around the digester tanks from eight, ten  
19 feet, I don't know. These are the questions I  
20 raised.

21 And then the other question is,  
22 that may not be the highest -- I mean, I

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1 understand these are on the third floor and  
2 would workers be in those areas for two of the  
3 -- what are the proximity with the workers in  
4 the highest areas concentration. So that is  
5 one thing.

6           The other thing when you look at  
7 it, I mean, I was trying to look at some of  
8 the sampling data and getting a little  
9 confused, I might add, because I am not sure I  
10 was comparing apples and apples because there  
11 is quite a bit of radon data from other years  
12 but I am not sure it is always -- when I was  
13 looking at it, I wasn't sure if it was always  
14 the processes that were going on in Building  
15 40. But you do see quite a bit of variability  
16 in the samples.

17           And oftentimes I saw some of the  
18 higher values were not necessarily associated  
19 with these processes that we expect were the  
20 biggest radon generators.

21           Now, the magnitude of these values,  
22 I will say as Jim has stated again and again,

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1 are much lower than the ones derived in this  
2 model but it makes me wonder whether we are  
3 even, you know, again, just to take the purest  
4 vision of this, if you have instantaneous  
5 mixing and you sample throughout the building,  
6 you should get the exact same value  
7 everywhere, given some error on the sampling.

8 But you should get the same values. And you  
9 know, the sampling in later years, you are not  
10 seeing that. So there is obviously some  
11 gradients. Are they significant enough to be  
12 above the 95th? That goes back to my main  
13 concern.

14 And I just feel that, you know, I  
15 am not sure we know enough. I am not sure we  
16 can model that scenario. And I would argue  
17 that without that information, I think we  
18 might be trying to convince ourselves that  
19 this is a high value. It can't be this much  
20 higher like Mallinckrodt because of what we  
21 know about the facility. And we raise it to  
22 the 95th because we have all of these

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1 unknowns. But do we really know, you know,  
2 are we really defining it through modeling or  
3 are we just kind of stabbing at a number that  
4 is kind of a medium level radon value.

5 So, anyway, I will leave it at that  
6 and let others weigh in.

7 Silence.

8 CHAIRMAN ZIEMER: Well, other Board  
9 members, as you have reviewed the information,  
10 do you have additional comments on this issue?

11 Granted, it is fairly technical and I have  
12 talked some with Mark about it as well. And I  
13 don't think -- there is no way to perfectly  
14 model this and you have to decide what the  
15 objective of the model is. I think from, I  
16 believe NIOSH has tried to find a model that  
17 they believe will bound the situation, as I  
18 understand it. And as I understand Mark's  
19 concern, it has to do with whether or not  
20 there are gradients that would provide  
21 concentrations that indeed were outside what  
22 the bounding value is, is really what it boils

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1 down to.

2 The kind of bounding that has been  
3 done in the past in other situations, not  
4 necessarily with radon, always allows for some  
5 values that are actually higher than the  
6 bounding value. I believe this is correct.

7 And Jim, you can correct me if I am  
8 wrong but what we are looking at has to do  
9 with the probability that those higher numbers  
10 apply to a very large fraction of those who  
11 would be exposed. In general, you would  
12 expect the correct bounding value to pretty  
13 much cover at least most of the workers. The  
14 only way to get a bounding value that you are  
15 sure that covers 100 percent is to have an  
16 outrageous value which is not realistic.

17 So, somewhere between these, the  
18 issue seems to boil down to how well has the  
19 NIOSH bounding value approached or how  
20 different is the end top of your gradient in  
21 your mind, let's say just intuitively, but how  
22 far are those apart? And right now we don't

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1 have a good feel for that, I guess.

2 I am trying to get a feel, and this  
3 is somewhat intuitive. Because you obviously  
4 never have instant mixing but you also don't  
5 have gradients that hang around for a long  
6 period of time, unless something is forcing  
7 them to remain as they were, either through  
8 the feeding of a source term or some external  
9 constraints.

10 Otherwise, as I picture the radon  
11 coming off and this normally would be heavier  
12 than air, I guess it would be moving downward  
13 but then you may have temperature gradients  
14 but there are forces that are going to be  
15 mixing that, it seems to me, the combination  
16 of temperature -- I don't know, how critical  
17 is the issue raised about the size? Are we, I  
18 mean, if the building size is off a little  
19 bit, that is one thing. If it is off a great  
20 deal, that changes things. So I don't know.  
21 That would seem less critical.

22 I am trying to get a feel for

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1 whether or not we are real far apart or if  
2 there is a way to come to closure on this.  
3 You know, in the end it may be that -- because  
4 we are not going to have a definitive answer.

5 I think you could modify the model but there  
6 is always going to be a question of whether or  
7 not it captures the issues that have been  
8 raised. I don't know how well they can be  
9 captured. So, I am trying to get a feel for  
10 sort of how far apart we are on this.

11 The extent to which that will  
12 affect the outcomes, which is making the right  
13 decision also, right now the action on the  
14 petition itself lies on the table and is kind  
15 of awaiting this issue, I believe. Okay?

16 MEMBER BEACH: Paul, I know Dr.  
17 Melius isn't here but he also had some  
18 questions and there was email back and forth  
19 and he is, of course, not here to speak for  
20 himself.

21 CHAIRMAN ZIEMER: Okay. Do you  
22 have the questions or does someone have his

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1 questions?

2 MEMBER BEACH: Well, I have the  
3 emails but probably wouldn't do a very  
4 justifiable attempt at explaining it.

5 CHAIRMAN ZIEMER: Okay. Well, one  
6 possible -- and I don't want to cut off  
7 discussion here, if the Board wishes, we can  
8 defer further discussion on this until our  
9 work session tomorrow. You know, I am hopeful  
10 at some point we can remove this from the  
11 table and take action.

12 The effect of leaving it on the  
13 table and no action is that nothing happens.  
14 I know we were split on this and we may  
15 continue to be split and the effect is, in a  
16 sense, is the same as leaving it on the table.

17 But I think in fairness to the petitioners  
18 and others, we have to come to some kind of  
19 closure on this site, regardless of whether or  
20 not we can agree on it or not.

21 And you know, it is okay if we  
22 can't agree on it. That is not, you know, we

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1 are not bad people if we can't agree. It is  
2 all right to disagree. And you know, that may  
3 be where we end up. That is okay. And you  
4 understand the sense in which I say it is  
5 okay? It may not feel okay to us individually  
6 because we will not have reached a sort of a  
7 consensus but -- yes.

8 MEMBER GRIFFON: I mean, the other  
9 important factor for at least the way I am  
10 considering it is that this, and I think Jim  
11 Neton has mentioned this, that this approach  
12 may be used at other sites. At least I am  
13 thinking of one Texas City, right? So the  
14 importance on this model is perhaps beyond  
15 Blockson. You know?

16 And the other thing, and you  
17 characterized pretty much the explanation. It  
18 is not necessarily just the concentration  
19 gradients but it is also the idea of the  
20 occupancy and concentration gradients in  
21 combination. But you basically characterized  
22 my concerns.

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1           But the other thing in my mind as I  
2           am thinking through this is the plausible  
3           circumstances that we come back to in the SEC  
4           stuff. And can we model? Is this a plausible  
5           model? And that is why I am thinking about  
6           what I described, as you described, coming out  
7           of these tanks and stuff like that.

8           And I can see, sort of, a situation  
9           where you have that constant gradient because  
10          the production is -- if that is true, the  
11          production is 160 hours a week. This stuff is  
12          going through it constantly. So, you know, I  
13          thought that the uniform instantaneous mixing  
14          model is not really in my mind the plausible  
15          model. So then, can we do the other and if we  
16          don't have enough information to model that,  
17          then I think that is the way we have to  
18          consider this.

19                 CHAIRMAN ZIEMER: I suppose, and  
20                 again, this is off the top of the head because  
21                 you have thought a lot more about it than I  
22                 have, but if you have a constant source term

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1 pumping things out and some other constraining  
2 parameters around, you would expect some kind  
3 of an equilibrium to occur after some period  
4 of time, whether it is instantaneous or within  
5 a, in terms of the long workweek, in terms of  
6 a relatively short period of time. And it may  
7 very well have a gradient to it. I mean, most  
8 models are simplifications of real life.

9 I always liked, my friend Dan Strom  
10 at Battelle always says, most models are poor  
11 but some are helpful. And there is a sort of  
12 realism to that because models are only  
13 simplifications of real life which is often  
14 complex.

15 Well, if there are -- oh, Wanda  
16 Munn has a comment. I'm sorry I overlooked  
17 it.

18 MEMBER MUNN: Just a sort of  
19 common-sense approach to the question of  
20 gradients. Please remember that in the  
21 Blockson facility, we have been told  
22 repeatedly that everybody did everything.

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1 That means, no one did one single job all the  
2 time. They didn't even do the same single job  
3 throughout one shift. They moved around from  
4 one place to another.

5 In addition to the normal air  
6 currents that would occur in any facility,  
7 especially one where large mixing tanks were  
8 being used and where people were moving from  
9 one place to another, any gradient that might  
10 occur would not create an exposure scenario  
11 that would focus on one or more individuals.  
12 Since the people move around and the air moves  
13 around, and the material moves around, you  
14 certainly are not going to get stagnant  
15 gradients even in the mid-winter when the  
16 building was not open, which was about the  
17 only time the workers have told us the  
18 building wasn't open. When it wasn't really  
19 and truly extremely cold, they opened what  
20 they called the barn doors and had a  
21 considerable amount of air movement there.

22 So common sense would tell you that

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1 the gradient problem wouldn't appear to be a  
2 real deal-breaker.

3 CHAIRMAN ZIEMER: Okay, thank you.

4 Other comments?

5 (No response.)

6 CHAIRMAN ZIEMER: Then if there is  
7 no objection, I will, the Chair will exercise  
8 the prerogative of deferring further action  
9 until tomorrow until we get the additional  
10 input.

11 MEMBER GRIFFON: I can at least  
12 partially respond to that. I will take the  
13 bait a little bit.

14 You know, my scenario that I laid  
15 out, I did not, and I did hear that from the  
16 transcripts and stuff that workers said they  
17 were all over that building. And that is why  
18 I asked for people to look at the potential of  
19 someone working at a higher gradient, you  
20 know, an area with higher concentrations for  
21 two to three hours, not for their full shift.

22 So you know, I think that is a

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1 potential that they could have worked at some  
2 of those areas for a shorter, not a full  
3 shift, not eight hours and five days a week,  
4 et cetera. And I was using the hypothetical  
5 worker, even because you know, I can't track  
6 where all these guys went throughout the day  
7 and you know, we don't have that sort of job  
8 task analysis stuff.

9 CHAIRMAN ZIEMER: Dr. Neton, maybe  
10 you can --

11 DR. NETON: I have sort of been  
12 listening patiently and biting my tongue here  
13 but I couldn't resist to just make one last  
14 ditch comment here related to these gradients  
15 in particular because that, in my mind is the  
16 central issue. The other issues that Mark  
17 raised, I think he might agree are Site  
18 Profile type issues, tweaking the model. The  
19 central question is, is a probabilistic model  
20 a reasonable, can a probabilistic model  
21 provide a reasonable upper bound?

22 And relevant to the gradient issue,

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1 you recall, we put in parameters that we  
2 believe represent the range of possible  
3 variability over a number of different  
4 parameters, including the ventilation rate.  
5 If you were to ask NIOSH what our best opinion  
6 is of the concentration, our most probable  
7 opinion of the concentration rate in that  
8 building, it is about four picocuries per  
9 liter.

10 Given that though, given that we  
11 allow for this range for different ventilation  
12 rates and that drives predominantly the  
13 concentration in the 95th percentile, that  
14 allows for a geometric standard deviation of  
15 about 2.7.

16 So in some sense, the gradient  
17 issue is there. It is not that the 95th  
18 percentile is the value that existed  
19 continuously, it is a 95th percentile probable  
20 value but our best estimate is it is 4  
21 picocuries per liter. We originally proposed  
22 that and then we moved to the 17 picocuries

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1 per liter to allow for that geometric standard  
2 deviation of 2.7 that allows for the  
3 variability of and principally ventilation  
4 rate and to some degree, the release fraction  
5 from the sulfuric acid tanks.

6 CHAIRMAN ZIEMER: Yes, and thanks  
7 for that clarification, Jim. Then we will  
8 defer further discussion on this until our  
9 work session tomorrow. And then see where we  
10 go from there.

11 Now, we have scheduled a brief  
12 break of one hour for some reason.

13 MR. KATZ: Things dropped off the  
14 schedule.

15 CHAIRMAN ZIEMER: Things dropped  
16 off the schedule. That is Ted's story and he  
17 is sticking to it.

18 In any event, for the public  
19 comment period, we do have to stay on the  
20 schedule insofar as there may be folks on the  
21 phone who wish to dial in. And in fairness to  
22 them, we cannot move this up easily.

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1                   So, I suppose we could do some  
2 housekeeping things. No, I don't think in  
3 fairness we can do a public comment even here  
4 locally. Can we, Ted?

5                   MR. KATZ: No. Well, then the  
6 other --

7                   CHAIRMAN ZIEMER: No.

8                   MR. KATZ: -- People will call in  
9 for it and they might want to hear them.

10                  CHAIRMAN ZIEMER: Yes, they want to  
11 hear them. So in fairness, we will have to do  
12 it at 5:00. So I guess, do you have some  
13 housekeeping things? Because some of these  
14 things are not ready to do until tomorrow  
15 anyway on Board working time.

16                  And I am looking ahead here. I can  
17 do tomorrow morning's welcome. I can do that.

18                  I'm glad you are all here.

19                  MEMBER GRIFFON: I can maybe  
20 propose, we have the twelfth set of cases.

21                  CHAIRMAN ZIEMER: Oh, yes.

22                  MEMBER GRIFFON: And I can at least

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1 describe the homework and maybe people can do  
2 their homework now and get it done.

3 CHAIRMAN ZIEMER: Yes, let's do the  
4 homework assignment.

5 MEMBER GRIFFON: Yes, there is  
6 three packets.

7 CHAIRMAN ZIEMER: On the agenda,  
8 this is -- is this part of Board Working Time?  
9 It is Board Working Time, DR Case Selection.  
10 And that is on tomorrow morning, as we said.  
11 But this is part of Mark's Dose  
12 Reconstruction Subcommittee. So Mark, if you  
13 would care to, take us through that.

14 MEMBER GRIFFON: Well, what I was  
15 going to propose, there is really three lists  
16 that Stu provided to us. And two of them are  
17 the same lists, they are just sorted  
18 differently. So, I would propose for tomorrow  
19 if you can work from the one list that is  
20 labeled the twelfth set of full primary  
21 internal, full primary external, or full  
22 internal and external claims with PoC from 30

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1 to 60, sorted by PoC, it says at the end.

2 If we do the sorted by PoC one, --  
3 well, you know what? Actually, why don't we  
4 work from the other one because there is sort  
5 of the ID number? It might be easier to keep  
6 track of which ones we select. So if you can  
7 highlight which cases. And what I would ask  
8 is that we go through that list, and the other  
9 one is the random selected cases, and go  
10 through and highlight ones that you think are  
11 good candidates for our twelfth set of cases.

12 And what I proposed to Paul during  
13 one of our breaks was that since we want to  
14 get these cases available for SC&A, to task  
15 SC&A with this twelfth set of cases to keep  
16 the production going, we always to this two-  
17 step process where at the Board here we pre-  
18 select cases and then we are going to give  
19 them back to Stu, and Stu is going to give us  
20 more information. And what I would ask is  
21 that that additional information on the pre-  
22 selected cases come back to the Subcommittee,

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1 which I plan on having a meeting at the end of  
2 August or early September and then we can --  
3 and Paul at least mentioned that we might be  
4 able to authorize the Subcommittee to make the  
5 final selections there, like we did before and  
6 task SC&A to work on those.

7 DR. MAURO: I would just like to  
8 point out with the goal of trying to do 60 by  
9 the end of the this year. I mean, that is the  
10 goal.

11 MEMBER GRIFFON: Yes.

12 DR. MAURO: I believe the tenth  
13 says 22. So the degree to which we can get  
14 that last 38 in because especially if we are  
15 not going to be tasked until September, the  
16 rest of the year --

17 MEMBER GRIFFON: You meant the  
18 eleventh set or tenth set?

19 DR. MAURO: No, the set we are  
20 talking about now is the --

21 MEMBER GRIFFON: -- twelfth.

22 DR. MAURO: Is it the twelfth set?

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1 MEMBER GRIFFON: Yes.

2 DR. MAURO: Twelfth set. My  
3 mistake.

4 MEMBER GRIFFON: So the eleventh  
5 set is 22?

6 DR. MAURO: I believe it is 22 and  
7 I am not sure if --

8 MEMBER GRIFFON: So we want to  
9 shoot for 38, is what you are saying.

10 DR. MAURO: Only because we don't  
11 really have very much time at the end of the  
12 year left.

13 MEMBER GRIFFON: Okay, we will try  
14 for 38.

15 CHAIRMAN ZIEMER: Okay, so the  
16 homework assignment is to take the copy that  
17 lists in numerical order the next group of  
18 cases. Is that correct?

19 MEMBER GRIFFON: Yes.

20 CHAIRMAN ZIEMER: Starting with 201  
21 and so on. These are not actual case numbers,  
22 they are simply reference numbers for the

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1 Board to use to protect the identify of the  
2 actual cases.

3 And how many --

4 MEMBER GRIFFON: Well out of those  
5 and the random, we are looking for 38, so we  
6 always try to get probably 50 or 55 is --

7 CHAIRMAN ZIEMER: Okay, so let's  
8 say roughly 50 cases that you want to have  
9 from which you will make your final selection.  
10 So you would like Board members to be prepared  
11 to indicate cases that they would like to see  
12 looked at.

13 Now, each member does not  
14 necessarily have to have 50. But we want to  
15 end up with at least 50 cases.

16 MEMBER GRIFFON: Probably, yes.

17 CHAIRMAN ZIEMER: And the idea would  
18 be that we would ask the Work Group to make  
19 the final cut down to say 38 or whatever it  
20 is, and authorize them to task SC&A for the  
21 normal assistance. And we can do that  
22 authorization tomorrow but that would be the

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1 intent.

2 So the homework assignment for  
3 tonight is to take a preliminary look at  
4 these. And if you see particular cases that  
5 you think should be looked at, then come  
6 prepared to recommend that in the open meeting  
7 tomorrow.

8 And Josie, a comment?

9 MEMBER BEACH: We can look at both  
10 lists for those 50?

11 CHAIRMAN ZIEMER: You are allowed  
12 to take a look at the other list. We won't  
13 ban that. That is just a re-sort for  
14 convenience.

15 MEMBER GRIFFON: No, no, no. There  
16 is two. There is a random selected. The  
17 smaller one is the randomly selected cases.  
18 And there is two copies of a thicker package.  
19 Did you get all three?

20 CHAIRMAN ZIEMER: Well, I guess I  
21 don't have the smaller one.

22 MEMBER GRIFFON: Does everybody

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1 have three packages?

2 (Chorus of yes.)

3 MEMBER GRIFFON: So the one that  
4 says full external, internal.

5 CHAIRMAN ZIEMER: Okay, well, I  
6 don't get to look at the third one but the  
7 rest of you can.

8 MEMBER GRIFFON: And it is sorted  
9 by ID number.

10 MEMBER ROESSLER: So do we pick a  
11 certain number from the little one --

12 MEMBER GRIFFON: Just go down and  
13 pick any ones you think would be good and  
14 hopefully it will come to around 50, 55, you  
15 know, and then we will cull it down from  
16 there.

17 CHAIRMAN ZIEMER: But two of the  
18 lists are the same things, just sorted  
19 differently.

20 MEMBER GRIFFON: Exactly.

21 CHAIRMAN ZIEMER: And the third is  
22 a separate list.

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1                   MEMBER GRIFFON:    Yes, Stu is just  
2                   trying to keep us on our toes doing that.  I'm  
3                   just teasing.  That is helpful, thanks.

4                   CHAIRMAN ZIEMER:            Okay.        Any  
5                   questions then?  You know, what the assignment  
6                   is.

7                   Okay, final comments?

8                   MR. KATZ:        Well we can, if you  
9                   want, we can entertain local public comments  
10                  now if there are people that are ready to do  
11                  that, as long as we reconvene at the time that  
12                  has been placed on the schedule.

13                  MEMBER BEACH:    Ted?

14                  MR. KATZ:        We can get people who  
15                  are local to comment.

16                  CHAIRMAN ZIEMER:    You have checked  
17                  this out?

18                  MEMBER BEACH:    I also noticed the  
19                  computer gentleman walked in.  And maybe some  
20                  of us during that time could have our  
21                  computers looked at as well.

22                  MR. KATZ:        Right that is another

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1 option.

2 CHAIRMAN ZIEMER: Okay, we are  
3 going to take a break until 4:00, or until  
4 5:00, at which time we will have the public  
5 comment period.

6 (Whereupon, the above-entitled matter went off  
7 the record at 4:12 p.m. and resumed  
8 at 5:04 p.m.)

9 CHAIRMAN ZIEMER: We are ready to  
10 begin the public comment portion of the  
11 Advisory Board meeting. I will briefly remind  
12 commenters that the Board has a ten-minute  
13 time limit on public comments. Also we need  
14 to remind you of the Redaction Policy and Mr.  
15 Katz will give us a quick review of the  
16 Redaction Policy.

17 MR. KATZ: Thank you, Dr. Ziemer.  
18 The Policy is, for those of you in the room  
19 and on the phone, there is a verbatim  
20 transcript made of the meeting. So, as a  
21 public commenter, everything you say will be  
22 recorded and will show up in this verbatim

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1 transcript, which will appear on the NIOSH  
2 website, including your name, including any  
3 personal information you give about yourself.  
4 If you speak about a third party, another  
5 person, in other words, private information  
6 about that individual, identifying that  
7 individual will be redacted from the  
8 transcript, be blacked out, what have you, so  
9 it will not appear on the public transcript,  
10 generally speaking.

11 A full description of this  
12 Redaction Policy is available on the NIOSH  
13 website. It is also available in the back of  
14 the room here.

15 And should someone want to address  
16 a member of the Board or members of the Board  
17 but not in a public fashion, they should  
18 discuss that with me and see what kind of  
19 arrangements we can make.

20 And that's it. Thank you.

21 CHAIRMAN ZIEMER: Okay, thank you  
22 very much. The first individual this evening

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1 will be Ray Beatty and Ray is representing  
2 Fernald Medical Screening Program.

3 MR. BEATTY: First of all, thank  
4 you for bringing the Board meeting to the  
5 Cincinnati area. I am a little concerned  
6 about the lack of turnout at the present time.

7 It concerns me a great deal that we have an  
8 SEC petition pending and that the lack of  
9 interest is disturbing to say the least but I  
10 can't really control that but I had to comment  
11 on it.

12 My main concern to approach the  
13 Board and to have a comment is basically due  
14 to a question that was asked yesterday. And  
15 it is something that comes up quite a great  
16 deal in our workings as medical screening  
17 coordinators. We are sometimes privileged to  
18 the result letters and the health effects that  
19 some of the people have experienced.

20 So we get engaged in some of the  
21 process of filing claims, assisting people  
22 with occupational history and institutional

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1 history of the plants. And in the process of  
2 filing the various claims, and I am fully  
3 aware that the Board deals primarily with  
4 Subtitle B and radiation-induced cancers. But  
5 the process of doing dose reconstruction comes  
6 into play, at least in our opinion, through in  
7 the other process of Subtitle E.

8           And here lies the problem; at least  
9 I sense a problem. We see dose reconstruction  
10 being performed and if a claimant doesn't  
11 reach the 50 percent threshold of Probability  
12 of Causation, the claim is denied under B. We  
13 understand that. And then when they try to  
14 pursue the claim under E for toxic substances  
15 and using the dose reconstruction process  
16 there, it is not handled the same way. It is  
17 rather inconsistent and it is very confusing.

18           I do know that August the 11th  
19 there is going to be a Department of Labor  
20 Town Hall Meeting sponsored by the -- well,  
21 the Ombudsman for that office is going to be  
22 here in Fairfield, Ohio. And I tend to pose

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1 this question more in intricate detail because  
2 I think that is the proper arena.

3 But I just wanted to plant the seed  
4 that there is still a little bit of a problem  
5 of this dose reconstruction that is costing a  
6 great deal of money. I should be utilized. A  
7 claimant should be able to use that to their  
8 benefit under Subtitle E. And there lies the  
9 problem.

10 I don't know if DOL has a 50  
11 percent or greater threshold for E claims or  
12 if it is just not being readily or being used  
13 or recognized. And it should be. It very  
14 well should be.

15 If someone doesn't make 50 percent,  
16 let's say 30 percent, they go to do a Subtitle  
17 E claim, let's say for skin cancer, and it is  
18 put on a back burner until they say NIOSH can  
19 do a dose reconstruction. Well, they have  
20 already done it. So it is somewhat redundant  
21 or repetitive. I really don't have a real  
22 true grip on this.

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1                   And like I say, I will approach the  
2 DOL Ombudsman's Office with this concern but  
3 it is something I just thought the Board  
4 should be aware of that the Adjudication  
5 Process -- and I am not so certain, too, if  
6 this is within the Act, within the federal law  
7 of what is going on here. Are we really  
8 seeing due process or is this an in-house  
9 bulletin, circular, or something, an in-house  
10 decision DOL has made to not use that dose  
11 reconstruction information, that evidence to  
12 adjudicate the claims under E?

13                   So that is my concern. I just  
14 wanted to make it for the record. Thank you.

15                   CHAIRMAN ZIEMER: Okay, thank you,  
16 Ray. And of course, as you already know, we  
17 deal with Part B claims. But perhaps Jeff  
18 Kotsch can speak with you privately, if you  
19 haven't already on this issue and clarify some  
20 of the points from the Department of Labor's  
21 aspect.

22                   Next, we will hear from Wayne Knox.

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1 Welcome Wayne. And we have heard from Wayne  
2 in the past. We will give you your ten  
3 minutes, Wayne.

4 MR. KNOX: Yes.

5 CHAIRMAN ZIEMER: I have to remind  
6 Wayne because he is a good lecturer.

7 MR. KNOX: But the last time, you  
8 allowed me to sit at the head table.

9 CHAIRMAN ZIEMER: You know, I think  
10 we spoiled you. Welcome back, Wayne, and  
11 please proceed.

12 MR. KNOX: I will be very short.  
13 My name is Wayne Knox. I spent some time in  
14 the military as a Captain and Radiation  
15 Physicist. I also spent time in the Army  
16 Reserves as a Nuclear Medicine Scientist down  
17 at Eisenhower Hospital. And I have had the  
18 opportunity to actually work in the plants as  
19 a Radiation Technician Supervisor, as a  
20 Radiation Safety Officer, and also as the  
21 Operational Health Physics Analyst.

22 So, I understand what goes on from

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1 the ground level. I have looked at this  
2 program and I want to get a solution that a  
3 number of radiation workers that are suffering  
4 and dying from cancer. These are soldiers,  
5 from my perspective. I do not feel as a good  
6 military officer, that we should leave the  
7 wounded soldiers on the battlefield dying. We  
8 should do our best to at least take care of  
9 their medical expenses.

10 I have performed an analysis of  
11 IREP because I think IREP is the problem. The  
12 basic problem is that we have this computer  
13 system that we have developed that I don't  
14 feel anyone knows how it works. I have asked  
15 for an independent, and I would like to  
16 underscore independent, validation and  
17 verification of that software. At this point,  
18 it has never been performed.

19 How can we rely on any system that  
20 has not had an independent validation and  
21 verification leading to the certification of  
22 that software and all of the configuration

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1 management requirements associated with it? I  
2 have attempted to get NIOSH's the Department  
3 of Labor Quality Assurance Program. They will  
4 not release it to me but I suspect that any  
5 Quality Assurance Program would require that.

6           What I would like to do is to make  
7 it very simple, since I only have ten minutes  
8 is to ask you to allow me to sit down with  
9 someone that knows something about this and go  
10 through it. I have done some analysis and  
11 made some beautiful little charts of how IREP  
12 works. I have pinged it. I used to be in  
13 intelligence so I have mapped it from my  
14 perspective. And there are some interesting  
15 things that go on with IREP. It is not a  
16 robust system. IREP would be defined as a  
17 non-deterministic system. Any non-  
18 deterministic system is based upon statistic.  
19 Every time, it will tell you a lie. It will  
20 not tell you the same thing twice.

21           We need to talk about that and talk  
22 about that relative to how Wayne Knox as an

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1 Operational Health Physicist in the plant, how  
2 would he actually calculate the radiation dose  
3 to the person and the radiation risk, and how  
4 he would go about calculating the Probability  
5 of Causation. And I have done this. I have  
6 put myself in my role as an Operational Health  
7 Physicist at the plant, using what we would  
8 use, based upon the Intra-Agency Committee on  
9 Radiation Standards' recommendations for the  
10 dose conversion factors, DOE, NRC  
11 recommendations for those factors.

12 I have used those standard factors  
13 that we use on a case in which, based upon  
14 IREP, you get 32.55 percent. Based upon my  
15 assessment, I come up with over 80 percent.  
16 And it appears that we have said that when you  
17 are working in a plant and you have no cancer,  
18 this is how we determine your radiation risk.

19 But if you have cancer, it changes. And it  
20 appears that my assessment of IREP, which has  
21 some rather interesting behavior associated  
22 with it, it appears as though it is designed

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1 to deny claimants, by design. And I would  
2 just like to sit down and talk eyeball to  
3 eyeball with someone that knows.

4 See, I did it in ten minutes.  
5 Right?

6 CHAIRMAN ZIEMER: Thank you, Wayne.  
7 Are you asking for those documents to be  
8 submitted to us or those were documents you  
9 just brought for illustration?

10 MR. KNOX: They are documents that  
11 I will submit to you but I am having someone  
12 else to look at them and validate them before  
13 I submit them to you.

14 But I would like to, again, have  
15 someone that knows health physics, that knows  
16 medical physics to sit down and talk with me.

17 CHAIRMAN ZIEMER: Okay.

18 MR. KNOX: I mean in a non-  
19 confrontational manner.

20 CHAIRMAN ZIEMER: Yes, understood.  
21 Let me also report to you and maybe we can  
22 make sure this is available to you because Dr.

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1 Neton did report to us today on the validation  
2 and the verification of the IREP program. And  
3 I believe, at least a copy of his slides are  
4 available, if not the paper itself. So, you  
5 should be aware of that.

6 And beyond that, you would have to,  
7 we would have to have you talk privately with  
8 NIOSH people on your point about meeting with  
9 somebody.

10 So thank you, Wayne, for that  
11 input.

12 MR. KNOX: Yes, thank you.

13 CHAIRMAN ZIEMER: Next, I  
14 understand that Terrie Barrie may be on the  
15 line. And Terrie, are you there?

16 MS. BARRIE: Yes, I am, Doctor.

17 CHAIRMAN ZIEMER: Oh, good. We  
18 would be pleased to hear from you now, Terrie.

19 MS. BARRIE: Okay. Well, thank you  
20 so much again for allowing me to call in my  
21 comments.

22 This is Terrie Barrie from the

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1 Alliance of Nuclear Worker Advocacy Groups and  
2 I am going to talk about the Ruttenber  
3 database. I understand that Mr. Elliott  
4 stated yesterday that the two Rocky Flats  
5 Neutron databases, NIOSH, NDRP and the  
6 Ruttenber database, were the same with no  
7 significant differences and it confirms  
8 NIOSH's previous statement.

9 Did the Webster Dictionary change  
10 the definition of same when I wasn't looking?

11 The NDRP database covers 5,317 workers. When  
12 NIOSH compared the two, they found that 4,163  
13 workers were in the Ruttenber database that  
14 were not on the NDRP. And this has no  
15 significance? And NIOSH considers this to be  
16 the same? This statement cannot be allowed to  
17 go unchallenged.

18 The NIOSH report concluded that the  
19 two databases agree with which buildings were  
20 considered neutron buildings. A draft of the  
21 report, however, was not submitted to Margaret  
22 Ruttenber to verify this statement. If it

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1 was, I wonder if Ms. Ruttenber would have  
2 concurred, since she has consistently regarded  
3 Building 881 as a neutron building, whereas  
4 NIOSH has not.

5 NIOSH looked at a number of claims  
6 filed by the workers on the Ruttenber database  
7 and concluded that only one claim would be  
8 adversely affected. This conclusion civilizes  
9 the issue. The issue is whether there are  
10 workers missing from NIOSH's database that are  
11 on the Ruttenber database. The answer is a  
12 resounding yes. Not a couple, not a few, but  
13 thousands of workers.

14 And additionally, the review is  
15 irrelevant. The NDRP covers the 5,000  
16 workers, yet not all of them have cancer and  
17 submitted claims. However, for the NDRP, if  
18 one of them did develop one of the 22  
19 specified cancers and worked for the 250 days,  
20 they would automatically be covered under the  
21 SEC. This is not true for the workers in the  
22 Ruttenber database.

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1           The Board already decided that the  
2           NDRP was not accurate when you approved the  
3           small group to be covered by the SEC. And yet  
4           we are to believe that the NDRP is now the  
5           Holy Grail to determine who should be covered  
6           under the SEC?

7           I want to remind everyone that the  
8           SEC-covered workers who were monitored or  
9           should have been monitored for neutron  
10          radiation. It appears that the Rutenber  
11          database has 4,163 workers who were monitored  
12          or should have been monitored for neutron  
13          dose.

14          But this issue goes beyond which  
15          database is accurate. As I see it, the real  
16          issue is why did NIOSH refuse to do an in-  
17          depth investigation of this database when they  
18          first learned of it in 2006? This was before  
19          the SEC was decided.

20          Here was evidence. And instead of  
21          evaluating in thoroughly with the Working  
22          Group and SC&A, they simply dismissed it as

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1 irrelevant. Were other documents or  
2 information similarly dismissed? I raise this  
3 question because ANWAG learned that the  
4 Department of Labor Site Exposure Matrix for  
5 Rocky Flats shows that plutonium and uranium  
6 was present in Building 460. This building  
7 was supposedly a cold building.

8 Ms. Rachel Leiton, the Director of  
9 the EEOICPA has reviewed some of the documents  
10 that indicate that these elements, and I  
11 quote, "may have been in Building 460 and that  
12 DOL plans to discuss this issue and clarify  
13 the documents of NIOSH." It makes one pause  
14 to think that the research into the Rocky  
15 Flats SEC petition and the other technical  
16 documents for Rocky Flats may not have been as  
17 complete as required.

18 I am sure that some of the Board  
19 members think their responsibility to the  
20 Rocky Flats workers was over the day they  
21 voted on the SEC petition. But you now have  
22 before you new evidence. Evidence, perhaps,

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1 that if it was presented during the  
2 deliberations, may have changed the outcome of  
3 the vote.

4 I urge the Board to task SC&A to  
5 perform a more detailed comparison of the two  
6 databases and to review the documents  
7 Department of Labor has or will forward to  
8 NIOSH. All the claimants and advocates want  
9 is the truth and I feel that we are not near  
10 that yet. Thank you.

11 CHAIRMAN ZIEMER: Terrie, thank you  
12 for your comments. And perhaps I should  
13 indicate to you if you weren't aware, that  
14 Mark Griffon will be reporting for the Work  
15 Group tomorrow and perhaps we will have an  
16 opportunity to address some plans going  
17 forward with regard to the Rutenber database  
18 and actions that might come down the line.  
19 So, we appreciate your input on this matter.

20 MS. BARRIE: Thank you. And I do  
21 plan on being on for that update.

22 CHAIRMAN ZIEMER: Very good.

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1 MS. BARRIE: Thank you.

2 CHAIRMAN ZIEMER: Okay. Let me ask  
3 if there are others on the phone lines that  
4 wish to address the assembly today.

5 (No response.)

6 CHAIRMAN ZIEMER: It appears that  
7 there are not. I do not have additional  
8 individuals who have signed up here in the  
9 room today but let me give the opportunity if  
10 there are additional individuals who wish to  
11 address the assembly this afternoon.

12 (No response.)

13 CHAIRMAN ZIEMER: It appears that  
14 there are not. So, this will conclude the  
15 public comment period for today. The Board  
16 will reconvene tomorrow morning at 9:00 a.m.  
17 and we, in the meantime, stand recessed.  
18 Thank you very much.

19 (Whereupon, the above-entitled matter  
20 went off the record at 5:24 p.m.)

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