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

convenes the

TWENTY-EIGHTH MEETING

ADVISORY BOARD ON

RADIATION AND WORKER HEALTH

DAY TWO

The verbatim transcript of the Meeting of the Advisory Board on Radiation and Worker Health held at the Adam’s Mark, St. Louis, Missouri, on February 8, 2005.

C O N T E N T S

February 8, 2005

TRANSCRIPT LEGEND

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P A R T I C I P A N T S

(By Group, in Alphabetical Order)

BOARD MEMBERS

CHAIR
ZIEMER, Paul L., Ph.D.
Professor Emeritus
School of Health Sciences
Purdue University
Lafayette, Indiana

EXECUTIVE SECRETARY
WADE, Lewis, Ph.D.
Senior Science Advisor
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
Washington, DC

MEMBERSHIP

ANDERSON, Henry A., M.D.
Chief Medical Officer
Occupational and Environmental Health
Wisconsin Division of Public Health
Madison, Wisconsin

DeHART, Roy Lynch, M.D., M.P.H.
Director
The Vanderbilt Center for Occupational and Environmental Medicine
Professor of Medicine
Nashville, Tennessee

ESPINOSA, Richard Lee
Sheet Metal Workers Union Local #49
Johnson Controls
Los Alamos National Laboratory
Espanola, New Mexico

GIBSON, Michael H.
President
Paper, Allied-Industrial, Chemical, and Energy Union
Local 5-4200
Miamisburg, Ohio

GRIFFON, Mark A.
President
Creative Pollution Solutions, Inc.
Salem, New Hampshire

MELIUS, James Malcom, M.D., Ph.D.
Director
New York State Laborers' Health and Safety Trust Fund
Albany, New York

MUNN, Wanda I.
Senior Nuclear Engineer (Retired)
Richland, Washington

OWENS, Charles Leon
President
Paper, Allied-Industrial, Chemical, and Energy Union
Local 5-550
Paducah, Kentucky

PRESLEY, Robert W.
Special Projects Engineer
BWXT Y12 National Security Complex
Clinton, Tennessee

ROESSLER, Genevieve S., Ph.D.
Professor Emeritus
University of Florida
Elysian, Minnesota

AGENDA SPEAKERS

(in order of appearance)

SC&A

Dr. Paul Ziemer, Chair

STAFF/VENDORS

CORI HOMER, Committee Management Specialist, NIOSH
STEVEN RAY GREEN, Certified Merit Court Reporter

AUDIENCE PARTICIPANTS

AHIRA, KEN
ALEXANDER, OLIVE M.
ALEXANDER, TERRY
ALLEN, GEORGE
AMANN, DEBORAH
AMENELL, ROBERTA, IAAP
ANBLE, JOHN, KTVI
ANDERSON, KATHLEEN, IAAP
ARRO, MICHAEL R.
BAFARO, MARILYN, NIOSH
BASCHERT, BETTY J.
BEATTY, EVERETT RAY, SR., FERNALD ATOMIC COUNCIL
BEHLING, HANS, SC&A
BEHLING, KATHY, SC&A
BELL, R. THOMAS, SC&A
BERRY, CHARLENE
BEST, CHARLINE
BEST, RAYMOND
BIEST, JOAN
BLANKENSHIP, CINDY
BLUE, GEORGE
BOELHAUF, LINDA
BOGNAN, JOHN
BOYD, JAMES
BLOSSER, FRED, NIOSH
BRALASKI, RITA
BRAND, ANSTICE, CDC
BRINGER, GLORIA
BROCK, DENISE, UNWW
BROWN, DENNIS
BROWN, THOMAS, BSCAG
BRYANT, DOROTHY
BULGER, HAROLD
CALLAWAY MOOCH, FERNALD ATOMIC COUNCIL
CAMPBELL, MARTHA JANE, IAAP
CAVALESKY, SHIRLEY
CHISHOLM, MILLIE
COFFELT, EVELYN
CONRAD, JAMES
COOK, FRANKLIN
COTTER, GARY

COTTER, WILLIAM D.
COVALESKY, SHIRLEY
CROCK, JAMIE
CURTISS, JOANN & RICK
DANIEL, GWEN
DAVIS, JANETTE
DAVIS, RICKY, KTVI
DEEP, HEIDI, NIOSH
DEICHMAN, MATT, WBII-TV
DETHERAGE, DEBBIE
DILLARD, HOMER & HALENE
DOCKENDORFF, ALVIN, IAAP
DOLAN, JACQUELINE E.
DOLAN, WILLIAM E.
DORNFELD, DEBBIE, JIM TALENT
DOWNING, MARILYN, IAAP
DOWNS, DEB
DREY, KAY
DUDLEY, MARTIN
DURSO, HARRY, FAMILY
EATON, CLARISSA, UNWW
ECHEMENDIA, AIDA
EHLMANN, PAT, UNWW
ELLISON, CHRIS, NIOSH
ERTZ, MARILYN, IAAP
ESPY, RICHARD
FAGAS, JANE
FANTER, DALE
FITZGERALD, JOE, SC&A
FRAZIER, JOE
FRISCHMAN, BILL
FULKERSON, ROBERT
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GENERI, MARY
GILLARD, LORRAINE A.
GRAER, RON
GRAHAM, MAYOR, CITY OF O'FALLON
GREEN, JAMES
GREUBLATT, B., UPI
HABBIG, JOHN K.
HAERER, BERNELL
HALLMARK, SHELBY, LABOR
HANNEKEN, BETTY, IAAP

HARDIN, JOYCE, IAAP
HARGIS, JOHN
HARRIS, WALTER
HARRISON, KATHY
HARRISON, LINDA L., IAAP
HARRISON, RUSSELL, IAAP
HART, ALISON, SENATOR HARKIN
HAWKINS, BRENDA
HEADRICK, WILLIAM
HEISTER, MELANIE, NCRP
HENNITS, DOROTHY
HERBERT, NICHOLE, NIOSH
HERTZ, DOROTHY
HILL, BRYAN L., IAAP
HINNEFELD, STUART, NIOSH
HOELSCHER, LAUREL, IAAP
HOELSCHER, RUTH, IAAP
HOLLAND, MARTIN
HOLTMEYER-MAUNE, JERRINE
HODGES, CARRIE
HOMOKI-TITUS, LIZ, HHS
HORGAN, TOM, SEN. BOND
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IRWIN, SUE
IVERSON, SI
JACKSON, BETTYE
JOHNSON, MARY L.
JOHNSON, PAT
JONES, VIRGINIA L.
JORDAN, LAJUANNA
KATZ, TED, NIOSH
KELLER, LILLIAN A.
KELLISON, JAMES
KELLY, PATRICK, SC&A
KENOYER, JUDSON, ORAU
KIEDING, SYLVIA
KIENLEN, BONNIE, IAAP
KIMPAN, KATE, DOE
KLOTZ, STEVE, KTRS
KOENEMAN, BARB, UNWW
KOENEMAN, RAYETTA
KOENEMAN, TANYA, UNWW
KORDING, GLENN

KORDING, SHARON
KOTSCH, JEFFREY L., DOL
KRAICHELY, MARY, UNWW
KUNTZ, LORI, IAAP
LACKEY, MELBA
LAMBKIN, DON, UNWW
LAVERY, KEVIN M., KWMU
LEA, JEFF, KMOV
LEACH, BOB
LEAHMANN, SHIRLEY
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LYNCH, CINDY
LYNCH, HELEN
MACK, HUY, POST DISPATCH
MANNING, JIM
MANSFIELD, LAURIE, DES MOINES REGISTER
MASSMANN, MERRELL
MASSMANN, VERNON
MAURO, JOHN, SC&A
MCINTYRE, JOAN
MCKEEL, DAN, MD, WASHINGTON UNIV.
MCKEEL, VIRGINIA, VILLAGE IMAGE NEWS
MCNUTT, ROBERT
MESSALA, DAVE & JAN
MIKLOVIC, DAN
MILLER, RELADA L., NIOSH
MILLER, RICHARD, GAP
MITAS, JIM, CONGRESSMAN AKIN
MOLENHOUR, ROBERT
MOUSER, TERRI, UNITED NUCLEAR
MURPHY, DAN P.
MUSCKE, EDWARD C.
NAES, NORVILLE
NESVET, JEFF, DOL
NETON, JIM, NIOSH
NOVAK, JUSTINE
NUGENT, MARY, US GAO
O'HARE, FRANK W.
OJEDA, THERESA, KMOV
PATTON, JACK
PHEGLEY, RAYMOND, AIRPORT
PIPER, WILLIAM

PORTER, DIANE, NIOSH
PRESLEY, LOUISE S.
PRIEST, CHRISTINE
RACH, CHARLES L.
RAMSPOTT, CHRISTINE
RAMSPOTT, JOHN
REECE, DOYLE, AIRPORT
REMPE, VIRGIL J.
RETKONSKI, RICHARD
REUSS, ANN
RIDENHOWER, DONALD D.
RIDENHOWER, LINDA
RINDALL, TINA, UNITED NUCLEAR
RINGEN, KNUT, CPWR/BCTD
ROBERTSON-DEMERS, KATHY, SC&A
RODE, BETTY
ROSENTHAL, JAMES
ROTH, CHARLES L.
ROTHROCK, AMY
RUTHERFORD, LAVON, NIOSH
RYAN, FRAN
SACKS-LONG, DONNA J.
SALTER, JIM, AIRPORT
SCHESLER, ELAINE
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SCHNEIDER, MARILYN, UNWW
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SCOGGINS, FRANCES
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SEMARADI, ANDREW
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SMIDDY, BARBARA A.
SOMRATY, ANDY, AIRPORT
SOMRATY, CATHY, AIRPORT
SOVAR, RICH AND EVELYN
SPICKETT, DAVID
SPICKETT, EVELYN
STEFFEN, CAROLE
STEGER, RON
STEGER, RONI
STEINKAMP, JUDIE

STEMPFLEY, DAN, NIOSH
STEWART, LEONARD, IAAP
STRAUTHER, LEE
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STROUSSNER, DONALD A.
STUCKENSCHNEIDER, DOLORES
STUDT, ARLENE
SUERMANN, ZELDA
SULLIVAN, MICHELLE, WBII-TV
SWABODA, JAY, ST. LOUIS LABOR TRIBUNE
TASCHLOR, JOHN
TAULBEE, TOM, NIOSH
TEAGUE, CARLOTTA, NCRP
TENFORDE, THOMAS S., NCRP
THORNHILL, CHARLENE
THORNHILL, GEORGE
TINDALL, FRANKLIN
TINDALL, TINA
TOOHEY, R.E., ORAU
TURCIC, PETE, DOL
UNDERWOOD, LEWIS, NIOSH
VACEK, PENNY, SENATOR GRASSLEY
VERHOFF, GWENDOLYN
VOGNER, JOHN
WALKER, ED AND JOYCE, BSCAG
WATSON, DAVID P., JR.
WHITE, WALTER, JR.
WIESEHAUS, JOHN J.
WILBURN-YOCHIEM, LYNDA ANN, IAAP
WILEY, EFFIE M.
WINDISCH, ANTHONY, IAAP
WING, JENNY, SENATOR HARKIN
WISE, GEORGE
WOLFF, TOM
WOOD, MYRLL, IAAP
WOODS, JANET
YAKOS, CHARLES
YERINGTON, LASCA
YOUNG, OBIE D., MCW
ZAK ROSEMARY
ZIEMER, MARILYN
ZIMMERMAN, SUE, CONGRESSMAN JIM LEACH

P R O C E E D I N G S

(8:20 a.m.)

WELCOME AND OPENING COMMENTS

DR. ZIEMER: Good morning, everyone. I'd like to call the meeting back to order. This is the second day of the meeting of the Advisory Board on Radiation and Worker Health. Again I would remind all participants if you would, please register your attendance at the registration table at the entrance, if you haven't already done so.

Copies of the agenda and other materials are on the back table. If you have not already seen them, please avail yourselves of those. We will follow the agenda fairly closely. From time to time we may have to adjust it, according to the -- how -- how things progress. The record will show that all of the Board members are here with the exception of Dr. Andrade, who is ill with the flu. Henry Anderson is -- we hope will join us by phone from Alaska. Mr. Espinosa will be joining us shortly.

What time is it in Alaska?

MS. MUNN: It's barely 6:30.

DR. ZIEMER: We'll give Dr. Anderson his wake-up call, I think is what it will be.

(Pause)

Good morning, Henry, are you there? Do we have Dr. Anderson on the line?

(No response)

Well, we'll keep -- continue to try to hook Dr. Anderson in here.

REVIEW AND APPROVAL OF DRAFT MINUTES, MEETING 27

The first item on our agenda this morning is the review and approval of the minutes of our previous meeting. That was the meeting in Livermore, the December 2004 meeting in Livermore. Board members, you've had those draft minutes. I have reviewed them. There are a few typos and so on which I will pass along to Cori Homer. I'd particularly like you to make sure that, as you look at those sections where you have expressed ideas and so on, that you make sure that you are correctly reflected in those summary minutes.

Are there any significant corrections or additions to the minutes, as you have them? These are in the sixth tab in your folder.

If there are no corrections or additions, let me entertain a motion to approve those minutes, with the understanding that minor editorial and grammatical corrections will be made. Is there such a motion?

MS. MUNN: So moved.

DR. ZIEMER: And seconded?

DR. DEHART: Second.

DR. ZIEMER: Moved and seconded. All in favor of approving the minutes, say aye?

(Affirmative responses)

Any opposed?

(No responses)

Any abstentions?

(No responses)

Thank you. The minutes stand approved.

One reminder, Board members, this morning as we proceed, we have -- we learned that -- yesterday that some of the participants in the audience had difficulty hearing Board members during discussion on occasions where you moved your head away from the mike, that the sound loss was noticeable. So you do need to apparently get relatively close to the mike and -- and keep your mouth close there as you

speak. That will help -- this is a large room and a bit of an echo cavern. No fair yodeling, though. Just say what you have to and keep it close. Okay?

SITE PROFILE REVIEW –-

MALLINCKRODT, DESTREHAN STREET FACILITY

We're going to then move to the report on the site profile review which was done by the Board's contractor, SC&A. The lead person on that effort was Joe Fitzgerald. Joe is with us here this morning, and assisting Joe in that effort was Tom Bell. And I'm looking for Joe to make sure he's in there. I know he was around this morning. We're two or three minutes early, so Joe may not have anticipated that. But Joe is going to introduce the work of SC&A on the site profile review of the Mallinckrodt Destrehan Steel -- Street facility, rather, and then -- and then Tom Bell, who had the lead in that, will pick up from there.

(Pause)

Ladies and gentlemen, Joe Fitzgerald. Sorry, Joe, we jumped in a couple minutes early here, but we are prepared to proceed on the work, so

-- yeah, thank you, so...

MR. FITZGERALD: Good morning. I'm Joe Fitzgerald. I'm the task manager for task one on the site profiles. What we want to do this morning is just give you a briefing on the review of the site profile for Mallinckrodt that was accomplished over the last couple of months.

Tom Bell is going to go through the specifics of the presentation. You do have a handout that provides the specific findings and observations.

Let me just say that, you know, this -- this review was done over a four or five-month period, actually, starting with a series of interviews that we conducted with workers here in St. Louis back in the summer. We progressed through document review and also spent certainly a great deal of time interacting with NIOSH and looking at the documentation NIOSH has collected.

I think -- this is the first one that benefited from a issue resolution process which we conducted with NIOSH, with the Advisory Board present, a few weeks ago, and I think this

turned out to be a very advantageous process. I'd like to report we converged on a number of issues where I think clarity helped us, and I think this is a good precedent that we can certainly build on, and I think it made the report a better report.

We're going to hear a lot about Mallinckrodt today, but I just want to outline a few of the things that certainly we found very pertinent. Mallinckrodt Chemical Works, located here in St. Louis, of course, refined and processed uranium ore, one of the earlier sites as part of the Atomic Energy Commission. They used high purity uranium. Actually operated from 1942 to '58. A lot of the operations were then transferred to Weldon Spring.

We spent a lot of time certainly looking at the question of dust concentration, primarily 'cause, again, bioassay data wasn't available, and a lot of the information we had to rely on really involved contamination studies and whatever air samples that had been conducted. The key issue I think that we focused on was film badge data was not available before 1945, so certainly there's a lot of issues in terms

of actual datapoints that could be relied upon. Certainly that'll be a key issue that'll be returned to again and again this morning.

I don't think it's any mystery -- I don't think -- I think you're going to hear a lot of the history. This was a plant that had poor ventilation, minimal safety programs in the early years, and the monitoring which -- monitoring -- limited monitoring was done certainly demonstrated a high concentration levels of uranium dust, which persisted in the early years.

Anyway, in terms of what we did process-wise, the initial working draft was developed. We did provide questions, as we have done in the past, to NIOSH. Did have an opportunity, by virtue of conference call, to go through those questions, trying to get certainly a response to some of the issues that we were looking at. And the purpose of this, again, was to elicit some clarity as far as how the profile was developed, some of the issues in terms of documentation that was used, and to understand better some of the analysis that was employed in the review. And certainly I thought that

was pretty productive and NIOSH agreed that a number of the issues -- and this is a key feature of this particular review, and we raised this with the Board last year 'cause we were aware that this was one site profile that was in the process of being I think dramatically revised, and the question at the time, as you recall, was what should we do, given the fact that it was on the list. I think the sense of the Board was to go ahead and proceed with Rev. 00, understanding of course that perhaps some of the issues that we were going to find for -- by virtue of 00, were being addressed in the ongoing revision of Rev. 01. So I think that's the context by which we developed that particular evaluation.

Again, as I indicated, we did spend time with NIOSH on the 18th. We had several Board members present -- Wanda, Mark Griffon, Mike Gibson I think, and Richard Espinosa. I think the four Board members of the subcommittee were present. It was a very helpful session. I think we did address a number of issues that made the report better, and this -- this report's the product certainly of that

exchange. And this report was submitted on the 31st.

With that -- where's Tom? I want to give Tom as much time as possible to go through the specifics of the -- of the findings. I think he's got a number of -- of points he wants to make and I want to (unintelligible).

(Pause)

MR. BELL: Well, good morning, members of the Board, Chairman Ziemer and all the folks here, ladies and gentlemen, the workers at Mallinckrodt that have been able to join us. It's a privilege to be able to be here to present some of our findings.

Joe's covered for you some of the introductory slides, so you've got a feel for how we started this. What I'd like to go through with you are about five major areas that we developed findings in, and talk a little bit about each one and give you some background in those.

The first is really the early period, which we thought had lots of problems, and I think the SEC petition indicates that that really is a problem, and we'll talk about some of the details of that.

Second are internal dosimetry questions, and a lot of our issues really arose in that area because the inhalation dose -- the internal dose turned out to be the significant route for a lot of the exposure, in addition to perhaps radium 226 later for external dose with film badging.

And then we'd like to talk a little bit about some problems we see with some of the external dose issues.

Fourth, dealing with the coworker data and how it's interpreted and used.

And finally, some general information on time-weighted averages, which kind of is the crux of the dust study information and some problems we see in that.

So with that, what I'd like to do is to start off here with a -- a review -- basically we were charged to do these objectives, and I just want to go over them quickly so that you know -- in fact, I understand at the Los -- at the Livermore meeting there was a concern that we should try to address each of these major objectives more specifically in the report, and the report format was changed in order to do

that. And we actually do go into these subject in the report that you can read. But overall we're trying to assess the scientific validity of the site profile. But specifically we're really interested in is there -- is the data complete, is all the stuff there that you need to really do a good dose reconstruction. Secondly, we're trying to evaluate the site profile's technical accuracy; third, to evaluate if guidance and data are adequate to sufficiently -- are they sufficiently detailed and complete for dose reconstruction process; fourth, evaluate the consistency between the profiles, and we've had limited experience -- we've only done two or three so far, but we're going to give you a little background on that; and then evaluate conformance with applicable policies and procedures.

And so with that -- let's see... I'm sorry, they didn't show me which button to push here.

(Pause)

We had certain constraints, and Joe touched upon those but I wanted to go over them again. We realized that NIOSH was working on Rev. 1 and really had made a lot of progress on it.

In fact, we discussed some of this at our meeting in Cincinnati. But we didn't have the ability to see what was being done, and we asked at the meeting, you know, is it possible to maybe get a summary. And NIOSH was helpful in providing us that summary, but unfortunately it came at the very last minute as the report went out the door, so we didn't really have a chance to really incorporate it or to think a great deal about what the summary meant. But I do have a feeling that a lot of the issues we've raised that NIOSH is seriously considering them and that Rev. 1 may very well address a number of those issues.

At the time we prepared to send out the report, the SEC petitions were not available and we didn't have those to look at. We have now been able to review those since we've come to the meeting, and will have a few comments on that.

And the transcripts of our January 18th meeting, which as Joe mentioned was a very productive meeting; I think this issue resolution process really helped each of us to kind of sit down and think about the issues and where we certainly had differences and how we

could perhaps come together on issues, and I think that's a very, very valuable process. And finally there was no section eight, which dealt with environmental releases, and they acknowledged that and they're working on that, so we didn't have any ability to -- to deal with that section, even though there are a few tables in the TBD that --

MS. MUNN: Point it at the -- point it at the...

MR. BELL: Oh, I keep forgetting to do that, right.

Well, I somehow bypassed the strengths. Let me cover that, since it's not up there.

We found the report in many ways to be an excellent report. I mean the development of the processes and the history behind things, very, very well put-together to help us understand. I think the workers hopefully would understand that this process helped in -- in going through it all. NIOSH made the decision that type S solubility for respiratory tract tissues is appropriate, and we agreed with that. They've used an assumption of type S for respiratory diseases and type M for organ

doses and other organs, and we felt that was sufficient and the right way to go. Type F was used for UNH, and that was correct.

And the analysis of organ dose from urine is a complex process and we felt that, even though they tried to address that in a fairly (unintelligible) way, there's still some pitfalls in that process and NIOSH indicated they're going to work on that and address that. The TBD did some work for -- on urinalysis in the mid-1955's on some of the effects of the daughters of uranium 234, 235 and 238 and thorium 230, and provided a section 6.1 that dealt with that. And we'll talk a little bit about that. I think there needs to be little more done to characterize the dose from -- from particularly raffinates.

And NIOSH then made a concerted effort to obtain a lot of documents. The reference list was extensive. The kinds of documents they -- they reviewed was -- was very helpful and we utilized those extensively. Their data history was clear and insightful, the nature of the plant operations, and it helped us a lot understanding what -- what was going on at the

plants.
I sure did lose two slides there. Sorry about that.
Okay. There was very limited data in the early period, particularly from 1942 to 1945. Film badge program did not start till late in 1945. Extensive dust studies, although Mallinckrodt started some in '47, really didn't begin until about 1948 when AEC New York Operations Office got involved and Mont Mason came to the plant and began to try to work on improving it. And at that point a lot changed in the Mallinckrodt process, and a lot of improvements were made within a year or two. Our feeling, our confidence in some of the data as we went out beyond that point became better and because you had experts that were working and using some of the state of the art techniques at that time. But -- but the data really, we feel, is kind of incomplete up until basically 1948, even though they were developing some and talking about that detail.
The assessment of internal dose is -- involves an area that we think is -- needs more development is the raffinate and trace

radionuclides. There's more that needs to be done, we believe, in characterizing that, particularly actinium 227, which if it's concentrated can represent sometimes a significant dose, and we don't think the TBD Rev. 0 has really addressed that as fully as it should, and we hope that Rev. 1 will come back and do that.

In the early period the SEC has decided to work on a period from '46 to '48 and -- and they basically made a statement that they think that the data is limited during that period and that it's not feasible to estimate Mallinckrodt employees' doses with sufficient accuracy, and they referred that issue to the Board for consideration.

If you look at their SEC petition, which we just got, you'll find this is backed up by the fact that in the first early years, particularly for dust concentrations, and you look at their table, the number of employees that they have information on versus the total employees, the percentage of information that they have for these folks -- about 18 percent in 1946, 12 percent in 1947 and only about ten

percent in 1948, which I found interesting because that was the year a lot of the extensive dose studies started to be done by the AEC. But our concern is that ten, 12, 18 percent is a difficult base to work from to try to project doses to the other 80 percent or so of people, and that there are some potentials for higher doses that may not be caught in that process.

And in our meeting in Cincinnati, NIOSH has indicated that -- that they're working on a way to try to demonstrate how they (unintelligible) the technique and how it might capture some of that, but we -- we had some concerns on that. The table 31 coworker doses need a better methodology, we think. The data's there, but the -- the methodologies that they used to develop that data and put it to use for individual use doesn't seem to be very well developed, and we had a little trouble seeing how they applied that. It may work quite well when they do the individual dose reconstructions, but we haven't been able to see that. So we'd like to know more about that, and I believe they're going to probably

try to address that in more detail in -- in Rev. 1.

And we'll talk a little bit a little bit later on time-weighted averages. There's some uncertainties there and we think they need to firm up a little bit of that.

And then at our meeting in Cincinnati, after talking a good deal about how to quantify uncertainties, NIOSH brought up the fact that they may be considering the use of the upper 95th percentile bounds as a way to deal with the uncertainties associated with the time-weighted average air concentrations. And I think that's going to help a lot in resolving a lot of our concerns, which we didn't have available in the -- in the Rev. 0 -- 1 -- thing.

Okay. The completeness of data, NIOSH has made a concerted effort to obtain a lot of records. We had pointed out fairly early that there was a source of documents down at the ORISE CER vault and, as I was going through some documents even last night, I saw that they also began to be aware of that and were -- were actually, about the same time, beginning to

pursue that, and we'll talk later, but I think they've got about six boxes of that data now, and I think that's going to be helpful. We hope that -- and maybe they can comment more, but we hope it has some of the raw data cards for the early period that could help in reconstructing individual doses.

Still a little concern -- and Naomi -- Naomi Harley did a lot of the early work at the Nevada -- at the New York Operations Office for AEC on the data collection process. And in fact, NIOSH provided in one of the rebuttals back on Bethlehem Steel some very good information on Naomi Harley's process of dealing with these. And she's very well-respected and I'm sure that they were using some of the better techniques they could at the time, but -- but as we'll talk a little later, there -- there is a concern that they didn't under-- they don't know enough details about the location of the samplers, what the calibration of the samplers were and some other things which -- which make it kind of questionable whether they have all the data needed to really make accurate estimates, so --

based on that.
Now in terms of technical accuracy we think it's lacking for the early period. I think the SEC petition, the early -- the first one, indicates that they'd support that.
In terms of internal dose and raffinate and trace radionuclides, we -- we think that really does, as I mentioned, need further application.
(Pause)
The fact that there might be some additional raw data to validate some of the tables that they've dev-- I think is -- is very important. We -- we looked particularly at table 21, which was the one that tried to use the '48 data that AEC had done in the late '48. There were two basic studies, one in April and one in February, and they -- they used that to project back doses that they thought people received from the '42 to '46 or '47 time frame at Plant 4. And as we go into a little more detail, we think there's an awful lot of samples that we found in those dust studies that are -- are much higher than the kinds of average -- weighted averages that they received, and we think that there's -- at least there needs to

be a technique to explain how they did that and whether those are incorporated or not. NIOSH feels they are. We don't see the evidence of that and we think that the -- the values that were utilized to transpose back to the early period likely may have missed some high exposed folks that -- that would -- if they'd looked at more closely or we had raw data behind it or source term data or even extrapolations back from perhaps urine data later that -- that there'd be a way to evaluate that and perhaps adjust that somewhat. The 95 percentile thing is an issue, too, that could be very helpful in that.

And as to say, we'll get into the efficiency calibrations a little more, and also the use of the CER vault data which -- which they are doing.

Now the technical accuracy areas internal dose factors that are missing, there are these unknowns and calibration efficiencies, location of samplers, where they were taken, whether they were multal (sic) samples or not, the duration of time the samples were taken -- all issues that, if not properly evaluated, could -

- could perhaps lead to underestimates of dose. And I realize they're working with limited data and that's difficult to do, but if -- if there is further information that's available on that, it would be helpful, especially in the Rev. 1 discussion.

We brought up the issue of heavy breathing, and that's come up in Bethlehem Steel. I don't want to belabor that. Some people are mouth breathers and that potential is greater then for perhaps a higher dose than would be 'ticipated (sic) from the general averages and it's just something that needs to be looked at. Our worker -- site worker experts that some are here today have brought up the concern about ingest inhalation from skin and -- and glove contamination. We -- we don't find a lot of documentation on that in the records and -- and we think that is a potential -- perhaps not staggering amounts of dose, but could be significant if people are in areas where they're smoking and eating at the same time in lunchrooms or are touching surfaces uranium metals (unintelligible) and transposing it to their mouth or inhaling the dust from that.

And finally we'll talk a little more detail on the raffinate waste.

(Pause)

DR. WADE: Would you like me to just sit up there to --

MR. BELL: Maybe, it just doesn't seem to want to respond for me. I -- it -- should pressing the arrow button. Correct?

(Pause)

Okay. Table 31 data basically was the coworker data, and this is discussion of the inhalation intakes that workers had, and they were provided by job categories that they broke out. I think that there may be other job categories that was reduced some to make it easier to put it in a table, but there may be job categories that weren't necessarily covered. And the explanation of how they take the inhalation dose and how they convert that to an individual dose, as I mentioned earlier, wasn't sufficiently explained and we think maybe Rev. 1 will do a better job of that.

The application of 1948 data for coworkers in particular for dust inhalation study work back to the early days, from the site experts we've

talked about there was limited data collected in the early period, probably limited coworker data to use, and therefore it's difficult to imagine that there is good coworker data that can be correlated with an individual that they're actually doing a dose reconstruction on. And so we think that there's a weakness there that needs to be improved a little bit and explained better.

Also, the GSDs in table 1 were in error, and NIOSH acknowledges that quite early and indicated they're correcting those and that will be done in TB-1 -- Rev. 1.

In terms of time-weighted averages, measurements of -- -- in -- in -- in the case of the (unintelligible) for minimum dose may have been taken over just a day or two, not necessarily for the whole period, so there's a little concern about how accurate they are.

There are no uncertainty analysis (sic) done on them, and as a result NIOSH, in the SEC petition, is acknowledging that perhaps a way to handle that would be the 95 percentile value. And the high exposure worker is not captured by some of the average dust study

samples, and so we have some data that we presented in the report about samples that really are quite high, and we just think that with those kinds of levels for some of the high dust concentration studies -- I mean work, that these should have been more adequately addressed some way to show how they were handled.

As an example, in 1946 for a green salt TA-7 packer, their highest dose was -- was 13,000 in the table. And yet if you look in the specific reports like in February '49, the TA-7 packer had an average of -- of 24,000 -- 27 -- 27,400, but as high as 40,500. And if you look at people that worked around the dust collectors, they had an average of -- of 823,000 and a high of 2,870,000 -- these are dpm per cubic meter. And also furnace cleaners, who we've all heard had -- had some -- some specific doses that probably were high -- case where 53,000 was the average dpm per cubic meter and the high was 77,000 dpm per cubic meter. And in the table 21 there -- there is no -- there's no information on that -- those particular categories, and there's no coworker data to

corroborate that, either. So we think that represents a problem in validating those kinds of doses.

We've talked and Joe mentioned the poor ventilation. This was a real concern to the workers. As we talked to our site experts, so they -- they really didn't have much. They were told to wore -- wear just regular face mask kind of thing, which -- which they did when they wanted to do, but if they didn't want to, there was nobody there that, you know, basically said you should be doing that, so it was up to the individual to determine how much protection they received. And that wasn't until Mont Mason came in around '48, '49 they began to evaluate the need. He rebuilt some of the plants and devel-- developed better ventilation systems for those plants that this problem began to be rectified, and yet when you take the information at hand and look at the SEC petition, it's also agreed that even though they made all these changes, they still had trouble keeping these -- these values in the early -- in later years even down below where they would like them. It was much better in

the later years than it was earlier. And the air sampling may not have been sufficient to capture the areas where the significant dust really was occurring in some of these operations.

Now Hanson Blatz and Merril Eisenbud did some estimates very early in the 1951 time frame on -- on lung burdens and some other organ doses, and very interestingly -- this is addressed in the TBD as just specifics, but it didn't go into the fact that -- of 17 people that they did the reconstruction, did some calculations, had doses as high as 1,000 rem to the lung. And so this wasn't mentioned specifically in the TBD. Perhaps maybe in TBD Rev. 1, but we think it's an important issue that needs to be looked at carefully when -- particularly for lung dose.

Early monitoring data wasn't specifically geared towards the individual worker. It was more of an area monitoring to validate dose levels. The workers, we understand from our site experts, were often not made available. They were -- they didn't know the information. They didn't know what they were working in, so

there wasn't -- there wasn't incentive for them to be careful about what they were doing or wear their masks and so -- so we think that represents a problem. And as we mentioned, the 95 percent confidence bounds may be a well -- a way to resolve this concern about the uncertainties in the process.

In terms of the raffinates, the TBD Rev. 0 mentions them in certain areas, predominantly in one of the tables on page 51 on their table there and it talks a little bit about -- in section 6.1 about what the dose reconstructor should do about that. But we're concerned that -- we know that from Mound, who verified that they got from Mallinckrodt waste that had both radium 226, protactinium 231 and actinium 227, that these -- these were specifically in the -- in the raffinate waste that was coming to them for processing. And Salusky* in 1956 mentioned the sperry cake consisted of .1 to .2 parts per million of protactinium, and we did some calculations on point -- actually .3 parts per million and found that that can represent a significant dose, particularly when these are concentrated, and this wasn't adequately

addressed in TBD 00 and hopefully will be in -- in the TB (sic) 01.

I think it was brought out that this -- this point -- .3 parts per million, and we did some calculations, that it could have represented as high as 14 nanocuries per gram or 1.43 times ten to the ninth eighth (sic) curies per gram of protactinium 231. Also there are 530 becquerels per gram sperry cake, and these are -- actually actinium is in equilibrium with U-235 in the ore, and thorium 230 was addressed in the TBD for the periods from 1955 to '57 in Plant 7, but we think that there may be periods earlier than that where this should be looked at, and they may be of significant concern, even -- even a milligram per month over a few years of actinium 227 or protatim (sic) 231 can represent a significant internal dose, both to the bone surfaces and to the lungs.

And page 20 of the TBD actually does mention the potential for resuspension of raffinate particles during dewatering, and -- and I think it needs to be a little more explanation of how they feel that -- that dewatering process, what might affect the raffinate release and -- and

inhalation, or -- or perhaps even aerosolization.
Table 32 we think needs to be re-evaluated. It's a -- an attempt to -- to deal with thorium, but I think it's -- it needs to have more attention.
And on page 23, 42 and 43 they do acknowledge the decay chain radionuclides, especially in the sense of scraping from filtered waste and -- and that's an area that I think could -- could use some more development.
Outdoor pitchblende ore storage also represented a potential here and it was not carefully evaluated in any detail and I think could -- could benefit from that kind of additional consideration.
Adequacy of external dose data, we're all quite aware of the -- the lack. There was no -- no film badging basically in the early period. When it started up in -- in 1945, late '45 and early '46, the records are pretty good on -- on the numbers of people that were exposed, and I think NIOSH presented in their SEC petition a very nice table summarizing what the film badge exposures were like. We had asked for that in

Cincinnati. I'm pleased to see that they've incorporated that in the SEC petition because I think the workers, as we talked to them, had a very hard -- had a hard time understanding basically what the range of doses might be and where they fit into this.

The appropriate organ electron dose factors for locating energies we think needs further development since there isn't a correction factor for that, and I think -- in an area that might have an impact on dose.

The use of fixed-position gamma monitoring data is not yet incorporated. And if it is, Globerman* mentions a number of considerations about some of the problems or disadvantages of using that technique for evaluating it, and I think those need to be looked at a little more. And I can understand SEC and NIOSH in their SEC petition has quoted Globerman, so they're -- I think been reviewing that, too.

Use of average weekly film badge doses for an individual recorded dose past 19-- in other words, if they don't any dose earlier, they're using later data, weekly doses and -- and accumulating that o-- and then dividing it by -

- by the time the person -- weeks that they're exposed to come up with an estimate of their -- of their actual gamma exposure. That may be a problem for -- especially for people in the high exposure areas where it's not capturing -- the average is not capturing that kind of a potential.

So in conclusion, a lack of uranium dust inhalation data in early periods and the concern for the average -- dose weighted averages, may have uncertainties that are not captured in Rev. 00, and it makes it probable that tables 21 through 24, and particularly 21 and 22 -- 21 was for Plant 4, 22 for Plant 6 -- and the early -- the early values that were used in those table to go back to the early periods are the ones that we're specifically kind of looking at and wondering whether those couldn't be adjusted or improved, particularly with the 95 percentile dose -- the 90 (sic) percentile thing factored in.

This makes it important in SCA's position that these issues be more thoroughly reviewed before moving beyond the use of the DWEs* for minimum dose calculations. The SEC says that there is

some concern doing that for -- certainly for the early period from '42 to '45, even in the '42 -- '46 through '48 time period there's still not -- not quite enough data to do that adequately. I think the SEC petition indicates that they feel more comfortable doing these dose calculations and reconstructions with the data from '49 on.

However, when we looked at the dust study data in the -- in the report we have -- mention a series of things that might have an impact on these time-weighted averages that certainly should be considered as they re-evaluate them in Rev. 1 and one is just the -- the measurement uncertainty that we -- we really can deal with if we use the 95 percentile.

The measuring over just one or two days rather than the entire period, the variations in routines of workers, they may not always be doing the same thing, and those average tables don't really capture that movement around.

The variations in the ventilation that occurred, some areas better and some places almost non-existent.

Off-normal practice that occurred. We've heard

number of testimonies of things that happened, explosions off a furnace and other things, which created high episodic releases that are not very well addressed and could -- could represent significant dose to individual.

And finally job categories are not necessarily always properly categorized and some are missing in some of the tables.

So overall I think NIOSH has done a very extensive job of trying to evaluate what -- what kinds of things might have happened. The report covers a lot of these, but falls short in some areas. I think the -- I really appreciate what they have done in terms of response to our questions, and eventually to our resolution process, to try to resolve these things. I think they're working very earnestly to address those and I'm -- although we haven't seen Rev. 1, I have a lot of confidence that maybe a lot of these issues will be addressed, from what they've told us, and hopefully can provide more data that we can base our decision on. Thank you.

Any questions?

DR. ZIEMER: Thank you very much, Tom. And

Tom, it appears to me that the slides you presented here today perhaps have been revised somewhat from what the Board has in its packet, and I'm wondering if -- if we might be able to get a -- an -- sort of up-to-date copy of what you presented here? I've noted --

MR. BELL: They're -- they're revised from what I was planning to talk to, so I'm not quite sure where it got crossed. I've had some problems skipping around because of that. I don't know why the confusion on that. I mean we only sent one set to Cori and -- on the last day, January 31st, but definitely there is some problems, yes.

DR. NETON: Dr. Ziemer, I might be able to elaborate a little bit on that. There was a -- at the -- there were two versions of the presentation that we received. The one that's in the handouts is the last version that we did receive. What you're seeing here is the first version, and somehow that second version didn't get incorporated onto the -- the computer, so --

MR. BELL: Okay, well, that -- I -- explains. That's why I was bouncing around a little bit

here, was -- slides were coming up that weren't (unintelligible).

DR. WADE: I think you did very well at that.

MR. BELL: Okay. Well, thank you.

DR. ZIEMER: Which -- which version should we consider the sort of official --

MR. BELL: Well, I would think the ones you got latest would be the best ones to work from.

DR. ZIEMER: Best ones, okay. Thank you very much.

MR. BELL: I apologize for the... I mean I didn't try -- that's why I had to -- just have to kind of quit talk-- talking.

DR. ZIEMER: Yeah, you were equally surprised.

MR. BELL: Yes, and any further questions you might have.

DR. ZIEMER: Yeah, let's open the floor here for questions, Board members.

DR. WADE: Well, before any questions, I'd just like to, from NIOSH's point of view, thank SC&A for their -- their approach to this process. I think we are learning how to do this better and I think that the lessons we've learned reflect well in the presentation that you made, so thank you.

MR. BELL: Thank you, sir.
DR. ZIEMER: Wanda Munn. Jim. Okay.
MS. MUNN: No questions, just a comment. I think I can speak for the other members of the working group that the January 18th meeting was, in our view, extremely beneficial to all the parties involved, and was particularly useful in establishing a better concept for us of what process to undergo. If other members of the working group have comments on that, perhaps the full Board would be glad to hear that, but I was very impressed, personally. And I think the general feeling amongst us was this was probably one of the better interactions that we'd seen, both in terms of technical exchange and a much better, more effective way to resolve the issues that we as a Board had seen arising.
DR. ZIEMER: Okay. Thank you. Dr. Melius.
DR. MELIUS: Yeah. Again, I -- I guess my question is to -- both to NIOSH and I guess to -- to the Board here, is sort of where do we go from here with this? We -- we've got a -- again, I agree, I think a very good review and glad the process worked better this time, but

we also have a revised site profile that some of us got a chance to read on -- probably on the plane on the way out here or whatever. Not everybody has, and it's clearly not at that -- it's still in draft form, and I guess my question to be -- to NIOSH is where does that stand in terms of -- of -- of being completed, and I think that would then sort of set the stage for what do we do -- do from here in terms of -- you know, further comments from SCA, I mean there's lots -- lots of options, but I think some of it depends on timing, so --

DR. ZIEMER: Thank you. Dr. Neton --

DR. NETON: Yeah, from NIOSH's perspective, we received the -- the second version or the revised version, I think it was January 31st that it was issued, so we -- we've not had it very long, either. We are -- we do agree that the meeting on the 18th was beneficial and some of the issues we discussed were incorporated or -- or revised in -- in the report, but we will prepare a presentation or a written response to the final report and what we believe to be the significant findings and areas where we -- we have -- we may still have some remaining

issues.

DR. WADE: Jim, I think the question, though, is when might we see Rev. 1?

DR. MELIUS: Rev. 1 to the site profile, yeah.

DR. NETON: Oh, Rev. 1, I'm sorry. I thought you meant our response to the current version.

DR. MELIUS: And I guess my -- if you -- when you're answering this, I mean -- I don't think you necessarily need to do a response to this if you're -- I mean if Rev. 1 is close to being completed. I mean it -- I don't want to make sort of needless work and time spent addressing things you already are addressing. And maybe there's some other options we can think about in terms of further review and -- and so forth so --

DR. NETON: Yeah, I -- I think the fundamental issue here, though, is Rev. 1 is not likely to -- to address every single issue or finding that were -- that was raised here. As we've said all along, these are living documents. Rev. 1 -- there is a draft version. I believe the Board may have had an opportunity to look at that. It's substantially larger. I think it's double in size than Rev. 0. It's over 250

pages now.
But there are still some outstanding issues, such as these cards that -- that Tom Bell referred to that we're receiving. There are six boxes of data that were retrieved from the ORAU vault. Those have not yet been digested and evaluated by ORAU.
Nonetheless, we think that it's -- it's important to get the first -- the next Rev. out there so that we can use it to address cases where we can. That being said, I think Rev. 1 is -- is fairly close. I'm reluctant to give an exact time frame without maybe discussing it with our ORAU counterparts here, but I -- I certainly think in a matter of -- of a month or so is probably a reasonable time frame to get the next -- the first revision out. But again, that's not likely to address every single issue that's raised by the SC&A report.
DR. WADE: And that's fine. I mean that's not necessary, but you think within a month's time it might be possible to put Rev. 1 in the hands of SC&A?
DR. NETON: Approximately a month's time frame.
DR. ZIEMER: Thank you. Mark Griffon?

MR. GRIFFON: I -- I just had a -- I think Wanda was -- I just wanted to clarify with Jim, though, the document we received via e-mail I think Friday says Rev. 00-C, so this is not the Rev. 1 that -- that --

DR. NETON: No, that -- that would be -- that will eventually become Revision 1.

DR. ZIEMER: Thank you. Wanda Munn, and then Jim Melius.

MS. MUNN: Especially in view of the concerns that we've heard expressed by former workers and survivors with regard to the reliability of the data, and even the availability of raw data on these early years, I'm wondering whether enough is known about the six boxes of new information that's turned up to even tell us what years that are covered. Can -- can you give us any information at all about --

MR. BELL: That would --

MS. MUNN: -- (unintelligible) boxes.

MR. BELL: -- be very helpful. I would appreciate it if Jim could help us a little bit on that. I -- we're -- we've got a lot of hope for those boxes. They may not have as much as we think they do.

MS. MUNN: Anything.

DR. NETON: I'm sorry, I'm just not prepared to address it -- that at all. I haven't seen the boxes myself. I don't know that ORAU's even gone through all six boxes yet to make that determination.

DR. ZIEMER: So there's no early indication of even what years are covered then. Is that correct?

DR. NETON: I don't know. I don't know if anyone from ORAU is here that could shed light on that issue.

DR. ZIEMER: Apparently not.

DR. NETON: Judson Kenoyer is at the meeting. I'll -- I'll get together with him -- he's not here at the present, but I'll ask him. If we can answer that question, we will.

DR. ZIEMER: Thank you. Dr. Melius.

DR. MELIUS: Then -- then given the information we've just received, I would agree, I think that NIOSH should prepare a response to the SC&A report, but they should do it in the context of this revision being underway, as well as what's being planned in terms of further revisions and -- and so forth, just to

avoid sort of needless work of trying to rel-- and that hopefully we could then have a -- maybe another meeting between NIOSH and SC&A to try to resolve some of the technical issues as they've done there that have come up during the NIOSH's review with -- and so forth and then see where that -- that takes us. (Unintelligible) have to revisit this a little bit after we discuss some of the SEC issues today, and there may be particular things we'd like to have the interchange between NIOSH and SCA focus on, but that may be more apparent this afternoon. But I think that would be a reasonable process for this --

DR. ZIEMER: Actually -- and what you're suggesting is a process quite parallel to what was done with the Bethlehem Steel, and that is to ask that the issues that have been raised be addressed and that the two groups get together on factual accuracy information and try to resolve some of these issues, hopefully with Board members present again so that we can observe the exchange and make -- make sure that we're satisfied with how that is being carried out.

If -- if the Board wishes to wait on -- in formalizing this action till you've heard other things in the meeting relating to this, we can delay that. Or if you feel like you're ready to take action now specifically on recommending the process for going forward, we can do that, as well.

MR. BELL: Mr. Chairman, I might say I think that's beyond our current tasking to do that, but if -- if it were handled as part of the issue resolution process --

DR. ZIEMER: Right, and we --

MR. BELL: -- I believe that's the way we'd have to do that.

DR. ZIEMER: Right, and we understand that in terms of adjustments that may need to be made to tasking for that purpose, as we did before, and Dr. Wade can work with John Mauro on those kinds of issues as -- as -- if -- if the Board so wishes.

Yes, Jim.

DR. MELIUS: The -- yeah, I would recommend that we just go ahead and formalize this at this point. If we want to modify that this afternoon or make specific recommendations at a

later point, we can. So I would --

DR. ZIEMER: That would be fine. Why don't you go ahead and make an appropriate motion and we'll get it on the floor.

DR. MELIUS: I move that the Board accept the SC&A review of the Mallinckrodt site profile and that NIOSH and SCA move ahead to -- first that NIOSH prepare a response to the SC&A comments; secondly, that NIOSH and SC&A then hold a meeting, with Board members present, to discuss and resolve any technical issues related to the -- SC&A's comments, as well as the NIOSH response.

MR. ESPINOSA: So moved.

DR. ZIEMER: You've -- you've heard the motion. It's been seconded. The Chair will not try to repeat it, but I -- I would suggest one I believe friendly word change. Rather than "accept" the report, to "receive" the report, the difference being that to many, under Robert's rules, the acceptance of a report implies endorsement of all its findings. We do not know yet whether we in fact accept all of the findings of the contractor. In fact, some of these perhaps remain to be developed as the

process that you've described continues. Would the mover agree to the word "receive" the report?

DR. MELIUS: Yes.

DR. ZIEMER: Yes. And the seconder?

MR. ESPINOSA: Seconder agrees.

DR. ZIEMER: Yes.

MR. BELL: Mr. Chairman, I forgot to push the last button, just acknowledge the folks that worked on this. I apologize for that. It's in your packet, but I did have people that worked with me on the preparation of the report and it was initially -- it was reviewed by Mike Thorne, who has done the initial review on Bethlehem Steel, as well, and reviewed by Dr. Mauro and -- and Joseph Fitzgerald, so -- Dr. --

DR. ZIEMER: Thank you very much. We do thank all the members of the team. And having seen the names, I think we still will go ahead with the motion. No, we do appreciate the work of the contractor on these on behalf of the Board. Other -- is there any discussion on the motion that's before us?

DR. WADE: Could I offer a --

DR. ZIEMER: Yes, Lew, please.
DR. WADE: I think it would be most beneficial if that get-together was to happen once SC&A could have Rev. 1 in their hands, as well, so I just think that would be of benefit.
DR. MELIUS: Yeah, I agree.
DR. ZIEMER: Can we take that as the intent of the motion?
DR. MELIUS: That's the intent. I actually just think in terms of practical timing, I think.
DR. ZIEMER: Mark Griffon.
MR. GRIFFON: Just -- just a -- a process question on that. I -- as we have several of these things where we're talking about having NIOSH and SCA have these meetings to work out technical iss-- we -- as -- and I agree with Wanda. I was at that meeting and it worked very well. It's a good exchange. You can get down into the technical detail better with a smaller meeting and -- and that worked out very well. I'm just wondering if we shouldn't -- and we've talked about this before -- set up ahead of time several subcommittee meetings and have several of these issues at one

subcommittee meeting, if that makes any sense at all, in between Board meetings so that we could have SC&-- all the -- the parties will be similar. There may be different team members that have to come in and out, but you -- you -- you could do Bethlehem Steel follow-up, Mallinckrodt follow-up, the 20 dose reviews, you know, if that needs to be followed up on --

DR. ZIEMER: We can certainly do it that way as opposed to a working group. The issue will be the ability to do that on short notice between SC&A and NIOSH will be difficult because of the advance need for -- if it's a full subcommittee meeting -- to have postings in the *Federal Register* and it becomes an open meeting. But we can certainly do that if the Board prefers that. It will -- it represents some practical difficulties in moving ahead rapidly on some of these things, but if --

DR. WADE: But certainly if that's the wish of the Board, we can --

DR. ZIEMER: -- if that's the wish of the Board, we can do it that way.

MR. GRIFFON: I think it's certainly a more open process to the pub-- I think we have to

have that balance of the openness and the efficiency --

DR. ZIEMER: And that's -- and that's fine, yes.

MR. GRIFFON: -- yeah.

DR. ZIEMER: You're just commenting at this time, and if -- at some point if you want to formalize that, we can do that as a separate motion. It would be an implementation issue for this process.

MR. GRIFFON: Yeah.

DR. ZIEMER: Are you ready to vote on the motion? It appears that we're ready to vote. All who favor the motion say aye?

(Affirmative responses)

Those opposed say no?

(No responses)

Any abstentions?

(No responses)

Motion carries, all voting in favor. Henry Anderson, are you on the line?

DR. ANDERSON: (Via telephone) Yeah, I'm on the line and I'm voting yes.

DR. ZIEMER: Thank you very much. Thank you very much, Tom. I -- are there other -- let me

ask if there are other questions for Tom or for Joe at this point. If not, we thank you very much and that will complete this portion of the agenda.

SUBCOMMITTEE REPORT AND BOARD DISCUSSION -- FIRST SET OF CASE REVIEWS

We're going to move to a subcommittee report and Board discussion on the first set of case reviews.

At the subcommittee meeting yesterday the subcommittee identified 22 new cases to present for audit, to ask our contractor to audit. I'm going to refer you to the list that's the randomly-drawn list of cases that were under the first tab of your booklet. That's the subcommittee tab. The first part of that tab had the minutes of the subcommittee and then the list of cases.

The subcommittee is recommending to this Board that the following cases be included in the next set of dose construction -- dose reconstruction reviews. I will identify these by the number -- the last digits in the number in the left-hand column, and I'll also identify by site. Are you ready for the listing? And

others of the subcommittee who were present can help the Chair if I -- if I miss something on the list.

Case 8, Paducah; case 11, Idaho National Engineering Lab; case 15, Los Alamos National Laboratory; case 18, Feed Materials Production Center; case 23, Dana Heavy Water Plant; case 25, Hanford; case 27, Oak Ridge Gaseous Diffusion Plant, K-25 and Y-12; continuing on the second page of the listing, case 36, Nevada Test Site; case 39, Idaho National Engineering Laboratory; case 43, Y-12, Oak Ridge; case 52, Idaho National Engineering Lab and Nevada Test Site; case 53, Hanford; case 58, Lawrence Livermore National Laboratory; case 62, Pacific Northwest National Lab and Hanford; case 65, Hanford; case 69, Paducah Gaseous Diffusion Plant; case 70, Pantex Plant; and continuing on the third page --

MR. OWENS: Dr. Ziemer --

DR. ZIEMER: Did I --

MR. OWENS: -- I'm sorry to interrupt, but according to my list, I think that we've had some omissions. If we could start on page 2 again, after case number 36, Nevada Test Site,

we then had case number 39.

DR. ZIEMER: Thirty-nine, did I -- I have that on my list. Did I omit that?

MR. OWENS: Okay, and then case number 41.

DR. ZIEMER: I'm sorry, you're correct, case 39 -- let me correct the list. Thank you. Case 39 is Idaho National Engineering Lab. Case 41, did I miss that one, too?

MR. OWENS: Yes, sir.

DR. ZIEMER: Yes. That was a Feed Materials Production Center; case 43 was next and then 52 we had covered and 53 and 58 and 62 and 63 and 65, Hanford, and 67, Savannah River Site; 69, Paducah; and 70, Pantex. Did we get all -- get those correctly? Okay. And then -- thank you very much. And then going on to the last page, there are two more. It's case 89, which is Rocky Flats, and case 99, which is Argonne East. Those, taken together, constitute 22 additional cases that the Board is asking our contractor to help us audit.

This comes as a motion from the subcommittee. It's on the floor for discussion. Mark?

MR. GRIFFON: Yeah, I -- being a member of the subcommittee and having voted for these cases,

I say this tentatively, but afterwards I found -- I -- I got new information, I guess, is -- is the way I want to put this, and I think that we should consider dropping a couple of cases and replacing them. One is the -- case number 23, the Dana Heavy Water Plant, and I did talk to NIOSH staff and Stu Hinnefeld indicates that that was a non-radiological plant, so this would all have been medical dose. And you know, even though the POC looks relatively high and it might be interesting to see how they overestimated this, I also think we have to take into account that these 20 are going to be our advanced reviews, and I think it might be sort of a -- a misuse of resources to do an advanced review on a case that wasn't even a radiological site. So that's -- that's the one I propose dropping.

The second one is case number 69, which is a Paducah colon cancer. The interesting aspect of this, which I must admit I missed in the first brush, is that colon cancer is a SEC-covered cancer, so it escapes me why this would be included, unless the time period of the cancer was prior to the time frame for the SEC

coverage period. So this person may have been employed prior to them doing radiological work at the site, might have been in the construction phase when they were just putting the buildings in, so I don't think there was any radiological material there. So I don't know that that's worth -- again, worth an advanced review.

And I would propose actually replacing them with number 5, which I know we skipped Savannah Rivers and, Paul, I -- this is a 40 percentile and the reason I think now this might be useful is because of the information we got after our selection process yesterday was a reminder to us by SCA that these -- in fact these last 20 in their task were going to be the advanced reviews, and I -- I had forgotten that when we were doing the selection. We sort of skipped all the Savannahs and I was sort of skipping a lot of Hanfords 'cause we had done quite a few already. So I thought we could add that one on, number 5, and also number 74, which is again one around 40 percentile and it's a Hanford case.

DR. ZIEMER: So Mark, you are making a motion

to amend the recommendation of the subcommittee --

MR. GRIFFON: Yes.

DR. ZIEMER: -- and is there a second to the motion?

MR. GIBSON: I second.

DR. ZIEMER: There is a second. Before I ask people to speak to the motion, the Chair will exercise the prerogative on a motion like this, which is somewhat complex, in a sense. I'm going to split the motion into two pieces. The first part will be the dropping of two cases, and then we will act on that, and then we will act on adding because others may wish to add others, and a motion of this type is the prerogative of the Chair to split the motion, so I will interpret it as two motions and two seconds, and we will deal first with the first motion which is to drop the Dana and the Paducah case.

DR. ROESSLER: Give numbers.

DR. ZIEMER: Cases number 23 and 29 --

MR. GRIFFON: Sixty-nine.

DR. ZIEMER: -- 69, 23 and 69, so we're now addressing that. This is -- this is a motion

to amend by dropping those two. Do you wish to speak to the motion to amend? Yes, Wanda.

MS. MUNN: Yes. With respect to item 69, the Paducah case, do we have -- I'm sorry, I don't remember what the dates of the SEC are. Can we identify that? Do we know if it is in fact outside the SEC?

DR. ZIEMER: Do any of the NIOSH folks know the answer to that? Is that outside the covered period? I guess the question was why was that on the list.

MR. GRIFFON: Or -- or it could have been a case of short-term employment, less than 250 days.

DR. NETON: That's the best of our recollection is it's probably a 250-day minimum employment requirement.

MR. PRESLEY: (Off microphone) (Unintelligible) year and a half, though.

MR. GRIFFON: So I guess the whole --

DR. ZIEMER: It didn't meet the 250-day requirement.

MR. GRIFFON: Right, I guess the whole time period's covered, but they might have not met the 250 days --

DR. ZIEMER: Right.
MR. GRIFFON: -- so...
MS. MUNN: So --
MR. GRIFFON: A different consideration, I guess, yeah.
MS. MUNN: So the different consideration is this is a less than 250-day employee?
MR. GRIFFON: That doesn't seem to work with the one and a half years listed on the years worked.
MS. MUNN: Well, not only that, but doesn't that automatically exclude them from consideration under the Act?
DR. ZIEMER: Jim Neton?
DR. NETON: There may -- there -- occasionally when there's more than 250 days, we may reconstruct the dose. If the person was a contractor, for instance, and intermittent employment during that year and a half, we would over-reconstruct the dose, in that sense, and give the person 100 -- the one and a half years exposure, even though the aggregate was less than 250. I'm not sure, I'm -- I'm speculating --
DR. ZIEMER: The work span might have been a

year and a half, but the time on -- on-site may have been less.

DR. NETON: That's correct, it's -- it's possible. I'm not saying that is it, but that's one possible explanation.

DR. ZIEMER: Stu Hinnefeld, do...

MR. HINNEFELD: Well, I wanted to offer an explanation for how that work time is calculated or how it's generated. The years worked is not a value that we store in the database. When we generate a report like this we have a routine that calculates what was the work, and we do that by start date/end date for each employment period. And so in this case, if we have a start and end date of employment that's a year and a half apart, even though it may have been intermittent and the whole 250 days --

DR. ZIEMER: Yeah.

MR. HINNEFELD: -- you know, he didn't make 250 days --

DR. ZIEMER: Right.

MR. HINNEFELD: -- that may be how it arri-- we arrived at that. That same process also explains the question that came up yesterday,

how could someone start in the '70's and have 58 years of covered employment. In that particular case the employee worked at all three Oak Ridge sites and had several pieces of intermittent employment, say, from 1980 to 1990 and 1991 to 1997, and it's entered in the database as a line for each site. So we'll have three entries for each of those employment periods. So on that particular case, the best approximation of what their actual work time was is about a third of what's on the -- on the spreadsheet.

DR. ZIEMER: Thank you. Further questions?

MS. MUNN: Thank you, I think. I --

MR. GRIFFON: I guess the main point with my -- that -- with dropping that Paducah case was that it was -- we're not exactly certain here, obviously, but it seems like it was less than 250 days employment or else they would have been compensated under SEC.

MS. MUNN: Uh-huh.

MR. GRIFFON: And so is it worth looking into that kind of -- do we want to reconsider that in light of the fact that these are going to be our advanced reviews? I -- I was thinking it

might be better served to do a -- a Savannah River and Hanford, you know, under our advanced review criteria, use our resources a little better. That's the only thing...

DR. ZIEMER: Okay. Yes, further discussion? Okay. The motion is to drop case 23 and case 69. Are you ready to vote on that?

All in favor, yes?

(Affirmative responses)

All opposed, no?

(No responses)

Abstentions? One abstention, thank you.

So that motion to amend carries. Now the -- the other part, the next motion to amend is to add case 5 and case 74, and that now is open for discussion, and you may have other cases you would rather look at, so that's the reason for splitting this.

Case 5 is the Savannah River Site case, that is a bladder cancer. It's just over 40 percent probability of causation, which is one of those ranges that we had an interest in anyway. The Savannah River (sic) case 74, colon cancer, also over 40 -- 40.16 percent.

MR. GRIFFON: I believe that's -- that's

Hanford, isn't it, that second site?

DR. ZIEMER: That's Hanford, I'm sorry. Any discussion? Are you ready to vote on adding these two? I'm going to take it by the quietness that that means you're just raring to vote here.

All in favor, aye?

(Affirmative responses)

Any opposed, no?

(No responses)

Abstentions? Henry, are you --

DR. ANDERSON: I vote aye.

DR. ZIEMER: Okay. Did we get your vote on the previous motion?

DR. MELIUS: Yes.

DR. ZIEMER: Okay, we heard you. Thank you. The ayes have it.

Now what we have before us now is a motion to accept 22 cases. This is the amended main motion. The main motion, amended with the two deletions and the two additions. Are you ready to vote now on the full slate of 22 cases, as amended?

All in favor, aye?

(Affirmative responses)

DR. ANDERSON: Sure.

DR. ZIEMER: Was that you, Henry?

DR. ANDERSON: Yes, that was an aye.

DR. ZIEMER: Thank you. All opposed, no?

(No responses)

Any abstentions?

(No responses)

The motion carries. The Chair had a -- a question on the -- when we vote for the group, and this may have come up before because a number of people have facilities for which they have individually abstained, but which now appear in the group motion. The Chair is unclear whether all of those folks have to abstain. I think not, since we're voting on sort of the block here.

DR. WADE: That would be my assumption, as well, that individuals would not have to abstain when we're voting on the cases as a block, but would when we're voting on individual cases.

DR. ZIEMER: Thank you. The other thing that the subcommittee worked on yesterday was the methodology for characterizing the findings from the dose reconstruction reviews. We have

the report from the first 20 cases, which we dealt with at our last meeting, to some extent. And the subcommittee discussed a methodology for ranking the findings in that type of report. This was a way to organize and characterize the findings of our contractor. And meanwhile, knowing that we had been looking at that sort of thing, the contractor had also independently developed a sort of checklist that would also serve to characterize the findings.

Now we have -- there were two documents then that surfaced and the first of these is a single-page document called methodology for characterizing and ranking dose reconstruction case review findings. This document was developed primarily by the workgroup that we had working with the contractor on -- on the review process. That would be Mark Griffon, Wanda Munn and Mike Gibson, and we have their document. And then also we have provided you, from the revised report from our contractor -- and not all of you got the revised report; it was distributed on the 31st. Some of you will find it back at -- on your e-mail when you get

back, a 300-page report. But there is in that a case review checklist and a copy of that checklist has been provided to the Board. I believe it's also on the table in the back for members of the public. It's called case review checklist and it categorizes how the contractor was considering categorizing these things.

DR. WADE: If you look at the overlap between the two documents -- on the case review checklist if your eye goes to the right side of the page, if no potential significance (sic), low, medium and high, then down to the footnote you see the explanation and that's where there's a commonality or a discussion between the two documents.

MR. GRIFFON: That's their -- that's their ranking system, yeah, right.

DR. WADE: Right, it's their ranking system.

MR. GRIFFON: Right.

DR. ZIEMER: Both of these documents have a similar intent, and one of the issues will be how we sort of amalgamate these or use the concepts contained herein. It's not a matter of adopting one or the other, but perhaps of -- of finding the common ground here.

Let me ask first if after -- and I know, Board members, you've had this at least overnight. Do you have any questions on the checklist that was developed by our contractor, and John Mauro and his colleagues are here if we need to have questions answered. But any questions or comments on that? Jim.

MS. MUNN: Yeah.

DR. ZIEMER: Oh, Wanda.

DR. MELIUS: No, Wanda has the mike -- no, I guess I have the mike. Yeah -- yeah, my comment was, I don't have any particular objections to the checklist, but I found that the -- that it was not a good way of summarizing individual dose reconstruction reviews that, for me, when I was reviewing the 300-page document we got last week, that the checklist really didn't provide a good review mechanism for me. It was helpful information, but by itself it really didn't provide some way of really summarizing comments or me understanding what the basis was for -- for -- for the -- for those comments.

Now I guess -- I think Mark did this, did -- this -- this other -- no?

MR. GRIFFON: I never saw it, no.

DR. MELIUS: Someone's done this other -- other document called summary of findings and so forth, which sort of starts to combine the two, and I found that to be a more useful document, sort of -- not -- both understanding what the comments were, as well as --

DR. ZIEMER: Oh, yes, I neglected to mention that, but Mark had taken the first 20 cases and had taken them I believe by finding number, so 1.1 would be case one, finding one; 1.2 would be case one, finding two and so on. He summarized the findings, summarized NIOSH's response, tried to characterize the finding -- was it a technical finding, what were the other categories, Mark, I forget -- procedural and so on. And what it pertained to, such as internal dose, external dose. And then tried to score it in terms of its relative importance, based on -- somewhat on the scale described in the one-pager. So that document you should also have at hand. I neglected to mention that, but that was a sort of practical attempt to actually go through the series of findings and -- and try to evaluate them.

My understanding on the checklist from the contractor that their intent had been to do that for each case, and then to do a roll-up, and the roll-up would -- what would the roll-up look like? It would talk about the percentage of -- of the 20 cases? Hans perhaps is going to address --

MR. GRIFFON: Let them resp--

DR. ZIEMER: -- speak to that.

MR. GRIFFON: -- describe it, yeah.

DR. ZIEMER: Tell us how that would look -- what it would look like in a roll-up.

DR. BEHLING: Let me also identify a major difference between what Mark did and what we tried to do. Now Mark's summary only confined itself to those issues that were being contested by NIOSH. In other words, the list that you see in front of you that identifies Mark's comments is a very partial list of issues that we identified in our report. In fact, it's probably no more than 25 percent of the findings. So our list -- checklist includes everything. Every single component of the dose reconstruction report is entered into our two-page checklist, which is considerably

more comprehensive than the very partial findings that Mark identified. As I said, and I'll summarize it again, those findings were only those where NIOSH disagreed with us. So those two are very different in terms of what they intended to do.

Now our checklist is a very comprehensive one. Kathy, my wife, and I looked at each of the dose reconstruction reports and broke it down by every element that could possibly contribute to a dose reconstruction. As you will see in some of the individual dose reconstructions, starting with case number 6 and going on to 20, you will see in many instances a lots of NA's, meaning that that particular dose reconstruction report did not even address, for instance, missed photon dose or missed neutron dose or on-site ambient dose. And so we tried to basically look at the total number of -- of ways in which a dose reconstruction report would tally a dose, and then assess each one of those components in terms of whether or not they complied with the procedure. And in some instances, as you see, you will see a low or a medium or -- or a high evaluation.

Now the value of assessing the total then comes at the very bottom of the checklist, which is on page 2. For instances, a series of ones may each in individual instance not contribute anything significantly, but when they're tallied in total, a lots of little nits of -- of non-compliance would, in effect, in the very bottom line perhaps introduce a significant error. And we only had one case where there were a series of twos, where again, in each individual instance and -- and where we had a two, and I think I'm referring to case number 6, the potential error may have contributed let's say five rem here and five rem there that was too low. But when you add them all together, they may in fact, in terms of an aggregate error, introduce enough of a difference that would cate-- drop the evaluation into category three, which is the most severe, where you not only affect the dose significantly, but it's significant enough to potentially shift the compensability of a given claim. And that was our intent is to -- perhaps the aggregate form that you see is not really what you should be looking at, but

perhaps for each individual case so as to give an overview. And it's also very valuable for the individual who's about to read a dose reconstruction report to get a glimpse as to where are we here, what are the contributions to the dose. When you see lots of NA's, that means you can focus on those issues where the dose reconstruction entered a significant dose that ultimately gave rise to a POC calculation. And so there were a lot of things that we tried to consider in our assessment, and it's really to be used in conjunction with the text of our dose reconstruction report.

DR. ZIEMER: Okay. Jim Melius, Wanda -- I didn't get the order on everyone -- Gen Roessler, Mark -- okay. Okay, Dr. Melius, proceed.

DR. MELIUS: Yeah, what I -- I guess one final comment at this point -- come back, but I just think we need to avoid a scoring system. It bothers me that we're starting, on a basis of 20 cases, to sort of keep score. And I think -- at least at this point in time I think what we want is some way of summarizing what's important in the dose reconstruction review and

that -- not trying to get something that's going to allow us to score what NIOSH has done. And I worry a little bit about us, with this case review checklist, getting into a scoring sort of system.

DR. ZIEMER: Thank you, so noted. Wanda Munn.

MS. MUNN: For anyone who's been very deeply involved in QA, this form of Hans's gladdens our heart. This is precisely the type of scoring system or, if you don't like the term "scoring", Jim, evaluation of -- of magnitude that I had in mind two years ago when we were talking about this in the Board, is there some roll-up that we can see at the end of each review.

It seems to me that we may not be able to meld what this is intended to do with what our -- our overview of specific cases is intended to do because this is something which would apply on a case-by-case basis. What we will be looking at in our cases is larger, overriding issues that may affect the entire process, not just the individual dose reconstruction. So it may be that we're trying to put too many things into one basket. We may have two baskets here,

no matter how we approach this.

DR. ZIEMER: Okay, thank you. Gen Roessler?

DR. ROESSLER: I think everybody's pointing to the same thing, and I'll just expand a little bit on it. What the case review checklist is a -- on individual cases, but the methodology that was put together by the group was -- pointed to not only the individual case evaluation, but this is really a step toward would it likely affect other claims that were done for that site, or would it potentially have program-wide impact, and I think that's what we're really looking for. So I think, too -- I agree with Jim that this detailed numerical checklist really could be very misleading. We're really looking to see, you know, how it impacts the whole program.

DR. ZIEMER: Okay. Thank you. Mark?

MR. GRIFFON: Yeah, I -- I think I -- I agree with Wanda's overview on that, that -- I think these two -- and I've talked with Hans and Kathy after our last meeting in Virginia about how to sort of come -- how these -- these things overlap. I think they have some commonality, which is good, but I think that --

you know, I think this -- this matrix or -- or a revised version thereof 'cause I think I'd have some comments to it, but anyway, this -- this matrix could be useful for tracking the individual findings for individual cases. I think this -- you know, this or a similar kind of roll-up report has a different function, the broader function that Gen was just referring to. I will point out that my intent was to summarize the entire -- all SCA's findings or observations within this matrix. I -- I worked mainly from the ones we discussed in Virginia because that's the document I had time enough to work with and I just received the other one on Friday, so I tried to capture in some others, but -- and that was difficult. But I think, you know, going forward the intent would be to -- to capture all findings or -- or if we want to categorize findings and observations and put them in a similar sort of matrix format as -- as -- you know, so mainly I brought this for the format and the discussion of do we agree with the format.

DR. ZIEMER: Thank you. Yeah, I think Hans has an additional comment. Please.

DR. BEHLING: Yeah, I just wanted to be certain we're all on -- looking at the same thing. I'm not sure what the Board currently has to review, but if you only have the checklist, that checklist -- in the actual report that we have forwarded to you and you'll be receiving by mail -- is used twice. It is used in behalf of each individual's -- the 15 DOE cases, and if you look at the report up front as part of the executive summary, the scores that involve each individual case is then summarized in the same checklist. Where you currently see, for instance, in the checklist a -- an area where for each individual case there's simply a check mark that says there was a deficiency for this one, we entered, in behalf of the 15 cases, a number. In other words, you will see in case number 6 where there was a deficiency involving the failure to include uncertainty, and it's strictly in that category a simple checklist. But when we took the whole 15 cases and collated them and introduced that same checklist as a summary table, you will see the number three in there, meaning that three out of the 15 cases all failed to use uncertainty.

So what you may be looking at right here is only an empty checklist. But that checklist is usable for not only single individual cases, but then it is able to -- to summarize the 15 cases by entering in each of those categories the number of times in which we failed to observe this -- this -- this issue or this non-compliance. And it can be used as a continuous means by which we not only collate the -- each set of cases, in which case -- this instance is 15 cases, but for the next 20 cases we'll just have a running total that says we are in the position now to track certain things, seeing -- saying that we may, for instance, see trends where we see a deficiency in a given area of internal exp-- dose assessment or external dose assessment or specifically with regard to neutron. And so when we collate all of the individual cases into a single table that is basically the one you're looking at, we can actually assess trends and say we are constantly seeing a repea-- a repetition of deficiency that suggests that there's a problem here and perhaps identifies root cause.

DR. ZIEMER: Okay. Thank you. Further

comments? Dr. Melius.

DR. MELIUS: And I guess my concern in response to that is I -- and I realize not everybody has this, but that I found that in the report to the Board that not all of us have seen, the collation into a summary audit findings, as Hans was just referring to, was not helpful at all. I thought it was -- did not provide an adequate summary. It may -- the checklist on individual cases was helpful, but overall as a summary of -- of that -- and I have real concerns about starting this scoring system, as was just alluded to, as an approach to -- I just don't think we're ready for this yet and -- some concerns.

I would also think that -- I would also like to see a separation. I think Mark did propose it in one of the documents that we -- we look at the impact of the error on an individual dose reconstruction, and then I think as a separate issue is would that impact -- may be important for -- not for this particular case, but could be important for other cases. And those two should be separated out 'cause I think they're two different types of information.

DR. ZIEMER: Thank you. And not -- not all the Board members have actually seen the checklist in use, and it may be that you'll need to take a look at that and look at those individual scoring sheets, as well as the -- the roll-up, and determine what you think is the utility of that approach.

It also appears from some of the comments that -- that perhaps we may not necessarily want to roll these into one document, but that in fact we may want to have a different assessment tool, even though there is a kind of quality control roll-up that the contractor may provide.

Another comment from the contractor, yes.

MS. BEHLING: Yes, this is Kathy Behling. One of the issues that you're probably not aware of since you haven't had the opportunity to read the report is that we're also suggesting -- and we've already laid the plans to do this; in fact, it's incorporated into our task two -- we have developed a database to summarize all of the reports, and in that database we intended to incorporate these checklist items. And that will give us the opportunity when we have --

when we've done the first 40 or 60 cases, to actually go in and sort that data by just about any means you'd like. We can look at just Hanford cases, we can look at just certain external dose issues, we can look at issues of data collection. We can separate out is the interview process consistent with what was used in the dose reconstruction process.

And if -- if I may just address the issue of scoring, based on our understanding at the closed session, we -- we really were under the impression that you wanted some means of determining the significance or the impact of each of these items that we put on the checklist. We didn't mean to score, we're just trying to give you a sense of the impact of this particular item. And as Hans indicated, there may be, in a certain case, issues where a lot of little things possibly could add up to something a little bit more significant, and that's all we were trying to do with this low, medium and high.

DR. WADE: Thank you. I think -- thank you for your comment.

DR. ZIEMER: All right. So the score that you

are talking about is simply an incidence of particular findings rather than a significance per se that was what Mark was trying to incorporate.

Other comments? Mark, did you have a comment you were --

MR. GRIFFON: (Off microphone) I was waffling (unintelligible).

DR. ZIEMER: -- waffling, okay.

MR. GRIFFON: Yeah, I -- I -- I actually -- I still think they can probably work together. I -- I think there is use -- usefulness in tracking -- in setting up this tracking system. I think it would be beneficial and this is probably more detailed than can be worked out on the full Board level. I mean it might be something we can work out at the subcommittee level or something like that. There may be benefit to -- for instance, when I tried to develop this matrix, one difficulty I had was that there was a different format in this new report, and that's -- that's only because they're -- they're working with their format in their report, but if the finding number was somehow tied to their checkmarks on their

matrix, that might be useful. I think, for a summary report to the public, I -- I personally think it's more useful to have a descriptive finding and a -- some sort of judgment on its impact, individual and -- and broader -- and program-wide or broader impact. I think that's more useful probably -- maybe -- I think this -- this -- as a tracking tool, this matrix could be very beneficial. We would have that data there to maybe call upon and look for trends as -- as they've stated. So I'd -- I -- I'm not proposing, at least right now, to scrap one for the other. I think they work separately.

DR. ZIEMER: Okay. I've just noticed an interesting thing in our agenda, that our break goes from 10:30 to 10:15, and the Chair's trying to figure out how to do that. I'm open to suggestions.

I wanted to remind the Board of the -- the six-step process that we put in motion last time for review of the dose reconstruction reports. This is what we asked be done after we received the report on the first 20.

One, that NIOSH complete its technical and

factual review of the SC&A report. Parentheses, NIOSH had made a partial review but had not completed the technical and factual review of the SC&A report.

Two, that SC&A and NIOSH resolve and clarify issues in the report where there appear to be factual disagreements on the facts of the cases or cases.

Three, that SC&A prepare a new report for the Board to address any issues raised by NIOSH, including corrections and changes that SC&A already may have made. Parentheses, SC&A already prepared a list of errata that they wanted to add to the report and we had not had a chance to review that.

Four, that SC&A prepare a better categorization of its findings.

Five, that NIOSH communicate to the Board unresolved issues that arise from their collaboration with SC&A on the items talked about in item two of this motion -- item two being the issue resolution part.

And then finally that SC&A provide the Board, at least one week before the next meeting, their revised report.

Now actually the -- the checklist that we're talking about, in part, meets or is the intent -- the intent by the contractor to meet part four, categorization of the findings, and that's what they have been responsive to. One thing that has not really been completed on this six-part thing is item five, that NIOSH communicate to the Board unresolved issues that arise from their collaboration with SCA on the items talked about. I think that's because NIOSH just received the report itself and I could ask for a comment from Jim. I don't believe your group has had a chance really to review that report yet, have you, so that we -- we don't yet have the information on these unresolved issues.

DR. NETON: That's correct. The report came in I think late Friday afternoon, and we have not had time to evaluate. All we have so far is just the verbal discussion that took place in McLean, Virginia.

DR. ZIEMER: Thank you. So there -- therefore it appears to me that there is a -- a part of this step that remains to be done yet, which is some information that this Board needs to try

to bring closure on those first 20 cases. Okay -- and so let me now stop and Mark comment.

MR. GRIFFON: I was just going to say, for the Board's information, I -- I did make an attempt to capture some of that in the NIOSH comment category of the matrix, so -- but there are several areas where you'll notice I had question marks or -- or --

DR. ZIEMER: Right, ba--

MR. GRIFFON: -- or underlined --

DR. ZIEMER: -- based on the discussion, you -- you had some idea of NIOSH's response, but we -- I don't think we officially have that response. And so it appears to the Chair that we need that additional piece of information to bring full closure to this process, and it may be that the Board will also wish to have the opportunity to look at the -- the checklist and give some more thought to that. And then -- and then finally to determine what to do with this -- the working group's methodology, and it cert-- I -- I believe that the subcommittee -- I may need some help in recollecting here, but I believe the subcommittee did take action to adopt this as a conceptual way to go forward

and I don't know if I have the exact wording on that. And maybe we can retrieve that during the break so that -- so that we have that to present to the Board because we need to -- we need to take formal action on that. Yes, Wanda.

MS. MUNN: I believe our wording was that we accepted it in principle and would move to try to -- to associate it with --

DR. ZIEMER: I believe you are probably correct, Wanda, and just to make sure that -- I think we will try to retrieve those words so that we have the correct recommendation from the subcommittee and we'll then have a chance after the break to actually take an action on that conceptually.

I'm going to then -- I figured out a way to take a break from 10:30 to 10:15, and that is we'll all leave the room backwards and -- anyway, we will take a break at this time and reconvene in -- about 10:30. Thank you.

(Whereupon, a recess was taken from 10:10 a.m. to 10:35 a.m.)

BOARD DISCUSSION/WORK SESSION

DR. ZIEMER: During the break we were able to

retrieve the wording of the subcommittee's action on the methodology for categorizing and ranking dose reconstruction case review findings. That was the one-pager that was presented to us. The action of the subcommittee was as follows: That -- that the document be accepted as a concept, with details to be worked out at a later date. That's very close to what you just stated earlier, Wanda. So that is actually the motion that comes from the subcommittee, referring to the one-page methodology that Mark presented to us, that that methodology be accepted as a concept, with details to be worked out at a later date, as it would be fleshed out and some additional refinements made, perhaps.

So that -- that becomes a motion for the full Board to act on. I'll open the floor for discussion on this. Yes, Leon.

MR. OWENS: Dr. Ziemer, after -- after reviewing the document last night, I would like to offer a motion that -- to the Board that the document in its entirety be accepted.

DR. ZIEMER: Say again --

MR. OWENS: Rather -- rather than the document

being conceptual, with details to be worked out later, I'd like to offer a motion that the document be accepted in its entirety as it has been written -- yes, sir, the methodology for categorizing and ranking dose reconstruction case review findings.

DR. ZIEMER: The Board is -- or the Chair is uncertain as to whether that is a friendly amendment or a different amendment -- or -- or a motion, or an amendment to the motion. I -- I think I would interpret it as basically an amendment to the motion, which is rather than -- it -- it still accepts the document, but it appears to me that it perhaps solidifies it as the methodology, as opposed to the idea that there are some refinements to take place. So I -- I'm going to ask -- the assembly always has the right to -- to instruct the Chair as to what it wishes to do.

Do you consider that to be a different motion or the same motion? It has a somewhat different -- I think it's a -- I think it's an amendment or you wouldn't have raised it -- characterized it as the document in a somewhat different way.

Mark, could -- could you in a sense respond to that? Do you believe that this is ready to be used as it is, or --

MR. GRIFFON: Well, I -- I -- I think it -- it probably is a different motion, that it's accepting it as a meth-- as the meth-- the Board's methodology, understanding that we always have the option to revise at later points, but it would be the methodology then. I mean I -- I -- I sort of understand what Leon's trying to get at -- I mean I, too, would like to maybe resolve this, and even if we had to edit this document here as our -- during our working session, rather than just say accept it in principle and at some future time work out the details, I think we've got to come to some point where let's work out the details, let's -- let's stop pushing it down the road. There is one thing that I -- I think -- that I've heard yesterday and again this morning that I would offer as a refinement to this, which would be to maybe split out the ranking that I proposed, to have a case-specific ranking and a broad ranking that -- that might refine this methodology a little bit. So

that's one point that was made yesterday and again -- I think Jim Melius brought it up this morning, so -- but otherwise I -- you know, I think that is a slightly different motion in that it would be the methodology that we'd be voting on.

DR. ZIEMER: Leon, let me ask you to -- if you'll state your motion again, which I'll interpret as an amendment to the main -- to the motion.

MR. OWENS: Okay, Dr. Ziemer, and I'll -- I'll note Mark's comments. I move that the Advisory Board accept the methodology for categorizing and ranking dose reconstruction case review findings in its entirety, the document that was discussed yesterday in subcommittee, and that in the second titled "Ranking the Findings" that there be an additional sentence possibly added that would incorporate case findings and overall ranking as two separate rankings.

DR. ZIEMER: Is there a second to the motion?

MR. GIBSON: I'll second that.

DR. ZIEMER: Seconded, okay. Now this motion to amend is on the floor. Wanda Munn.

MS. MUNN: Although Mark touched on this, I'm

not sure that it was clear. With respect to accepting the entire document as is, we have not discussed and I'm not convinced that the categorization of findings which we discussed but never really and truly came to any agreement on -- remain unsure as to whether this is comprehensive enough or is too detailed. We haven't had any discussion at all on that.

And in terms of relying on a specific document for guidance as to how we should proceed in -- in reviewing and reporting on each of these cases that comes before us, this may not be as polished as some of us would like it to be. Therefore, I -- I have some reservation -- not about accepting this; I agree that the intent here is precisely what we want to try to pursue. But I -- I would -- would caution that the understanding that it's going to be polished be inherent in the motion.

DR. ZIEMER: Okay. It appears that you are speaking against the amendment and for the original, which was more conceptual.

Jim Melius, and then Roy -- or -- I saw you -- yes.

DR. MELIUS: Okay. I missed the subcommittee meeting so I didn't hear the discussion today (sic) but would seem to me the way that we -- when we do need to go forward with this and that the way of evaluating this and for us to reach more certainty about it, more -- be comfortable, is actually applying it to a number of cases and then -- maybe the first 20 and then see what -- if we -- it needs to be adjusted or modified, you know, based on that. Does it capture what we wanted to -- intend it to. And so I'm not sure I see a great deal of difference between the -- the original motion and the amendment in the sense of we would -- we'll just go forward and then, after applying it, I think we'd have a much better sense of -- of -- be able to address any changes that may be needed.

DR. ZIEMER: Thank you. An excellent point that, in a sense, both motions have the same intent. I think the -- the one was perhaps recognizing that maybe there's a degree of incompleteness and some unease in blessing the document if it wasn't fully complete. But your point is that we can proceed forward in any

event and then modify. Roy DeHart.

DR. DEHART: In our discussions yesterday I -- what I was hearing was a very soft outline of what we were reviewing at that time, which we have in front of us. And I don't know of anything that has changed on that, so I'm speaking against the -- the amendment. I have a 260-page document at home that I want to review before I try to combine or consider these two documents. And I would encourage us to keep the -- our procedures flexible until that time that we've had an opportunity to review the documents that are available to us.

DR. ZIEMER: Okay. Thank you. Gen Roessler.

DR. ROESSLER: Although I support the concept of the amendment, I want to speak against it, also, because I think in the document we have the word "findings" is not yet clear to us, and it's mostly not clear to us because we don't have the document from SC&A. And once -- obviously this morning we had some misunderstanding as to what is in that document. Once we get it, then I think we can better define what we mean by findings and better put this together.

DR. ZIEMER: Okay. Other comments for or against the proposed amendment? We've had several I think speak against it. Let me ask for --

MR. GRIFFON: I'm -- I'm -- I'm generally -- I'm -- I'm generally still for the amendment, but you know, I -- I sort of see -- I mean Jim, I think, made the main point and you concurred, Paul, that --you know, we're going to get to the same place, I think. So if we apply this in concept first round and see how it works, then maybe we can finalize a methodology -- you know, after we've had more opportunity...

DR. ZIEMER: And actually -- again, I'll re-emphasize -- I believe the intent of both motions is the same, and ultimately we would proceed, either way, to use this as a starting point. Jim, another comment?

DR. MELIUS: And I'm just trying to understand procedurally what --

DR. ANDERSON: This is Andy, people have to speak up, you're kind of breaking up.

DR. ZIEMER: I don't know if that was somebody on the phone or --

DR. MELIUS: That's Henry.

DR. ZIEMER: Oh, that was -- okay. We're breaking up, okay.

DR. ANDERSON: Yeah, you're breaking up in more ways than one.

DR. ZIEMER: Okay. Thank you, Andrew -- Andy.

DR. MELIUS: The -- I'm trying to understand procedurally what would be the difference in the two approaches at this point in time. I would hate to have to wait to the next committee meeting before we can finalize this document and before we can start applying it and sort of getting some of this information categorized. We've got another 20 or so cases at least that'll be going through the individual dose construction (sic) review process and -- and so I guess I would like to see this applied as -- as part of this process, and then maybe then if we then want to, at the next meeting, you know, make some modifications to it, let's do it in the context of having it applied. Now whether that's covered by your original proposal or whether it's only covered by the amendment, I'd like clarification.

DR. ZIEMER: Yeah. The original proposal from the subcommittee actually didn't speak to that

directly. It -- it said let's adopt this as a concept, and I think in part wanted to bring this forward to the Board with the opportunity to put additional legs on it, if you wish, which might be in the form of saying let's not only adopt it, but let's use it. Which in a sense I believe is what Leon's amendment was -- I believe, if I understand, Leon, was to do just that. And it's my sense that the Board in fact wishes to do that. They may be uncomfortable with stating that this is sort of the final form. That may be the real problem that a few are having with this. But I think we'll reach the same endpoint, either way.

If the -- if the amended motion is defeated, you will need to turn around and make a motion, if we adopt the original, to then use it. So I think the final effect will be the same. We'll be quibbling here about Robert's rules, but we need -- we need to move forward, so let me ask for -- are you ready to vote on the amendment, which -- the Owens amendment, which was to basically adopt this as the document and to add some sentences to clarify that one part, without specifying what would be added at this

point, either. Right?
All who favor that, say aye.
(Affirmative responses)
Let me see the hands, ayes -- one, two, three, four, five, six.
And no's? And I think the ayes have it, so it's -- it's now adopted as -- that is the amended motion.
DR. ANDERSON: I'm an aye.
DR. ZIEMER: Okay. Now finally, we have -- we have amended the motion. We now are going to vote on the amended motion. You have to vote again.
All in favor of the motion, as amended, say aye.
(Affirmative responses)
Any opposed --
DR. ANDERSON: Aye.
DR. ZIEMER: Okay. Now the amended motion's been adopted and this now is our document. Does the Board wish to give any instructions on the added sentences that -- that Leon referred to -- Leon or Mark, yes.
MR. GRIFFON: I guess as a -- a -- what would this be, a friendly amendment to this, I --

DR. ZIEMER: No, we've adopt--
MR. GRIFFON: -- suppose, or just language?
DR. ZIEMER: -- we've adopted this. Now if you want to add to it --
MR. GRIFFON: Yeah, I -- I think we should add a sentence at the bottom of the ranking the findings, something to the effect that the approach will include a case-specific ranking, as well as an overall ranking. The approach will include a case-specific ranking as well as an overall ranking.
DR. ZIEMER: I think Leon's sentence actually said that, did it not, Leon, the sentence you added?
MR. OWENS: Correct.
DR. ZIEMER: In essence, that's already included.
MR. GRIFFON: Okay.
DR. ZIEMER: Yeah.
MR. GRIFFON: All right.
DR. ZIEMER: But make a note in your document in case you missed it. The approach will include a case-specific ranking, as well as a --
MR. GRIFFON: Overall --

DR. ZIEMER: -- overall --
MR. GRIFFON: -- broad ranking, I'm not sure what term we would use.
DR. ZIEMER: Overall ranking.
MR. GRIFFON: Yeah.
DR. ZIEMER: Now does the Board have any further instructions for -- for our contractor with respect -- we have the report. We'll have to read it. We'll -- we are -- we'll still be looking for responses from NIOSH on that, and then we'll have an opportunity next time then to come to full closure.
Let me ask if there's any more issues on that that need to be addressed this morning. This is on the first 20 cases. Mark.
MR. GRIFFON: I -- I guess -- again, just the -- the process question of when or where or how are we going to handle that. And -- and -- I mean I -- I think, you know, to apply this methodology to the entire report is a good idea 'cause as -- as Hans stated, I -- I probably captured mainly the ones that had issues that were discussed at the McLean, Virginia meeting. But I think -- to move this along, I think we have to determine when and -- and you know,

where we're going to -- where we're going to consider that. I don't think we want to wait two months for the next Board meeting to -- you know.

DR. ZIEMER: Right. And related to that will be whether or not this is handled, as it was before, as a working group or a subcommittee meeting. If it can be done as a subcommittee meeting, although there are some practical issues with respect to announcing in the *Federal Register* and so on, in one sense that is desirable in terms of the openness of the process, where the interaction -- once we get the comments from -- from NIOSH, if in fact there needs to be any meeting involving NIOSH, the contractor and the Board, that would need to be handled either as a working group or subcommittee. And if it's going to be a subcommittee, we need to identify when that would be, in terms of announcements in the *Federal Register*.

MR. GRIFFON: I don't know if -- if we have the answer to this, but did -- do we know the specifics of the timing, how long does it have to be posted ahead of time and...

DR. ZIEMER: Is Cori here or --
MS. MUNN: Thirty days.
DR. ZIEMER: -- can Liz -- any of the NIOSH staff --
MS. MUNN: It's the same as for --
DR. ZIEMER: -- remind us of those lead times for announcing in the *Federal Register*?
DR. WADE: He's going to get Cori.
DR. ZIEMER: Okay. Cori will remind us of that, or maybe Larry is able to.
MR. ELLIOTT: Generally, committee management office wants us to have a notice in the *Federal Register* 30 days before your meeting. We have deviated from that in the past, but with great duress.
DR. ZIEMER: Okay, thank you. That's an important piece of information. There is that -- what has to appear in the *Federal Register* is place and time and some agenda information, and then it would be an open meeting for anyone -- members of the public and so on.
MS. MUNN: For that reason alone, the flexibility of a working group, especially in a situation where no one can provide an absolute date that documentation is going to be

available, is much more flexible, easier to work with.

DR. ZIEMER: Yeah, it's -- it's true that the working group approach is more flexible. However, it does often raise questions on the openness of the process, and so we need to be -- have that in mind. We have started the practice of keeping minutes -- or a transcript of these meetings. But nonetheless, the openness issue -- maybe Dr. Wade would like to add to that.

DR. WADE: Well, I think -- I think the Chair raises the right considerations, but if we were to go with the working group we would again take minutes and a transcript of that meeting, so we do want to deal with the transparency issue. So I -- I think we can work through that and do a working group if that's the sense of the Board.

DR. ZIEMER: Yes. Jim Melius.

DR. MELIUS: Could we adopt something to the effect of, if feasible, a subcommittee meeting to discuss these issues should be held, but recognizing that it may not be feasible, in which case the working group approach would be

-- with a written record, would be the backup to that. And I think it's really going to be a question of timing and scheduling, and our first choice would be subcommittee. Our backup would be working group.

MR. GRIFFON: I had a -- a similar comment or idea, just to -- you know, it strikes me that every time we come to these meetings we get documents on the Friday before, so if we set a subcommittee meeting, or a couple of them, up in advance, I -- it -- I think that all of us work under deadlines, and will probably have products available for those meetings. We will work I think with our contractor just to make sure are these doable dates, you know. But then if in fact we had one of those subcommittee meetings, I -- I would argue that the subcommittee meetings can be set up not just to address one item, but we've got several things on the plate. Let's lay them out, designate a subcommittee meeting, then if they -- for whatever reason, certain products aren't ready at that subcommittee, then we would have sort of an emergency workgroup session in between or whatever and that would be the

backup option, as Jim said. I think that works.

DR. ZIEMER: Other comments, or does someone wish to make a motion for a specific action? What --I'm sorry --

DR. MELIUS: Do we need --

DR. ZIEMER: -- am I looking for a flag?

DR. MELIUS: No, I don't --

DR. ZIEMER: No.

DR. MELIUS: Do we -- do we need a motion on this? I mean I'll make the motion if --

DR. ZIEMER: Well, I -- I think we need to get the sense of the Board and that's most easily done by having a formal action. Before we do that, let me inquire of maybe Jim Neton or Larry. In terms of NIOSH's response to the revision of -- of the first 20 cases, what -- what would we be looking at there in terms of turnaround time? Is that -- is that premature, since you haven't seen the document yet?

DR. NETON: Yeah, I think that's premature for us to comment because we really haven't had a chance to look at it and, you know, the magnitude of the issues that we might have to deal with. My sense is they're not going to be

great, but I -- we really haven't looked at it yet.

DR. ZIEMER: Yeah. And it may -- thank you. It may be that a motion such as was suggested by Dr. Melius, which is somewhat general and indicates the intent to try to have it as an open subcommittee meeting, and we may be dependent on -- at some point in learning when that review would be done so that we could schedule this interaction. But the Chair would certainly entertain a motion to that effect. And while we're thinking about the motion, let me ask this question. Suppose we had a working group meeting. Is there any reason why it couldn't be publicly announced anyway and invite members of the public to attend?

DR. WADE: No, there's no --

DR. ZIEMER: Now let me -- is that something that -- as long -- if we -- even if we end up with a working group, if we make known to those interested parties that might wish to be present?

MS. HOMER: I'm not entirely certain that it -- and I'd have to check with committee management about this. I don't see a reason why not, but

it is separate from the FACA process because it is a workgroup.

DR. ZIEMER: Yes, understood. But in essence -- and we're not talking here about the reviews of individual dose reconstructions. We're talking about the -- the step where we have, in essence, the redacted information and we're dealing with this other process, so -- the extent to which we can be open on this, in any event, will be I think important.

Dr. Melius, did you start to make a motion or am I prodding you too much?

DR. MELIUS: No. No, I'm ready, I think. I -- I move that the committee -- that the Board, if feasible, hold a subcommittee meeting to discuss and resolve issues related to the first 20 dose reconstruction reviews and other matters related to the site profile reviews. If it is not feasible to hold such a committee meeting due to timing or availability of adequate documents from either our subcontractor or from NIOSH, then we should use -- hold a working group meeting that -- that working group meeting should be transcribed -- recorded and transcribed and, if possible,

announced to the public.

DR. ZIEMER: Thank you. You've heard the motion. Is there a second?

MR. OWENS: Second.

DR. ZIEMER: Is there any discussion on this motion? No.

Okay, all in favor, say aye?

(Affirmative responses)

Any opposed -- did I -- Henry, are you still on the line?

DR. ANDERSON: I'm aye -- I'm ayeing.

DR. ZIEMER: Okay, just want to make sure you're awake.

Any opposed?

(No responses)

And any abstentions? Then the motion carries. Thank you very much.

If there's anyone in the assembly today that's having a difficult time seeing the Board, I have your glasses. Somebody has turned in a set of glasses. Let me pass them on down to Cori, but you -- you may claim these -- or if they fit pretty well and you need an extra pair, whatever.

Leon has kindly reminded me that when we

selected our 22 cases earlier today the Chair failed to assign review teams. And so I now ask that we return to our set of cases --

MR. PRESLEY: Paul --

DR. ZIEMER: Yes?

MR. PRESLEY: -- excuse me. Could we go ahead and say that we -- that meeting that we just set up, that we will have that in Cincinnati? I think it'll be easier on the staff if we say that we're going to have that meeting there --

DR. ZIEMER: Oh, I'm sorry, the --

MR. PRESLEY: -- in Cincinnati.

DR. ZIEMER: -- the subcommittee meeting?

MR. PRESLEY: Right. Go ahead and set a place for that so that it'll -- it would be a whole lot easier on them.

DR. ZIEMER: Yeah. Well, I suspect either Cincinnati or McLean, but let -- let's -- we'll ask Lew to work with those folks and find a suitable location. I don't know that we need a specific action, but that certainly would be the intent -- convenient location for -- for staff and -- and -- if that's agreeable, we'll let them work that out. Thank you for that reminder, though.

Now let's return to the list of cases, and last time we found that a simple way to do this was to go down the list and go in the order of -- of our teams. Also you may have particular sites that you need to recluse (sic) yourself from and that will affect the teams involved.

DR. DEHART: Paul, are we maintaining the same teams?

DR. ZIEMER: We don't need to, but it's easiest to do that, if it works out. Now I -- I need to have a reminder, though, if you remember whose team you're on.

MR. PRESLEY: Henry and I are on --

DR. ZIEMER: Okay, let -- let's start out --

MR. PRESLEY: Henry and Robert Presley are on one team.

DR. ZIEMER: Anderson --

DR. ANDERSON: Yeah, we have --

DR. ZIEMER: -- and Presley.

DR. ANDERSON: Yeah, that's good for me.

DR. ZIEMER: Is that one team?

MR. PRESLEY: Yes, sir.

DR. ZIEMER: And Gen Roessler, who were you with?

DR. ROESSLER: Roy DeHart.

DR. ZIEMER: Okay, DeHart and Roessler. And Melius --
DR. MELIUS: And Richard Espinosa.
DR. ZIEMER: Espinosa.
DR. MELIUS: The A team.
DR. ZIEMER: Griffon --
MR. GRIFFON: And Tony.
DR. ZIEMER: Andrade. Let's see, Gibson and Ziemer. And Munn and Owens. I think that's it, six teams, right? Okay.
Let's start down through the list now. Leon, you have to keep me on track here.
Now we have 22 cases, so we need four -- four cases per team, in most -- most of the way.
And Anderson and Presley, let's see how we do with the first few cases here. We've got 008, which is Paducah, we're okay on that I believe. Right?
MR. GRIFFON: What about 005?
MR. PRESLEY: 005 we added.
MR. GRIFFON: We just added that this morning.
DR. WADE: 005 was added.
DR. ZIEMER: I hadn't marked my copy here.
That -- 005 is the one we added -- yes.
Savannah River, 005, would be that team; 008,

11 and 15, and --

MR. PRESLEY: Henry, have you got a problem --

DR. ANDERSON: No.

DR. ZIEMER: Henry, did you get those, 5, 8, 11 and 15?

MR. PRESLEY: Henry?

DR. ANDERSON: Yeah, what?

DR. ZIEMER: You -- he's okay.

DR. ANDERSON: I'm okay.

DR. ZIEMER: Yeah.

MR. PRESLEY: You know where those are from?

DR. ZIEMER: Now --

DR. ANDERSON: I thought I heard it, yeah.

DR. ZIEMER: Yeah, 5 is Savannah River, 8 is Paducah, 11 is Idaho and 15 is Los Alamos.

DR. ANDERSON: Yeah.

DR. ZIEMER: Okay. Next for DeHart and Roessler, we have --

MR. GIBSON: Excuse me, Paul --

DR. ZIEMER: I'm sorry?

MR. GRIFFON: -- isn't Andrade on the first four?

DR. ZIEMER: No, I have Andrade with Griffon.

MR. GIBSON: Oh, I'm sorry. I'm sorry.

DR. ZIEMER: No, right. These may not be the

same order the teams were before. I'm just taking them as -- DeHart and Roessler, let's see where we left off here.

MR. PRESLEY: 18.

DR. ZIEMER: Number 18, Feed Materials; number 25 is Hanford --

DR. DEHART: Skip 27.

DR. ZIEMER: -- 27 is Oak Ridge, so we have to omit that one, conflict of interest on Oak Ridge, so we would skip down to 36, which is Nevada, and 39, which is Idaho. Okay? Then Espinosa/Melius, go back and pick up 27, which is Oak Ridge; 41, which is Feed Materials, Paducah -- or no, Feed Materials Production Center; number 43, which is Y-12; and number 52, which is Idaho. Okay on that? Then the Griffon/Andrade team --

MR. GRIFFON: I don't know Tony's conflicts, so -- might need some help here.

DR. ZIEMER: We have his list here, it's -- Los Alamos and Nevada are his main two.

MR. GRIFFON: Okay. Next four are fine.

DR. ZIEMER: 53 is Hanford, 57 is Y-12 --

MR. GRIFFON: 57?

DR. ZIEMER: I'm sorry, 58, I read the wrong

line. I need those glasses, where are they? 62 is Pacific Northwest and 63 is Rocky Flats. We're okay on that, Mark?

MR. GRIFFON: Yes.

DR. ZIEMER: Gibson/Ziemer, we have 65 is Hanford, 69 is Paducah --

DR. WADE: 69 was dropped.

DR. ZIEMER: That's the one that was dropped, sorry. We have 67, Savannah River then that was added. We have 70, Pantex -- actually, Mike, I'm thinking that we should only take three in order that Wanda and Leon both have three. Right? We don't want to short-change them. Right? Right. Is that agreeable? Let's see what we have -- final three here. We have -- no, we're going to have to do a switch because 74 is Hanford. Wanda, that's -- let's do a trade then. Let's put 74 back with Gibson/Ziemer. We would put 70 with Munn/Owens, that's Pantex. We'd put 89, which is Rocky Flats, and 99, Argonne East. Okay? Everybody okay on those? Any questions? So the 22 cases are assigned as just indicated. Thank you.

(Pause)

I'm looking to make sure that there aren't any loose ends on the -- the dose reconstruction roll-up process now. We've taken care of attempting to schedule that next step. Is -- do any of the Board members have any issues relating to the first 20 cases that we need to address yet today? Thank you.

We have a few minutes left -- let me just consult the agenda here. We have some time left yet this morning in the work session. We can -- we can begin, if the Board pleases, to address issues related to the report on the site profile that we heard this morning. We still have Bethlehem Steel issues to deal with. I believe that Dr. Melius was prepared to perhaps make a motion relating to next steps on the Bethlehem Steel, and that would be the logical one to address next. Jim, are you waving a flag there or prepared to --

DR. MELIUS: Yeah, I have actually five motions, just for purposes of discussion. They aren't (unintelligible).

DR. ZIEMER: Are these motions that we should deal with one at a time, or do you want to spring them all on us and --

DR. MELIUS: I think it would be easier just to do them one at a time. I don't -- some of them are pretty straightforward, but -- and they address the overall issue of the NIOSH report, as well as the four specific questions that NIOSH asked the Board, so that's where the five --

DR. ZIEMER: You're talking specifically about Bethlehem Steel now.

DR. MELIUS: Bethlehem Steel, yeah.

DR. ZIEMER: Yes.

DR. MELIUS: And the first motion is that the Board accepts the NIOSH response to the SCA report on the Bethlehem site profile, including NIOSH's plans to address several of SCA's comments and to produce a revised site profile or Technical Basis Document. The Board also requests that NIOSH and SC&A meet to discuss and resolve any remaining technical issues related to SCA's comments and NIOSH's response. Members of the Board should be present at that meeting.

MR. ESPINOSA: So moved.

DR. ZIEMER: That's the motion --

DR. MELIUS: The motion.

DR. ZIEMER: -- and I believe Richard has seconded the motion. It's now on the floor for discussion.

Wanda Munn.

MS. MUNN: Are we going to leave that outstanding issues sort of hanging in the air without defining what they are?

DR. MELIUS: No, I have four motions.

MS. MUNN: That's the next motion.

DR. ZIEMER: And there are some -- hopefully some follow-ups. Maybe you should characterize, if it will help the Board vote on this motion, to have some idea of what you're going to propose as follow-up.

DR. MELIUS: That's fair. The -- the four questions that NIOSH asked us for specific comments on, one is on page 6 and has to do with the use of the 95th percentile distribution to -- et cetera. The other one relates to the issue of -- of respiratory rate in heavy work. The next one concerns the aerosol size issue. And the last one concerns how NIOSH characterized external exposures, and those are the four specific questions that NIOSH asked the Board to address, and I've

prepared motions for all of those.

DR. ZIEMER: Does that answer the question you -- yes. Other questions or comments on this initial motion? Are you ready to vote then? All in favor of the motion, say aye?

(Affirmative responses)

And those --

DR. ANDERSON: Aye.

DR. ZIEMER: Thank you, Henry. Those opposed?

(No responses)

And abstentions? Thank you, motion carries. Proceed.

DR. MELIUS: Okay. I also move that the Board adopt this resolution. The Board concurs with the use of the 95th percentile of the distribution of air samples at Bethlehem Steel to characterize the upper limits of exposures at that facility. However, NI-- however, NIOSH should continue to evaluate other approaches to characterize exposures and work environments similar to Bethlehem Steel, including better ways to characterize exposures of workers in higher risk job categories and better methods to identify such workers.

And if I can explain, I think --

DR. ZIEMER: Let me have a second to the motion. That'll get it on the floor and then --

DR. DEHART: Second.

DR. ZIEMER: -- you can elaborate. It's been seconded. Now, proceed.

DR. MELIUS: Yeah. I think that -- I think they've made a convincing case for this particular site. However, I don't think we're ready to say that's something that should be generalized as an approach to all sites. It may be, may not be; that they should continue to evaluate that and I personally get concerned that, in essence, what we've done is sort of a mini SEC at Bethlehem Steel. We're really beyond the point of -- we don't -- not taking into account anything about a person's individual history, work history. We've done sort of a blanket approach that's applied to someone, whether they worked in the rolling mill area or whether they were a security guard or some other person at that facility. So I think that that may be appropriate for that facility. However, I think we need to look at other ways of -- of -- other approaches that

might be used in other facilities -- that. So that intent is to yes, we concur with the approach for Bethlehem; however, there till needs to be some work as to what would be the best way for other facilities.

DR. ZIEMER: Mark Griffon.

MR. GRIFFON: I guess the on-- the only concern I have here is -- is that you -- you know, I guess I agree with the NIOSH proposed method in concept. I'll use Wanda's way to -- to look at this. I -- I -- I'm a little hesitant to be definitive about it until I hear more back from SCA that -- that it in fact addressed all the concerns of the original finding, so -- but -- but I do agree with the approach in -- in -- conceptually, so I don't -- I don't know if that's against the motion or just -- I just wanted to throw that out there, that I -- I don't know that we have all the facts back. And we had the discussion yesterday with -- with our contractor, could we get a timely response, you know, and I think we're -- we're closing in on this thing. I think we have to come to closure on it, I agree. But I just want to make sure that we understand fully what

we're voting on with that, that this upper 95th percentile of what, of what dataset was it representative? You know, there's some what-ifs in that power point presentation that are a little -- get a little more involved, I think. So...

DR. ZIEMER: Thank you. Other comments? Jim, would you read the motion again?

DR. MELIUS: Yeah. The --

DR. ZIEMER: Not too fast. I'm trying to absorb it.

DR. MELIUS: Oh, okay. The Board concurs with the use of the 95th percentile of the distribution of air samples at Bethlehem Steel to characterize the upper limits of exposure at that facility. However, NIOSH should continue to evaluate other approaches to characterize exposures in work environments similar to Bethlehem, including better ways to characterize exposures of workers in higher risk job categories and better methods to identify such workers.

If I can explain --

DR. ZIEMER: Yeah, your first sentence, you're referring to NIOSH's use of -- or -- use of the

95th percentile --
MR. GRIFFON: Of the Bethlehem Steel air samples, yeah.
DR. ZIEMER: -- of the Bethlehem Steel air sample.
DR. MELIUS: Well, what they specifically proposed in --
DR. ZIEMER: Are proposed --
DR. MELIUS: -- in their comments. That's --
DR. ZIEMER: -- in their response.
DR. MELIUS: -- directly from their...
DR. ZIEMER: Okay. Yes, Jim?
DR. NETON: Just a point of clarification. What we proposed was to use the Simonds Saw and Steel data for 1949 and '50 --
DR. ZIEMER: Yes, under -- yes.
DR. NETON: -- and Bethlehem Steel for '51 and '52 --
DR. ZIEMER: Yes.
DR. NETON: -- just so we're clear on that.
DR. ZIEMER: Yeah, I believe, Jim, you understood that, right, and --
DR. MELIUS: Yeah.
DR. ZIEMER: Yes, that was --
DR. MELIUS: Even though that's not what's

stated there, but that's...

DR. ZIEMER: It's the 95th percentile on that Simonds Saw's data.

MR. GRIFFON: For one time period and Bethlehem Steel for the other time period.

DR. ZIEMER: I believe that's correct. Other comments? And are you ready to vote on this motion? Ready to vote.

All in favor of this motion, say aye?

(Affirmative responses)

DR. ANDERSON: Aye.

DR. ZIEMER: Thank you, Henry.

All opposed, no? One opposed.

MR. GRIFFON: No, I'll -- I'll abstain.

DR. ZIEMER: Abstaining? Mark is abstaining.

DR. ROESSLER: Well, I'll abstain then, too.

DR. ZIEMER: You're abstaining, two abstentions, okay.

That's fine, you're welcome to abstain. I think it -- for clarity, I don't believe these abstentions have to do with the facility. They may have to do more with the voters having some uncertainty about exactly what this motion is doing.

Well, I -- I don't want to interpret what the

abstentions mean. I'm sorry, I don't want to characterize -- okay, thank you. Or do you wish to characterize?

DR. ROESSLER: I can comment on what mine means. I'm not clear that our subcontractor agrees with this and I really haven't had enough of an explanation as to what this 95th percentile means. I can't picture in my mind what impact this has on the actual claimants. NIOSH said it would be more claimant friendly, but I haven't quantitized (sic) it yet to come to that conclusion.

MR. GRIFFON: I know -- yeah, mine's similar. Maybe it should have just been a no vote, but I -- I -- you know, I think Jim's trying to get to the same position. In his first motion anyway the idea was that where there's still differences, we would go ba-- I think NIOSH and SCA would work out -- you know, I think it was in your proposal there was some follow-up on these -- on -- on the comment resolution process. You know, my -- I guess my notion when we first discussed this second motion of Jim's was that maybe we should just phrase it to say that we agree in principle with the

approach taken, but -- and -- and -- and that's simply -- I -- it's the same concern that Wanda had of the earlier -- you know, I -- I don't know if I concur with this until I -- I understand it a little more deeply and hear SCA's response. Quite frankly, they put a lot of effort into researching this finding. I don't know how much data was in the Simonds Saw. I don't know how much data they're relying on for distribution. You know, I don't know how well they can -- you know, there's -- there's a lot of ifs in this, so I think -- that was my only reservation, so I -- I'd like --

DR. ZIEMER: Okay. And that's helpful to have on the record. You recognize there's some reservations then that exist amongst the Board members on -- on that particular motion.

DR. MELIUS: And I would just add that there also will be a revised site profile or Technical Basis Document, and if we so choose to review that and can do so and look at the level of details --

DR. ZIEMER: Right.

DR. MELIUS: -- I think it's just hard to find,

you know, where -- how far to go and I think we do need to resolve some of these issues rather than just sort of continually leaving them out there.

DR. ZIEMER: And in fact at some later point if additional information comes to light, the Board could in fact say well, actually we have a different view now. So that -- that's always a possibility.

Please proceed.

DR. MELIUS: Okay. I'm trying to get to the right page here.

Yeah, top of page 7. Okay and -- move that the Board request that NIOSH review the use of the ICRP default value for heavy work to determine if it's appropriate for heavy industrial work in hot environments.

It seems to me this is just a -- a simple sort of factual issue, that there's a lot of studies -- I know there've been studies done of heat stress in steel mills, and I'm sure there's others in uranium mines and -- and so forth. And it seems to me that they could sort of resolve and -- you know, based on those studies and other information, what is the appropriate

way of characterizing the breathing rate for people in such environments and -- do that and it may very well be that the default value used in ICRP is fine, but we'll just evaluate that and move on from there.

DR. ZIEMER: Okay. You've heard the motion. Second?

DR. DEHART: Second.

DR. ZIEMER: Discussion? Wanda Munn.

MS. MUNN: May I hear that motion again, please? I --

DR. ZIEMER: Yes.

DR. MELIUS: I'll -- say it slow -- more slowly?

MS. MUNN: Yes.

DR. MELIUS: Okay.

MS. MUNN: Words of one syllable.

DR. MELIUS: The Board requests that NIOSH review the use of ICRP default value for heavy work to determine if it is appropriate for heavy industrial work in hot environments.

MS. MUNN: It was my understanding that NIOSH had done that, and that they were recommending the use of the ICRP default value. Is that correct or not, Jim?

DR. NETON: That's correct, we were recommending the use of heavy work breathing rate, which is 1.7 cubic meters per hour. I think the central issue was the use of mouth breathing as opposed to nasal breathing.

MS. MUNN: Yes.

DR. NETON: That's an issue that's unresolved at this time.

MS. MUNN: And it is unlikely that any of us who have never been in that environment or doing that kind of work would be expert at making that decision. I suspect that most of the reviewers are in the same position. It seems unreasonable to me to always assume that every person in that environment would be breathing through their mouth rather than breathing through their nose, even under fairly heavy work conditions. To make that assumption on a -- on a broad scale seems unreasonable.

DR. ZIEMER: Of course NIOSH is I believe attempting to find default parameters that are both claimant favorable and -- and reasonable. And Jim, could you clarify in your -- your motion -- it's -- is it specifically to address this issue of the mouth?

DR. MELIUS: It's both mouth breathing and -- and breathing rate that came up, and my recollection is when Jim Neton was presenting this this morning, I think he referred to uranium miners in some way, but it's just not clear to me that -- that we've actually looked into the derivation of that default value, and therefore it seems to me that with some other research you ought to be able to do it and determine what's appropriate for different kinds of work environments. And seems to me that would be -- I won't say easy to do, but it should be straightforward do to based on whether their information's available, what went into the derivation of the ICRP default value for heavy work.

I have done some studies in steel mills and it at least would appear to me that steel worker -- many of those people do more than an hour of heavy exercise -- equivalent of heavy exercise during -- during a day, so at least on the fact of it, the use of one and seven does not seem to be right, but I may not completely understand how they derived that and -- and what's appropriate. It may be that different

things are appropriate for different types of -- of work environment and I think that's, you know, worthy of some further evaluation.

DR. ZIEMER: Where are we between NIOSH and SC&A on those values? Remind me of -- what did SC&A recommend be used, or were you simply questioning the -- the basis for NIOSH's selection? I don't recall the --

DR. MAURO: Yes, there are really two separate issues, and it's important to keep them separate. One is, as Dr. Melius pointed out, the breathing rate inherent -- the -- the 1.7 cubic meters per hour breathing rate and the assumptions imbedded in that as applied to the work environment was one question, whereby exploring that a little further in terms of is -- in terms of the -- that work -- in that working environment is that a claimant favorable assumption.

Completely separate, and I -- quite frankly, a much more difficult issue, has to do with something that ICRP I don't believe addresses, namely -- there is a fraction of the population of the United States that are mouth breathers. That is when they're sitting still they are

breathing through their mouth. And certainly when they're moving into a more aggressive -- they are breathing through their mouth.

That changes some -- we in fact did some analysis to see the type of effect that might have on the dose calculation. If all of a sudden we were to say wait a minute, there is some -- some subdivision of the American public, of the American workers who are mouth breathers. Will that have an effect on the dose to the lungs. We did some calculations. They are contained, as it turns out, in our most recent report on Mallinckrodt where we found that it has about a factor of two effect on the lung dose.

So -- but this is a different question. It's almost a -- a -- what I call a policy question. That is, do you -- how -- to what degree do you take into consideration a sub-population of -- that has certain behavioral patterns that may differ from reference man as adopted in ICRP. I would -- I -- I -- I could -- I could see arguing both sides, because 42 CFR 82 does adopt ICRP methodologies. And so on that respect you could say well, we're following

ICRP methodologies, which does not take into consideration that particular issue. Or -- I believe.

Or alternatively, and I guess this may -- this is why I would say perhaps it is a Board issue in terms of -- however, if it turns out there is a substantial portion of the American population that are mouth breathers, is it appropriate to take that into consideration, which -- which would deviate somewhat I guess from the explicit guidance. I don't think ICRP rules out your deviating --

DR. ZIEMER: Right.

DR. MAURO: -- but it's -- it's just there to be helpful. I hope that helps.

DR. ZIEMER: Thank you. That's helpful, John. And in essence SC&A has raised the issue and says it ought to be considered. And I believe your motion to the effect is to do just that. Is that not correct?

DR. MELIUS: Yes.

DR. ZIEMER: Wanda.

MS. MUNN: In our report NIOSH says they will revise the site profile to assume that all workers were engaged in heavy work at all times

during the shift. So we're not talking about the default rate of one hour per shift. We're talking about -- NIOSH has said we'll go under the assumption that we are going to be using heavy work inhalation rates all eight-hour shifts. I don't see that we can ask more than that. If we begin to factor in how many people are mouth breathers and how many people are not, then we are getting into a realm I don't believe there's any reasonable way to reach a conclusion about.

If the motion that's being made is to accept that NIOSH will use heavy breathing data for eight hours, then I can support it. If it does not, then I don't think we're helping NIOSH any by just saying go back -- I don't think we're helping either NIOSH or the other contractor by saying go back and look at it more.

DR. ZIEMER: Did you want to respond, Jim, on that?

DR. MELIUS: Yeah --

MR. GRIFFON: Just -- just a point of clarification. I thought Jim was -- Jim Neton was going to make it, but heavy work is different than heavy exercise, so the one hour

and seven hour ratio is -- in ICRP-66 one hour is -- referred to heavy exercise and the other seven hours are -- are -- I forget, light?

DR. NETON: Yeah, seven hours would be light exercise, of which the ICRP model assumes a normal person would breathe through their nose 100 percent, where under -- under habitual mouth breathing, I think it's something like 50 percent mouth breathing under light exercise conditions. All humans -- most humans breathe through their mouth 50 percent of the time under heavy exercise, so there's some subtle distinctions there. But it really does boil down, as John Mauro characterized, to do we address habitual mouth breathing as a default value in this program.

DR. ZIEMER: Okay. Thank you. Jim?

DR. MELIUS: And what I think the intent of my motion was saying that I think you need to do further review and get further information on this overall issue, both breathing rate and the issue of mouth breathing, and present it back to the Board or however you want to, you know, follow up on it. We're not going to be able to completely resolve it, but we're saying let's

look -- there's other information available liter-- in the literature and so forth and let's look at it in more detail.

DR. ZIEMER: So it would be more along the lines of whatever final selection is made that there's a clear justification or basis --

DR. MELIUS: Yeah.

DR. ZIEMER: -- for that. Further discussion? Are you ready to vote on this motion? All in favor, aye?

(Affirmative responses)

Opposed?

DR. ANDERSON: Aye.

DR. ZIEMER: Thank you. Opposed?

(Negative responses)

Let me see the hands opposed.

(Negative responses)

And abstentions? Okay, then the motion does carry. Thank you. Proceed -- you have an additional motion?

DR. MELIUS: Yeah, this one I -- short motion, but -- be Board discussion.

The -- move that the Board concurs with NIOSH's characterization of aerosol size and density used in the Bethlehem site profile.

DR. ZIEMER: Okay. We've heard the --
DR. MELIUS: Which is found on page 8.
DR. ZIEMER: We've heard the motion and --
MR. GRIFFON: Second.
DR. ZIEMER: -- seconded. This had to do with the selection of the mass -- aerodynamic mass medium diameter, as characterized in the -- and I -- I believe we also heard that our contractor also concurred with that. Is there discussion?
All in favor, say aye?
(Affirmative responses)
DR. ANDERSON: Aye.
DR. ZIEMER: Thank you. Opposed, no?
(No responses)
Abstentions? That motion carries. Thank you.
DR. MELIUS: And --
DR. ZIEMER: Next one?
DR. MELIUS: -- next and final motion, move that the Board concurs with NIOSH's approach to characterizing external exposures.
MR. ESPINOSA: So moved.
DR. ZIEMER: Seconded. The Board concurs with NIOSH's --
DR. MELIUS: Approach to characterizing

external exposures.

DR. ZIEMER: Okay. Discussion?

DR. MELIUS: Page 10. And I believe in SC&A's comments on this was that issue of clarifying the basis for this. Again, my understanding was that that had been -- additional information had been provided and -- and I thought the justification that NIOSH made in their -- you know, it did provide an adequate justification.

DR. ZIEMER: For their -- for their --

DR. MELIUS: Approach.

DR. ZIEMER: -- decision -- or approach. Discussion on this item? Then are you ready to vote?

Okay. All in favor, aye?

(Affirmative responses)

DR. ZIEMER: Any opposed? Henry, yes?

MR. GRIFFON: Henry's gone.

MR. PRESLEY: Henry?

DR. MELIUS: Henry's gone fishing.

DR. ANDERSON: Aye.

DR. ZIEMER: Yeah, thank you. Opposed?

MR. GRIFFON: I'm opposed.

DR. ZIEMER: One opposed.

MR. GRIFFON: Same reason as before.

DR. ZIEMER: Same reason as before, thank you. And abstentions?

Okay, the motion carries. Let's see, does that cover them?

DR. MELIUS: That's it.

DR. ZIEMER: Thank you very much. Now we're approaching the lunch hour. We're going to recess till 1:00 o'clock, and at that time we'll have a presentation of the SEC petition for Mallinckrodt and some opportunities for public comment.

Thank you, we're recessed till 1:00 o'clock.

(Whereupon, a recess was taken from 11:45 a.m. to 1:05 p.m.)

DR. ZIEMER: Good afternoon.

(Whereupon, discussion of the Mallinckrodt SEC Petition ensued until the dinner break. This is contained in a separate volume.**)**

7:00 p.m.

INTRODUCTION

DR. ZIEMER: This is the -- the evening public session of the Advisory Board on Radiation and Worker Health. My name is Paul Ziemer and I'm serving as Chairman of this Board. I'd like to

take a few minutes here at the beginning to say a little bit more about this Board and its role. We've already had a couple of extensive public comment sessions, but usually -- in our evening sessions, particularly -- we do take the time to talk just briefly about what the role of the Board is, partially because there's often confusion about what it is that this Board actually does.

And contrary to what the local newspapers or news media have indicated, this is not a hearing that we have here. This is one of our regular meetings, and at all of our meetings we have public input through the public comment session. This happens to be a kind of special meeting because it's the first of our meetings where we have had before this Board a petition dealing with Special Exposure Cohort, so in that sense this has been a special meeting for this Board.

Let me tell you very briefly a little more about the Board. First of all is you're probably aware that the program that we're dealing with is a program that has been split up by Congress into sort of pieces. That is,

the responsibilities are shared by a number of agencies -- Department of Labor, Health and Human Services, Secretary of Energy and the Attorney General -- so you have different Federal agencies that, in a sense, are administering this program. That may be good news and it may be bad news. I'm never quite sure when you get a lot of Federal agencies in the pot, but in any event, that's the way Congress set the program up.

In addition to these Federal agencies, the legislation called for the appointment of an Advisory Board, and that's what this group is. These are individuals who are not feds, but are serving, in a sense, independently. The legislation says that the Advisory Board on Radiation and Worker Health will consist of no more than 20 members appointed by the President, who also appoints the Chair, and also that the members shall represent the workers, the scientific community and the medical communities.

And so that's what this group is here, that is the -- and -- and you probably notice right away that you don't see 20 people. And the

reason for that is that the President actually has only appointed 12 individuals to this Board thus far, and of those 12, ten are here. Dr. Andrade unfortunately is ill with the flu, and Dr. Anderson is in Alaska tonight, but the rest of the Board members are here.

I have listed their names here and there are placards. I'm not going to introduce each one individually tonight, but I do want you to notice, if you look at the names and a little bit about their titles, you will see that they represent a kind of spectrum of technical, medical and worker groups or agencies or entities. So here's about half the Board on this slide and I'll list the rest of them here momentarily -- and the rest are listed here. So you see we have a mix of individuals, come from various parts of the country. We are -- this is not a full-time job for us and we do not work for NIOSH or these other agencies. We come from various walks of life and meet together regularly for the purpose of this legislation and to deal with this particular issue, the compensation program that you're all interested in.

This Board has been charged with some very specific duties. There are very specific things that we, under the law, are required to do, and there are other things that we simply are unable to do, much as we may like to do them. There are a lot of things that we wish we were able to do, particularly after we hear many of your stories. But to some extent we ourselves are limited by the law as to what we are able to do.

I've listed here precisely what the responsibilities of this Board are. Some of these responsibilities have been largely completed. We are responsible to work with NIOSH in a sense to help develop the guidelines for the dose reconstruction program and for the probability of causation rule that is used. And we have been in the past directly involved in developing those guidelines. They are now in place.

We also have an ongoing job of evaluating the scientific validity of the dose reconstructions. And for this purpose the Board has the assistance of an outside technical contractor that helps us evaluate the

dose reconstructions. And we do this on a -- essentially an audit basis. We randomly select cases that have been completed and review them in an audit type of function to determine whether or not, for example, NIOSH is following its own procedures properly, if the dose reconstructions have been carried out in accordance with the proper methods, and so on. So that process is ongoing and will be going on throughout the years ahead.

And finally, this Board has a role in the identification and determination of the so-called Special Exposure Cohort groups, so that any petitions involving Special Exposure Cohorts require that this Board review the petition, review the recommendations of NIOSH, and that we ourselves make a recommendation. Our recommendation goes to the Director of NIOSH, and that in turn feeds up to the Secretary of Health and Human Services. And incidentally, in case you weren't aware, issues involving the Special Exposure Cohort -- particularly if there's a determination made that a group should go forward as a Special Exposure Cohort -- eventually that goes back to

Congress. So there are steps beyond, for example, what has occurred here today, even with respect to the Mallinckrodt group.

Our group does not do dose reconstructions. We do not handle individual cases. We're always glad to learn of your case and your experience, but if you have particular issues, they actually have to be handled by the staff people from NIOSH or, in some cases, Labor may be involved, depending on what the issue is. And if you have particular issues, this Board will not directly deal with your case, but we are glad to refer you to those folks from the agencies who actually handle the cases and process the dose reconstructions.

We are interested in the process. We're interested in how well it's working or how well it isn't working, what your frustrations are. We're very much aware of the frustrations throughout the system. One of our jobs is to try to help smooth the way and try to overcome some of the barriers that have existed in the past that made it difficult for the process to be completed.

As we proceed with the public comment period

then, I hope you'll keep that in mind that we -- we're not necessarily here to answer specific questions you may have on a particular case. But if you do have such questions, we want to make sure that they are also heard by the staff members of the agencies who are here and who can also help. But the Board likes to hear of your situations in the context of the job we have to do with respect to evaluating quality of dose reconstructions and evaluating, for example, the Special Exposure Cohort situation.

GENERAL PUBLIC COMMENT

So with that as background -- let's see if we can -- with that as background, I'm going to proceed. I have a list of individuals, some of whom are leftover, as it were, from our previous session, and I'll start with those, and then -- and then continue on with other names that might come forward.

I have Mary Johnson here on my list. Is Mary with us tonight? We're hopeful the snow didn't -- or the thought of snow didn't scare too many away. Mary, if you'd please approach the mike we'd be pleased to hear from you first.

MS. JOHNSON: My name is Mary Lou Johnson. I'm

the widow of David Johnson. Dave worked at Mallinckrodt at Weldon Spring from 1957 through 1961. In December of 1997 he fell to the floor with a grand mal seizure and was diagnosed that day with a glioblastoma multiforme, which is a grade four brain tumor. This is Dave. His case number, 5045. I wanted NIOSH to put a face with a case file.

These aren't just numbers, they're human beings. He was my husband, my best friend -- excuse me -- excuse me -- the father of my children and my business partner. He lived six months. I took care of him. I've run the family business by myself for the last seven years. I know I'm just one of many, many, but so much time's gone by, so many of them are dying, it's time for them to be workmen's compensated now.

I know you get tired of hearing these cases. They're real. How would you feel today if you went home and found your spouse on the floor and told they had five months to live? Can you imagine the devastation that would put on your family?

Thanks for letting me speak. Thank you.

DR. ZIEMER: Thank you for sharing a very difficult story. Mary Jenerry has asked to speak. Mary, welcome back.

MS. JENERRY: Well, I did speak yesterday, but I failed to tell you about David Johnson. I worked with him, too, and I worked about four feet from him. And I had many times seen him take containers and he said he was taking them down to Destrehan, and there was some kind of radioactive material in the containers. Of course he died of the brain tumor, and I just wanted to speak for him 'cause he can't. That's about all I have to say. Thanks very much.

DR. ZIEMER: Thank you, Mary. Tim Manser? Is it Tim? Appears to -- is -- M-a-n-s-e-r, perhaps? How about Donna Land?

MS. LAND: Yes. Dr. Ziemer and all the Board members, I am here as a claimant for my husband, Earl F. Socks, who worked at the Mallinckrodt plant at Weldon Springs. He worked there from June 1957 until December 1961. And I want to emphasize to you people that these workers had no idea of the danger of what they were working with. I have a picture

here that I'd like to present just as an example.

The workers were not informed of the dangers of exposure to uranium processing. My husband was involved in a chemical explosion at a tank farm where acid was sprayed on him. It was hydrofluoric acid. He referred many times to the orange fumes coming off the pots where the uranium ore had been placed with chemicals to be boiled down to a pure uranium state. The orange dust had settled on pipes, lines, and anyplace it could settle, and it was left there.

My husband developed lymphoma. We sent the biopsy tissue from St. Luke's to Barnes Hospital for a second opinion, where it was also verified as lymphoma. This followed 33 continuous days of irradiation, trips back and forth, burning layer after layer of his body, illness and inability to accept food. Because of my husband and others like him, I urge you to no longer delay the site profile of the Mallinckrodt Chemical Plant at Weldon Springs, Missouri. Thank you.

DR. ZIEMER: Thank you very much. We do have

with us again this evening Tom Horgan from Senator Bond's office, and Tom, I believe you would like to speak. Thank you.

MR. HORGAN: All righty. Thanks again for -- to the Advisory Board for sitting through these long days. They're -- we really appreciate and appreciate all the work you do. And now that it is the official public comment period, I did want to -- I was taking some notes and want to express some concerns on behalf of Senator Bond and -- and the Mallinckrodt claimants. Some of this is -- well, let me just go right to it. Do we know what the status of Dr. Anderson's participation in tomorrow's discussion of the site profile from '49 to '57 will be? I mean we are going to be -- you do plan on discussing '49 to '57.

DR. ZIEMER: Yes, we do.

MR. HORGAN: And do you -- is he going to be here by phone?

DR. ZIEMER: I'm -- I don't think I know for certain what his schedule is. I -- my understanding --

MR. HORGAN: Can somebody answer that?

DR. ZIEMER: -- is that he will be flying part

of the day, so --

MR. HORGAN: So is he going to participate in tomorrow's discussion and deliberation or not?

DR. ZIEMER: I do not know.

MR. HORGAN: Does anybody know at the Board? Dr. Wade, do you know?

DR. WADE: I think he's going to be in the air part of the time. I do not know if it'll be all the time.

MR. HORGAN: Okay. Well, then does the Board -- if you're going to have deliberations on this key topic from '49 to '57, is there a schedule on the agenda, now that it appears to be pushed off today's agenda, to deliberate on '49 to '57? I just got the answer to that question. Are there going to be votes on recommendations tomorrow with -- or without -- it appears without Dr. Anderson's presence?

DR. ZIEMER: That will be entirely up to the Board as to whether the Board wishes to make motions.

MR. HORGAN: So there could be votes tomorrow.

DR. ZIEMER: There could be votes, yes, certainly.

MR. HORGAN: Okay. Now this next question is a

housekeeping question, and it's to you, Chairman Ziemer. We were all following the agenda today, and I guess I would like to know why there was a departure from today's agenda? In other words, we had NIOSH give their presentation on the site profile, and then we had Denise on behalf of the Mallinckrodt claimants, and then after that there was supposed to be an immediate Board discussion of the issues raised in those two petitions, and then we went straight into two hours of public comment. Now I am all for public comment, and it was even scheduled for tonight right now and that's why all these people are here, but it wasn't scheduled right after that crucial -- those two crucial presentations. And I guess I'd like to know why it was -- I mean why was there a departure? Why did we not proceed -- the Board proceed directly into this discussion when the two presentations were fresh in their minds?

DR. ZIEMER: The schedule -- and the Chair will take responsibility for this. The schedule called for petitioner comments and public comments from 1:30 to 3:00 o'clock, at which --

and so we continued with the public comment. The petitioner comments ended at approximately 2:30. The comment period continued, as per the agenda, and we had a number of individuals from Mallinckrodt who indicated, because the Chair asked them if they would be willing to speak this evening. A number of them indicated they would be unable to be here and requested that they be allowed to speak, and the Chair therefore allowed them to speak so that the Board could hear --

MR. HORGAN: See, I guess I was following it and I saw the NIOSH presentation from 1:00 to 1:30, the SEC presentation that Ms. Brock gave and her designates from 1:30 to 3:00, and then I thought they were going to have an hour discussion. I didn't know that included public comment when public comment was --

DR. ZIEMER: Yes, the -- the agenda calls for public comment. The group that Ms. Brock designated -- according -- and I keep track of the time as we go -- finished at approximately 2:30, at which time I started down the list of others and asked specifically which -- which individuals needed to speak because they could

not be here this evening. So that is the reason for it. I take the responsibility --

MR. HORGAN: Okay, I have an -- an -- a schedule back here and I unfortunately left it at my chair, but that didn't -- that wasn't clear. It didn't seem that that was supposed to be the scheduled agenda and --

DR. ZIEMER: All right. And in fact we -- we actually went into our break time. We ended up the discussion at 3:30 and then resumed at approximately 4:00. The schedule calls for the Board to have its discussion on that topic at about -- at 3:45, so we were not that far off. The Board discussion was scheduled for after the break, which is exactly what we did. We did run a little long on the public discussion, at the request of the members of the public.

MR. HORGAN: Well, I guess I didn't quite read it that way, but maybe I'm the only one. At any rate, my point that I was making is that the Board lost valuable deliberative and debate time when these reports were fresh in their minds. When the topic was hot, we went to two hours of public comment. And by the way, I'm not against public comment. I encourage it

strongly. It's just that I -- it seemed to me that it was out of order on this agenda. Now even when we did get to the Board discussion on the NIOSH and the claimants' presentations, when Mr. Elliott was called up to the microphone the first thing he said was "If you remember my presentation," and then he went into make his point. I guess I'm going to leave it at there, but you know, that cost us valuable time and now we're going to have to -- the Board's going to have to deal with this tomorrow when a Board member's probably not going to be here after specific arrangements were made for him to participate. And I'm going to leave it at that, but I want the Board and the Designated Federal Official to be aware of that.

DR. ZIEMER: Yes, and let me also comment that the Board did not a priori indicate that it was going to take any specific actions by the end of business today. This was only desig-- indicated as a Board discussion, period.

MR. HORGAN: Well, we -- but the agenda does indicate that this would -- the -- the -- it would be wrapped up today.

DR. ZIEMER: No, I'm sorry, it does not.
MR. HORGAN: Okay, where -- oh, okay. I don't see it -- is it on tomorrow's agenda, too?
DR. ZIEMER: We have -- we have Board working sessions tomorrow morning and working sessions tomorrow afternoon, as well.
MR. HORGAN: Again, I think that's relatively unclear, but I'll -- I'll -- I'll accept the answer.
Okay. And also I -- we're hearing about a new letter. I guess it -- I don't know if I got it right, I was in and out a lot, from a Mount (sic) Mason that I -- is that correct? -- that rebutes (sic) the early letter of I guess Mr. Mason showing the falsified data. You know, basically there's a rebuttal and that key piece of evidence that calls into question a lot of the data from '49 to '57, there is a -- we hear now, today -- at least I have, for the first time -- that there is a new letter that rebuts this. Is this letter here? Can we -- can we produce that? Does -- does -- NIOSH has a letter. Do we have a copy of that?
DR. ZIEMER: I don't know the answer to that. Let's see, someone from NIOSH --

MR. HORGAN: Can someone from NIOSH --
DR. ZIEMER: The Board -- the Board has not seen the letter, let me tell you that.
MR. HORGAN: The Board hasn't seen it, okay.
DR. ZIEMER: No. Jim Neton from NIOSH perhaps can answer your question, so --
DR. NETON: Jim Neton. Certainly we'll make a copy of the letter available to both the Board and the public. We do need to review the letter for Privacy Act issues, and as soon as we do that and redact, as appropriate under the provisions of the Privacy Act, we will make it available to the public.
MR. HORGAN: Well, my next question is, you know, what -- well, I guess, Jim, you might want to stay here. When was it discovered? Who all has seen it? And I put incorrection (sic) the Board and I just heard that the Board has not seen it. Has the petitioner seen it, since it was brought up as a rebuttal to a key piece of evidence in their presentation?
DR. NETON: I'm -- I don't -- I can't answer at this meeting exactly when the letter was discovered, but it has been on our research database drive for -- for a while, is my

understanding. The petitioners have not seen it, but I do believe it was used as a part of the basis for the professional judgment evaluation that the Advisory Board has a copy of. But I -- I can certainly find out exactly in which data capture effort this -- this came to be on our database and -- and let you know when I find that information out.

MR. HORGAN: Okay. I guess my -- and my next question would be what -- I guess it was answered. Why was not the letter brought tonight to be shared with the Board and the petitioners?

(Off microphone) Why was the letter not brought tonight to be shared with the Board and the petitioners?

DR. NETON: I'm not exactly certain how to answer that. We didn't bring everything with us that we obviously needed to -- to share with the petitioners. It was not possible to predict exactly which pieces of information -- clearly this was one, in retrospect, that should have been.

MR. HORGAN: Well, and I -- I have to agree with you, Jim. If you're going into court of

law and you draw attention to evidence, it helps to have it there to -- so that we can look -- everybody can look it over and -- and -- and look at it, but at any rate, I'm not going to belabor that topic.

Now I hear for the first time that we have six new boxes of information about -- I guess it's related to Mallinckrodt. This is the first I've heard about it. And we need to go through these documents. I guess I'd like to know when were they discovered and how long is it going to take to go -- sift through these documents?

DR. NETON: Okay. As Judson Kenoyer indicated earlier in the afternoon, the existence of this information was known for a while. However, it was interleaved among classified information and it took some time to get that information released. To the best of my knowledge, these boxes were not released until as recently as several weeks ago, so it's been in the last couple of weeks that we've taken possession of the boxes and we have yet not gone through every single box to identify the type of information that's in there.

MR. HORGAN: Who released them, do you know?

DR. NETON: I can't answer that. Judson Kenoyer may -- Judson, do you know who released the boxes?

DR. ZIEMER: Was the question who released or --

MR. HORGAN: Yeah, he said that --

DR. ZIEMER: What was the question?

DR. NETON: It must have -- well, I'll let Judson answer that question 'cause I'm really not that familiar with the process.

MR. KENOYER: This is Judson Kenoyer. These boxes I believe were released after review from the ORO vault in Oak Ridge and transported to the Cincinnati Operations Center, and I've -- I had -- I've had a couple HPs starting to review those, and at the same time, after they review it, we will upload it to our computer system so that we can disperse the information.

DR. NETON: Was it Department of Energy?

MR. KENOYER: It was -- these were in the ORO classified records vault, and they were declassified by DOE.

MR. HORGAN: Okay. Well, I guess the -- the -- all I'm going to say is if we could -- if the Board or the petitioners could get an

unredacted copy of the -- of that letter, I know you have Privacy Act concerns, but -- but guarding those, I'm sure that you --

DR. ZIEMER: I'm certain we'll make everything available that we get.

MR. HORGAN: Uh-huh.

DR. ZIEMER: Everything the Board gets, you can have.

MR. HORGAN: Now I'm not going to stay up here too much longer, but there was a comment made today -- I think it was a really good comment -- by one of the Board -- I think it was -- is it Mars-- I -- I can't remember your name at the end of the table.

DR. ZIEMER: Wanda.

MR. HORGAN: Wanda. I'm sorry, Wanda. And it was the more information we uncover, the better chance that we can determine the feasibility of dose reconstruction. I think that's -- you know, fair to say. I mean new information may come out over time that may help us down the line. But while time may be the Board's best ally in determining the feasibility of dose reconstruction, it is and it already has been the claimant's worst enemy. Thirty people have

died while waiting for their frames (sic) to be processed. A large portion of these claims have been waiting for over four years to get dose reconstruction.

Now I'm going to reiterate something that Senator Bond said the other day. How long must these people have to wait to see if they can have their dose reconstruction done? Will six years be enough? Eight years? This Act was supposed to provide compensation for these people in a timely manner. Again, how long do they have to wait? I thank you for your time and I appreciate all the effort and hard work you put through on this.

DR. ZIEMER: And Tom, we thank you and the Senator's office for your ongoing interest in the program, and for raising some important issues tonight for us.

Now let me return here to my list. George Allen? Is Geor-- is it George? Yes.

MR. ALLEN: Good evening. My name is Mortimer George Allen, III. My father was Mortimer G. Allen, Jr. My father was in World War II in France and Germany. When he got out, went to St. Louis U., he became an accountant.

I'm here to address -- we've heard earlier to see -- earlier today about -- from nuclear -- former nuclear workers, family of -- families of nuclear workers. I'm here to address another class of workers at Mallinckrodt, the people that worked in the front office.

My father answered to a Mr. Bruner and Mr. Thayer. He was in -- the head of cost accounting department. His job was inventory. He inventoried the nuclear material. He told me about carrying containers two at a time. When they became clo-- got closer than three feet together, they got hot in his hands. Sounds like nuclear fission was going on, to me.

When they built the Hematite facility I was there for opening hot dogs and soda. I remember what it looks like. My father did inventory there on a quarterly basis. Then on a monthly basis for several years. He worked for Mallinckrodt from 1955 until 1970.

In 1969 my mother developed tumors on her legs. She washed my father's clothes. She slept in the same bed with him. And in 1973 she died. Cancer was unknown, it was just cancer; that's

all I know. Medical records are not available. In 1991, in like February, my father turned yellow, jaundiced. We thought he might have hepatitis of some form. And he went to the doctor, doctor said no, you don't have that. They opened him up. They took a look and closed him back up. He had cancer of the pancreas and the liver. They gave him eight to ten months with chemotherapy and radiation, and they gave him three to five months without. He took the without. He died in July of 1991.

I hope that this Board certifies all people that worked at Mallinckrodt, whether they worked in the actual processing plant or worked in the front office. My -- our car was repainted because of the fumes from this process, the same as George Mallinckrodt's car was repainted. My father's secretary and other women that worked in the office, their nylons melted on their legs from the acid fumes that reached the front office. I was told about having to blow a considerable amount of dust off the desks in the offices in order to do their work at that time because of that dust came into the office buildings.

That's all I have. Thank you.

DR. ZIEMER: Yes, thank you, George. Barb -- perhaps it's Kolsman -- Kolsman? Are we close?

MS. KOENEMAN: Thank you. My name is Barb Koeneman and I'm here on behalf of my father, Clifford (unintelligible) --

DR. ZIEMER: Barb, could you give us the spelling on that, just for the record here?

MS. KOENEMAN: Yes, it's K-o-e-n-e-m-a-n.

DR. ZIEMER: Thank you.

MS. KOENEMAN: My father worked for Mallinckrodt from 1936 to 1966. He was an electrical foreman. He died of lung -- lung cancer in 1984. My story is much like all the others you've heard here, and I'm sure you hear them all the time, just a slight variation.

I can't remember a time where he didn't have difficulty in breathing. He had chronic COPD before he was diagnosed ultimately with the lung cancer. He had a hard time walking from point A to part -- point B without getting out of breath. He had a hard time cutting the lawn, just simple things.

He also suffered from these horrendous nosebleeds. His nose would start bleeding and

they would just gush and he would have to be hospitalized for several days at a time. They would have to insert -- insert balloons and expand them to get the bleeding to stop. Like I said, there's just slight variations from I'm sure the same story you've heard over and over. There's a lot of people who need your help to expedite. And I want to thank Denise for all she's done, because before Denise nobody really gave a rip what happened to these workers, and I thank God for Denise. That's all.

DR. ZIEMER: Thank you. Also I have Rayetta Koeneman. Sounds like -- a family member, perhaps?

MS. KENNEMAN: Hello, everybody. I'm speaking on behalf of my father, Raymond Kenneman. My name is Rayetta Kenneman and this is my sister Joan. My father worked at the Mallinckrodt Destrehan site, uranium division. Dad worked from 1951 until 1956. He became very sick and was hospitalized. The doctors told him to quit Mallinckrodt, for he had extensive lung and pulmonary complications, so Dad had to quit at the age of 36.

Dad died of lung cancer in the year of 2001. I was born in 1954. I was conceived in the years Dad was working at Mallinckrodt Destrehan site. I was a sickly infant -- infant and child. I have severe Crohn's disease with one-third colon and small bowel left, along with many surgeries, and I have to have another one in the near future.

I have also had benign grapefruit-size tumor removed along with my ovaries and fillipian (sic) tube. And my breast, I've had cysts in the milk duct tract. I have many more health complications. I am in constant deal of pain and I am speaking on the behalf of all workers and survivors who have worked and gave their lives to Mallinckrodt. Thank you.

DR. ZIEMER: Thank you very much. Next, Joe Frazier.

MR. FRAZIER: My name is Joe Frazier. I'm a retired pipe fitter, Local 562, 41-year member. I worked for Sterns-Rogers* at Weldon Springs, 1968 and '69; United Nuclear at Hematite, and Mallinckrodt Chemical Destrehan Street in the '70's for General Installation Company, which has been out of business for ten years.

While working at Weldon Springs plant as a pipe fitter for Sterns-Rogers, our job was to remove existing pipes and equipment from the buildings and install a new system to produce agent orange. Some of the pipes and frequent -- and equipment contained foreign residue. At that time I still smoked, and we would be checked at the smoking area to see if we were clean. Periodically the monitor would tell us to take a shower and get clean clothes. These buildings were not clean. You could find small particles of that yellow stuff lying around. Before we left, Stern-Rogers broke up one of the concrete floors, put down a membrane and poured a new floor over the membrane. At that time I was maintaining the temporary heat and one of the monitors told me the -- came over there checking was that the radiation was already coming up through the new concrete. I believe this contractor took on more than they had ever realized, as the site was unable to be decontaminated. As a result, all work stopped and we were laid off. Before we left we were told ten foot of contaminated soil was to be removed from the site. The plant stood

vacant for a number of years while it was, I guess, reviewed and the plant could be cleaned up right. I would presume instead of removing the ten foot of contaminated soil, 75-foot mound was put over on top of it.

Construction workers are laid off when the job is completed, or in the case, terminated. The contractor takes his profits and goes home. The construction workers go on to other projects, wherever that may take them.

I feel that I was one of the workers that fell through the cracks with the problem, as I fell in the time frame that no one was concerned for illness resulting from radiation exposure from 1968 to 1974. I strongly feel this should -- and must be re-evaluated to include these missing years. My dilemma is it is not -- it -- not strange that the Weldon Spring site was contaminated before I worked there, after I worked there, but not while I worked there.

I have had 13 nose surgeries, 12 for basal cell cancer, one for squamous cell cancer. My father and his brother, which was my uncle, were also pipe fitters. They had no problems with skin cancers. They had similar

complexions and did not work around nuclear radiation. My -- my main concern is that one of these -- if I don't stay on top of this and get my checkup every six months that one of these skin cancer-- if I miss one of these things, this possibly could lead to something else, and I want to give my thanks to Denise Brock for her driving effort to win compensation for radiation-exposed workers. Thank you.

DR. ZIEMER: Thank you, Joe. Next, Jim Manning. Jim?

MR. MANNING: I also am a retired pipe fitter and I first met Joe Frazier on that job at Weldon Spring many years ago. And I would like to tell you about some of my experiences out there.

Now our job was to, in essence, demolish this plant. We took down pipe and took pumps apart and everything, and we were assured before we started there that all of these pipes had been flushed and there was nothing in them at all. And a lot of this duct work was supposed to have been cleaned out, and it's been my experience that -- one day I was on a ladder in

one of the buildings -- and these buildings had floors made of what is called stainless steel checker-plate. And what it is is a piece of stainless steel about four by eight feet with a diamond pattern on it to make it less slick when you walked on it.

So I was on top of this ladder disconnecting some pipe when this liquid came out -- where I had disconnected, it made -- it had broken the pipe -- and it spilled on the floor below me. So I thought I had better get a bucket or something to catch the stuff in, whatever it was. So I went and found a steel five-gallon bucket, put it under (sic) the floor under this leak, climbed back up on the ladder, looked down at the steel bucket, and the bottom of it had been eaten out and the stuff was spreading across the floor. And I got a few drops of it on my thumb and about a day later I lost some skin where that had gotten on my thumb. It -- little further damage.

And then also we took out a duct and capped it off with duct tape and plastic film, and this was loaded onto a car -- a railroad car on the old MKNT railroad* which is now the KT trail*,

of course. And this was put on open freight cars -- I guess you would call them a coal car, not these dump-bottom cars you see today, but an open freight car with a wall around it about four feet high. And it was sent off to -- we were told Oak Ridge, Tennessee for further disposal.

Now in handling these materials, we used a crane to load them into this freight car, and occasionally the plastic film that we'd put on them with the duct tape would come off and out would come a yellow powder, which has -- I think has been identified as something called yellowcake. And it was not unusual for spills to happen.

And actually that's all I have to say. Thank you, Mr. Chairman, ladies and gentlemen.

DR. ZIEMER: Thank you, Jim. Next, Clarence Snyder, Weldon Springs. Clarence?

MR. SNYDER: Clarence Snyder, electrician, employee number 10167. I've worked at -- from 1957 to 1965 at the Mallinckrodt Chemical Company, Weldon Springs uranium division. I've graduated (unintelligible) Trade School in 1948. Mallinckrodt Chemical Company was

contracted by AEC at Weldon Springs to process uranium ore. Early in 1940 the Destrehan Street plant, St. Louis, Missouri, processed regular uranium, later moved to Weldon Springs where enriched uranium was processed. So the company had a long history of (sic) our production methods were improved. The Weldon Springs plant had the latest technology, but lacked protection for their plant workers. It should have operated as a state of art facility with a clean and safe environment. Instead, Mallinckrodt was negligent and was operating a hazardous and dangerous radioactive plant. Numerous blowouts and explosions occurred which electricians were expected to repair. High levels of radiation were monitored by the badges we wore warning the dosage amount, but did nothing to prevent airborne dust and chemicals.

Electrical equipment failures were common from chemical fallout. The quality of the air was affected by the pot-room product, orangecake, where liquid was boiled down to orangecake. In another hazardous process open salt baths in the pilot plant were used to heat uranium metal

for spin casting.
Improved methods increased production, some of which turned out to be even more dangerous. I can recall numerous incidents where electric furnaces were burned out when defective slag liners caused blowouts. A new method then was used known as vacuum induction electric furnaces. By the way, the old furnaces were also electric, but they were the standard electric furnaces. It, too, failed and six operators were injured in the explosion.
No doubt Mallinckrodt managers received many awards for their work and accomplishments during World War II through the Cold War. The employees, however, received nothing -- no retirement, not even a thank you for our service nor our commitment to our country.
I'm here to -- I'm here today to comment. As a former known employee of Mallinckrodt Chemical uranium division, Weldon Springs, Missouri, from start-up to close, and in my position as electrician witnessed most all day-to-day hazardous operations -- danger, blowouts and explosions. As electrician -- electricians health and safety rep, these gave grave

concerns were (sic) re-- were repeatedly reported, but safety procedures still lagged and caution remained lax and unenforced. Today, nearly 50 years later, we affected employees and approximately 70 percent survivors are still making a joint effort to fight for a substantial monetary compensation for the negligence and injustice this company allowed to exist, causing injuries, illnesses, suffering and early deaths to their employees -- to their employees. Now we are requesting from this date on for compensation, while our diligent investigator, Denise, and our legislators can realize their (unintelligible) and the results in a most timely manner. Too much time and delay now has already passed and stagnating our claim and immediate po-- positive results should hereto be finalized. I'm also speaking representing the 26 electricians that I've worked with at Mallinckrodt. Thank you.

DR. ZIEMER: Thank you. Next we'll hear from Jean Sack -- Jean Sack.

MS. SACK: Good evening. Can you hear me? 'Cause some of them I couldn't hear.

DR. ZIEMER: You're doing well.

MS. SACK: Okay. My husband's name was Earl Sack and he hired in when he returned from the Korean Conflict -- they called it conflict then instead of war -- and he was at the Destrehan plant when he started and was there just a very short time and he was moved to the Mal-- Weldon Spring plant, and he was a welder.

Now I didn't -- he didn't talk a lot about how bad things were to me, and -- but of course some of these men that -- electricians and that have talked about things. The only thing he ever said to me was that they had some problems at the plant and he would have to crawl around in there where this uranium stuff had been running all day. Now they had to shower every evening, but of course all day long, if you've got this stuff on you, you know, what good does it do?

He died when he was 60 years old of pancreas cancer. And still at that time we didn't know that it was, you know, given to -- whether it was really because of he worked at Weldon Spring, because they kept saying every-- noth-- you know, everything was fine, there was no

danger. He died, my two -- I had three children, but my two daughters were expecting babies when he died. He never saw his two grandchildren.

If it wouldn't have been -- the first -- the first time that I got upset about the slowness of things going on was when I read in the paper one day that they had -- the people -- that they were having a meet-- that they'd had a meeting for uranium workers in St. -- in the St. Louis area and that there was poor representation there. And I thought -- what meeting? I wasn't notified of any meeting. So I wrote a letter to the person in charge and says I hope you're going to run things a little better next time because I wasn't notified. Naturally there's probably no -- lots of other people that weren't notified.

So I have to thank Denise because she notified all of us when she got these meetings together. My claim was done in -- let's see, when was it -- I guess when she had her first -- first or second meeting, whenever they had come out and said that the government had finally decided that the people that worked in the uranium

places should be compensated because of the dangerous situation, so that's when I fir-- so I went to the meetings and I filed a claim. My claim has been in for three years now. Dose reconstruction is pending. What a joke, as far as I'm concerned. If they would have saved all that money they've spent all this time and just paid the people that died with cancer or had cancer, the things that they said were -- were causes from being in ur-- around uranium, it'd be cheaper than what -- what we're going through right now.

I just -- the other -- the other thing that I -- the other time I got upset was I couldn't -- when I was filling out my claim, I couldn't remember the date that my husband started at Mallinckrodt. I knew the year, but I didn't know the day. So I wrote to the personnel office at Mallinckrodt and asked them what -- that I needed to know the date that my husband was hired at Mallinckrodt, that he worked at Weldon Spring and so on and so forth. Well, I received a letter back that said Mallinckrodt had no record that my husband worked there. Now, you know, he died, but you know, he didn't

work there. So that told me that I was in -- I was in for, you know, a lot of trouble. I was very re-- I was -- I was looking forward to receiving some compensation because of some problems and -- financial problems with three children and -- and -- and I still haven't received a compensation. Thank God I was able to work myself.

Thanks to Denise for getting us started, and I hope I receive some compensation before I die. Thank you.

DR. ZIEMER: Yes, thank you, Jean, for sharing with us there. Gloria Bringer. Gloria?

MS. BRINGER: Ladies and gentlemen, my name is Gloria Bringer and I am standing here on behalf of my father, Frank Bogner*, Jr. He worked for Mallinckrodt for 41 years, from 1946 to 1987. He started at the Destrehan plant. When they started up Weldon Spring, he started up the plant. When they closed it down, he closed it down. Then he went back downtown.

Not only did he work at those two plants, while at Weldon Spring he was also in charge of equipment for Lattie* Avenue, for the equipment at the airport site, and he was also sent to

Fernald, Ohio to set up the plant there. So we have five different places that he worked for Mallinckrodt.

We just received a letter from NIOSH that stated the letter that received last year that said that Dad was in dose reconstruction was a mistake. They didn't exactly tell us why. There are four different reasons and it's one of those four reasons, or a com-- or a combined reason, but is it because he worked at five different sites and site profiles have not been completed for those five sites? Only Fernald and Destrehan have been completed.

Well, at the rate things are going, it'll be the year 3000 by all -- time all five site profiles are done. My mom can't wait that long, and I'm standing here for her.

Dad -- before he passed away in March of 2002, he made a listing. He's -- he applied in September 14th, 2001 for his -- his benefits from this program. And he made a listing and we went through his work history. He listed every single building he worked at at Destrehan, every single building he worked at at Weldon Spring. He could tell me which area

he was in each building and which elements he was exposed to. He was exposed to beryllium, green salt, pitchblende, uranium ore, orange -- orange oxide, brown oxide, radium, thorium, black oxide, barium sulphate and uranium residue. In working with uranium residue he did suffer an eye injury. However, the medical records from '46 to '66 are missing, so we cannot verify that -- at least Mallinckrodt can't.

But see, Dad saved everything. He's got every single W-2. He's got every single pay slip. He's got every single note that was ever written to him and any piece of correspondence. So we've got signatures from people all over Mallinckrodt. And he also saved the Wise Owl plaque that he received from having his eye injury, and it has a date on it, so we have some verification there.

Where are those records, that's my question. We've got the ones from '80 -- from '66 to '87, but we don't have anything before that.

He suffered from heart attacks, seven by-passes, prostate cancer, two knee replacements, diabetes, Parkinson disease, blood clots in his

lungs, several strokes and finally respiratory failure.

As I said, he died March 1st, 2002. On January 9th of 2002 my mother was diagnosed with moderate dementia. The doctor said it was because of the severe stress that she had been under in caring for my dad. She never left him side -- his side for more than a half an hour or 45 minutes. She would make several trips to the grocery store because she didn't want to leave him. If -- on those frequent or infrequent times that she did leave him over that, she bought a cell phone. Mom is not a 20th century person. She bought a cell phone and had it on the whole time, in case something happened to Dad and so she could get back to him right away. He always said the best $2 he ever spent was for their marriage license.

She also suffered quite a bit. I was born in '47, my brother in '50. Between '50 and '56 she suffered two miscarriages. My sister was born in '56. She cannot have children. She almost died trying to have children. Mom had a heart attack. She had a stroke. She had triple by-pass. Right now she's in a dementia

facility.
We applied for these benefits. After Dad died we had to apply for survivor benefits. And in 2002 we went to a meeting that Denise held, and it was the second big meeting, I suppose, 'cause we had a whole lot of people there in St. Charles, and I talked to both the Secretary of Energy and the Secretary of Labor, and they both assured me that our benefits would be paid to us and our claims met within six to 18 months.
Well, ladies and gentlemen, that was October 2002 and it's now January (sic) of 2005. Obviously, you know, people don't know what they're talking about 'cause they don't know what they're doing. I am tired -- physically, mentally, emotionally -- of being lied to, deceived, given the runaround by Mallinckrodt, by NIOSH, by the various Departments of government. This has affected our whole family. My brother lives in Seattle, my sister in Chicago, so I'm the only one here to fight for Dad and to take care of Mom.
As one of the other people said, the government would have come out way ahead if they had just

paid everybody who worked at Mallinckrodt, because anybody who walked into those plants, especially Destrehan and Weldon Springs, deserved to get that money, because just walking in those places you were exposed to what was there.

I know several times Dad would come home and say we were up to our armpits in plutonium today. And I'd say really? And he'd say literally up to our armpits. You have to consider that Dad was a foreman. He was a supervisor. He had to go into all of those places and work with all those people to make sure that all that equipment was working properly. If something was wrong, they called him. He had his beeper. He worked night shifts. He worked day shifts. There's a lot of times that we don't remember my dad because he wasn't there. He was a company man. And if this is the way the company treats him, then you know, I don't care if Mallinckrodt goes down the drain in bankruptcy, quite frankly. No one in this whole world can be found who had the same job as my dad, because he was at so many places doing so many things. And so

therefore they can't do a dose reconstruction because there is no one who had similar exposure. So therefore I please ask you, in your recommendation, that Mallinckrodt be declared a Special Exposure Cohort and that we finalize this and we can get back to our own lives and go on living. Thank you.

DR. ZIEMER: Next we have Joyce Humphrey. Joyce?

MS. HUMPHREY: Thank you very much. I stand here on behalf of my father, Lloyd Humphrey, who passed away August 6th, 2004. He worked at Weldon Springs plant from 1957 to 1965. His first six months there he was in the -- what they called the pot room in the refinery, and then he worked in the warehouse where he unloaded rail-- railroad cars and delivered the ore in that to different places in the complex. On the list of cancers, I believe there are 22 of them, my dad had four primary cancers. In June of 2000 he had his bladder removed because of bladder cancer. He suffered numerous urinary tract infections, which is common when you have your bladder removed. That eventually led to his death, along with colon cancer,

which he was diagnosed with in December of 2002 and operated on. He had a recurrence of colon cancer in 2003 and had another surgery. He had skin cancers, one of which was over 35 years ago, so I cannot get the medical records for that, but he's had -- had two more since then. None of these cancers were cancers that spread to any other part. They were all primary cancers.

We filed the original claim for my father in August of 2001. After he died in August of 2004 I filed a claim as a survivor. To my knowledge we are in reconstruction right now for dosage reconstruction. I don't know how they can possibly do that accurately, but that's what they're trying to do.

My dad said he would never live to see any resolution on this, and he was right, he didn't. I'm just wondering if I will.

My dad was assigned a tracking number -- 1142 is his number -- and I would like for the Board to know that my dad was more than a number. My dad was a World War II veteran who won five Bronze Stars -- he was awarded five Bronze Stars. He was a family man, a Christian man, a

good friend to many people. He was more than that tracking number.

And I guess I would like to finally say, you know, please -- they were not told -- according to my father, they were not told how dangerous it was to work in what they were working around. And that wasn't right. Please, make it right now and give these men and women the compensation that they deserve. And I would like to thank you for listening to me and thank you, Denise, for everything you've done. Thank you.

DR. ZIEMER: And thank you, Joyce. If I read this correctly, I think it's Donna Locker Long. Am I reading that correctly? Is there -- is it Donna Long? D. Long?

UNIDENTIFIED: (Off microphone) I think I -- I think I'm being called twice.

DR. ZIEMER: Oh --

UNIDENTIFIED: (Off microphone) (Unintelligible) yesterday and then it -- said that I would wait until today (unintelligible).

DR. ZIEMER: Oh, possibly your name has reappeared. Okay, thank you. Yes, you were on this.

Jennifer Hunter Hernan -- Herner?

MS. HORNER: Horner.

DR. ZIEMER: Horner, thank you.

MS. HORNER: My name is Jennifer Horner, maiden name Hunter. I'm here with my mother, Freida Hunter. My father first filed his claim July of 2001 and in August he wrote a personal statement because he, like a lot of people, did not believe that he would live to see anything happen with his claim. So I'd like to read his statement since he is no longer with us to represent himself.

(Reading) In the early months of 1957 I went to work for the Mallinckrodt Chemical Company at Weldon Springs, Missouri as a maintenance electrician. I worked for this company until March of 1963 as an electrician. During this time frame I worked on all phases of electrical work used in the process of converting uranium ore into uranium metal. This process was very complex, as it took various acids in the processing of this uranium ore.

One of the most dangerous buildings as far as radiation was called the metals building where they put the ore in big ovens and baked it at

high temperature for several hours.
And within the context, in the body of this, he goes into dimensions of the ovens and the equipment, the machinery, a lot of detail, down to inches, of what everything looked like. And then further down it says (reading) If there were any cracks or openings in the slag liner, the magnesium would burn through the shell outer lining in a split second, causing a blowout in the furnace or oven, usually damaging the oven elements and interior. The ore would run down into the pit where it would have to cool down from several hundred degrees. The controlled relays were near the back of the furnace on a rack, with electrical conduit buried in concrete alongside of the pits, the control cabinet near the front of the oven. The heat during one of these blowouts would be so intense in the pit that they would melt the control wiring in the conduit buried in concrete alongside the pit.
When these ovens would have a blowout they would be out of operation for a period of time and production would be down, so they would expect the craftsmen to get the ovens back in

operation as soon as possible. I've worked on these ovens on the interior while the uranium ore in the pit would still be glowing red from the heat. I have no doubt that while working on these ovens I was exposed to quite a lot of radiation. The building contained several of these ovens or furnaces.

There was other equipment located in this building. There were some big (unintelligible) vertical lathes that were used to mill these blocks of uranium metal down to a certain size. And while the milling process was in progress, the sparks would fly from the milling machine cutting head. They had a liquid coolant flowing over the cutting head to contain the sparks. I know that there was a lot of radiation around these machines, and we had to do maintenance work on these machines. There was blocks of uranium metal sitting at open storage areas in one corner of the building.

In a left rear corner of the building there was a large machine called an extrusion press. This machine had a large induction furnace and handling system to heat these large blocks of uranium metal to a very high temperature. They

would come out of this furnace glowing bright red. I'm sure that the men who worked in the buildings -- metal buildings and the other various production buildings were exposed to various amounts of radiation that would cause cancer and other diseases and problems of health.

I've been diagnosed with colon type cancer approximately seven years ago. The treatment pain that I have suffered has had a significant impact on mine and my family's lifestyle during this time frame. And it's signed Ralph O. Hunter.

We had it notarized and it was sent off August of 2001. He did his phone interview, even though he was barely able to sit there he was in so much pain. He did that in April, 2002, and died a couple of months later, June of 2002.

I just find that it's amazing that he was able to recall all these details, even though he was not feeling very well, even down to measurements -- specific measurements of machinery and equipment, even down to the brand names of the machinery. And then recalling how

everything was still burning bright red in the pits. And it's obvious that he received enough radiation exposure to cause his cancer, and yet prior to the site profile NIOSH has sent a letter stating insufficient exposure.

Our family believes, as well as I'm sure a lot of people, that these claims are being delayed, I guess waiting for the workers to die, and hoping that families and surviving spouses won't have the nerve or the knowledge to continue with the claim. I guess you're just hoping that they'll go away. These people are not going away. My mother is not going to go away.

And I do have some concern about residual effects. I have a seven-year-old at home. My father's only grandson was born paralyzed and missing major organs. There's got to be something there.

You know, today's workers are protected by government agencies and by OSHA and protective equipment and conscientious employers who are held liable for anything that they do -- any of their actions. It's just a shame that yesterday's workers are not given the same

consideration and protection.

DR. ZIEMER: Thank you, Jennifer. Ron Steiger -- Steiger, Steger?

MR. STEIGER: My name is Ron Steiger. My wife worked at Mallinckrodt from '52 to '56, '57. She went there right out of high school. There was a shortage of lab technicians because of the draft -- a lot of drafting going on into the Korean Conflict -- so they had to hire up some people. So she -- she was one of the chosen few. She worked there for six years. She left there because she was pregnant with our first daughter.

In the meantime, I went in the Marine Corps, and I finally found out that she had a more dangerous -- she had a more dangerous job than I did. I could shoot at the person that was my enemy, which she couldn't.

At the first doctor's visit for our last -- our last child was a boy. And at her first checkup at the pediatrician -- or obstetrician, they found a little lump in her throat, which was diagnosed as Hodgkin's. This was six years after she left Mallinckrodt. She fought it for ten years. That wonderful doctor at Wash. U.

did a fantastic job, and she was determined to live until her son -- who was born then -- got into grade school. So she made that.

But I think there was about 16 hospitalizations over those ten years, different kind of radiation, different kind of -- there wasn't a lot of -- it was a new process and they didn't quite know what the drugs would do to you. She lost her bladder because of -- of the -- the effects of some. So it's just been a long struggle.

And I just think we've been lied to too much. It's just been one big coverup after another, and as you get these letters, I've been -- I started this about four years ago, and -- and just about the time you think you're going somewheres, another letter'll show up and say well, you know, you're -- you're still here or you're still there. And then when they come up here and said well, we went from a D to a C or a A to a B or whatever this is, I mean that was another -- I thought what -- what is this, you know, this is stupid.

So gentlemen, I thank you for your effort, but you got to do better. And Denise has been a

fantastic help. Thank you.

DR. ZIEMER: Thank you, Ron. Andy Semradi -- Samradi?

MR. SAMRADI: I guess you're getting tired of hearing from me, but I'm here as a representative of the airport people. Now this man here, he said he was a contract worker out there. You're lumping everybody in on this Destrehan site, and these people deserve everything they get. But if I look around this room here, I don't know these people from Mallinckrodt, but it looks to me like you went from '42 to '47 -- none of these people are them. These are all people that started after '40-something, so what are they going to get? You know, they were out at Weldon Springs and this -- they should get it.

But the airport people -- I'm telling you, I've got a fact right here. The alpha and beta is over the limits, and this was done in 2000. Now why are we fighting NIOSH? NIOSH should be working for us. I've had investigations out there and they come out and do nothing. They can't get into the spots and all -- well, there's a few TWA people here -- and we made

them run some tests years ago, and we can't get the answer. We can't get the answer from DNR about this water pollution. And I get the laws and authorities and everything here that tells you the Clean Water Act. Cradle to grave is what my company told me. I had the haz-whopper training. And when I go out and I pick something up and I release it into the air or into the stream, I'm guilty. But my company could do it and they could -- they could cover up all the facts and everything we've got. Now you've got this CF 29 1910-20, access to employees exposure records. I've asked for these. I can't get them. I contact NIOSH, I contact OSHA, nobody will do a thing. They won't make the company -- they say they have -- they don't have my records. Now this was in 2000. Now these people here are trying to get records from '42. How are they supposed to get records when we -- and I can't get them now. And what is the penalty if they don't have records? It says you have to keep the records of anybody's employment for 30 years after you leave employment. Now where are my records? Now what's going to happen -- the airport has

got pollution out there. I'll guarantee you you've got pollution. I could show you. All I got to do is get somebody out there. It's all government, and that's what NIOSH inspector told me. He says this is all political. You're not going to get the records. Well, I was in on that new tire construction. I was in on that new east terminal construction, ate my arm up. I got breathing problems and I finally got a doctor at Barnes that told me you want to die or do you want to live? If you want to live, get out of this airport. Well, he had me on workmen's comp. My company fought me for -- 2000 I went on workmen's comp, supposedly. They been -- I still have not got a dime from workmen's comp. I have no sick leave. I was out over two years with no pay at all coming in. Me and my wife survived and that's what I'll do, I'll survive the rest of my life. I don't need them. But I could see the -- what you're doing to these people here. Now not you people, I mean. But NIOSH, to me, is fighting us. Why are they fighting us? They should be out there running investigations. And I'll tell you, there's a

couple of TWA people here that -- I've got a list here in my -- well, not here, but in my briefcase there, I know of at least 75 people at the airport that has got cancer, have died of cancer, and one of them here has got cancer now. And they're dying all the time on us out there.

Now sure, this is Mallinckrodt people, but we've been the residual things that they dumped out there. I could prove truckload after truckload used to come out there. It went into Coldwater Creek, went into the Mississippi River. Everybody along Coldwater Creek has been affected by this. Now it's time -- you know -- oh, sure, you voted or are going to vote on the '42 to '47, that -- that's ridiculous 'cause those people are dead. There might be one or two of them here. These people here from '47 on, even to -- there's a few here that were working there in -- in the '90's. It's still there.

Now if the airport has still got residual radiation, where's that? I've got samples that have got DDT in it that's been banned since '77 that's at the airport. Now if anyb-- why can't

we get somebody to come and run tests and investigations to help the people? There's a thousand employees at the airport that should be involved in this. All those construction workers. The electricians, when they built that new control tower out there, they refused to go in it because the water would splash on them and they would put welts on them, burn you.

The airport police complained about the mold in their office. It wasn't the mold. It was the stuff right underneath the ground underneath them they were breathing. And we've got a lot of the samples and things, but we can't get any attorney -- I've been to the biggest attorneys around this area. Nobody will touch it. DNR won't touch it. Bill Renner* went to Jefferson City, talked to DNR, OSHA. I've been to everybody I can, and we can't get anybody to do -- and it's like a prison out there. You can't get on the property there.

Now some of the employees could get there, but they threaten to fire them. I had a television station working with me to get samples. They threatened to sue the television station, TWA

and the City of St. Louis. And -- well, I lose my thought. I got brain damage and -- but I mean I'm going to survive.

I've got my arm back. I -- and I -- but I'm not working there. I don't -- don't have any money from them. I've got my Teamster pension now. But the company fired me one day before I could self-pay and get $700 a month more on my teamster pension, so you tell me that they didn't set me up. And they fired me for absenteeism, and I was -- had a perfect attendance the year before and they give me a letter of commendation, and -- but they -- they didn't want me after 43 years, and I had the best job out there and everybody -- you could talk to anybody and they'll tell you that.

But I mean should we get this -- like you got access to your records. Should all of us younger people get these records now, before we have to go through this same process of dose reconstruction a couple of years from now whenever our families want to -- we've -- we turn up with cancer and die? I can't get them now. How are we going to dose reconstruct what I got if I can't get them now? And these

people from NIOSH are going to come in here ten years from now and say oh, we're going to work on it and they're going to postpone it, postpone it and postpone it like they're doing for these people.

Now I realize Weldon Springs is not included in your thing. The airport's not included. Hey, this is all Mallinckrodt stuff we're exposed to. And I could show you -- and if anybody wants to -- I'll put up my own money. If you want to -- if you want to come out there and give me a construction crew, I'll -- I'm not a betting man. I don't go to the boats and stuff, but I'll bet you every dime I got, I'll take a construction crew out there, I'll drill test wells, and if I don't find this radiation and these DDTs and these pesticides and stuff, I'll pay for it, but you pay for it if I find it. I'll guaran-- hey, that's as close as I come to a guarantee on it. But it's about time to pay these people here. Thank you.

DR. ZIEMER: Next I have Frances -- I believe it's Scoeggins.

MS. SCOGGINS: Scoggins.

DR. ZIEMER: Scoggins, Frances Scoggins. Thank

you.

MS. SCOGGINS: My husband worked for Dow Chemical Company in Madison, and he died of cancer in '91. He found out in August -- in April of -- 20th, so on his 64th birthday -- that he had lymphoma, and he suffered agonizing death for -- from then until he died in July 6th of '91. And I had -- we had six children. This is one of them. And I had two miscarriages and I think that was because of what he was working with at Dow Chemical Company. But he didn't tell us anything about his work 'cause we didn't know anything about his work. But he was -- he started at Dow Chemical Company in 1953 and we had our second baby in '54, and he was working there then and he's -- he was just a wonderful man and he was good to the girls. And he -- I said during that time I had two miscarriages, but that's all I've got to say.

DR. ZIEMER: Thank you. Yes?

MS. BEST: I'm also a survivor of Ray Scoggins. I'm his daughter.

DR. ZIEMER: And tell us your name, also, please?

MS. BEST: My name is Pamela Best.
DR. ZIEMER: Pamela? Uh-huh.
MS. BEST: And in 1996 I was diagnosed with RA, and then in 2002 I was diagnosed with OA. I have had a heart attack. I've had two heart surgeries, and I was born in 1958. And that was between the time -- 1958 until 1964 is whenever Mom had her two miscarriages. One was a set of twin boys and the other was a single boy, but she still lost them. And when she got pregnant with my youngest sister, she was born in 1962, and she found out she was fine then. But that was after everything.
I don't understand why nobody told these workers how much damage this could do, not only to them but to their families. I mean this stuff can be handed down, generation to generation, and there's no sense in not telling anybody about it. That's all I needed to say.
DR. ZIEMER: Thank you. Next I have listed Harry Durse -- or Durkso family -- family? Maybe several folks. Is it Durkso?
UNIDENTIFIED #1: (Off microphone) Durso, D-u-r-s-o.
DR. ZIEMER: D-u-r-s-o, Durso. Thank you.

UNIDENTIFIED #1: Good evening. We are the daughters of Harry Durso. He worked at Mallinckrodt from 1941 to 1972. He spent 21 years at the -- is it called Destrehan plant, the one off of North Broadway, and ten years at Weldon Springs. He was a chemical operator, that was his title. We have a Mallinckrodt newspaper that has five photos of him in here, and it looks like the only -- he's stirring up -- I guess whatever, chemicals or something, and -- did you want to see it? And it looks like the only protection that they had at that time were some kind of glasses that they could wear over their own glasses or -- or whatever. And my father was diagnosed with cancer in -- let me find it now, where did I put it?

UNIDENTIFIED #2: In '77.

UNIDENTIFIED #1: '77?

UNIDENTIFIED #2: Uh-huh.

UNIDENTIFIED #1: Oh, in August of '77, and he died in August of '81. On his actual death certificate it was listed as a heart attack. He was in intensive care. He had several surgeries for cancer. And when he died he had cancer from his brain all the way to his toes,

probably. He couldn't walk without assistance. My mother used to have to rub his legs. His legs hurt so bad 'cause he had cancer in both his legs and that. That was bad enough. The doctors came out and told us he had ten minutes to live unless they would put him on life support. My father did not want that. I think that's the hardest decision our mother had to make is saying no life support.

A few years later our mother died in November of '90 from cancer, and she also suffered a terrible death like he did. She had numerous tumors. She had had radiation implants put in her to try to kill the -- the tumors and everything and she also died a terrible, long death.

Right now we haven't been diagnosed with anything, thankfully, and we hope that continues. But we thank you for your time and effort. And thank you, Denise.

DR. ZIEMER: Robert Mollinhauer?

MR. MOLLINHAUER: My name is Robert Mollinhauer. I'm here on behalf of my dad, Richard. I don't know the exact date he started, but he had 37 years. He was at the

Destrehan plant, shifted to Weldon Spring, and then back. And they made him retire after 37 years 'cause he -- he had cancer. He was walking sideways. He had something called hydrocephalus. I've got all the records, filled everything out, and like everybody else, why are we waiting? I'm going on four years. Here, here it is here, the same thing, comes all the time. My question is why. And I know Denise is helping us, but why can't we just get paid. That's all I have to say.

DR. ZIEMER: Thank you. Virginia Jones -- Virginia?

MS. JONES: Hello. I will make this short. My husband worked for 32 years for Dow Chemical. It was Spectralyte* when he passed away. He -- he died in 1986 and he had cancer in the lungs, in the shoulder, the brain, various parts of his body. And he worked in a lot of different departments. He had one more year but he was going to retire, and that's all I have to say.

DR. ZIEMER: Thank you very much. Richard Ralgens -- again, I'm having a little trouble -- R-a-l-g-e-n-s? I may be reading that wrong. Richard -- maybe it's R-o-c-l-g -- Rocler,

maybe, Rocler? Anything close? I'm sorry, I'm having trouble reading this. Richard A. -- also from Spectralyte Corp.

UNIDENTIFIED: (Off microphone) (Unintelligible)

DR. ZIEMER: Okay.

UNIDENTIFIED: (Off microphone) Thank you, though.

DR. ZIEMER: Thank you very much. Linda Ridenauer? Linda Ridenauer not here? Okay, let's -- and also Donald Ridenauer, perhaps have left then. Paul Led, L-e-d.

MR. LEO: (Off microphone) Leo?

DR. ZIEMER: Leo, Paul Leo, is it, L-e-o?

MR. LEO: (Off microphone) Yes.

DR. ZIEMER: Yes, that's it.

MR. LEO: My name's Paul Leo. I've worked at the St. Louis airport site in the late '90's, early 2000, and since then I've developed respiratory problems and that's really all I have to say. There -- there was people getting sick on the job site, and I've learned that they did an air -- air quality study. They told the workers that there was nothing wrong, and it's come out that they lied, so thank you.

DR. ZIEMER: Thank you. Betty Rode.

MS. RODE: I'm here to speak on behalf of my deceased husband, Ray Rode. He was from the Hematite United Nuclear plant and also he worked for Combustion Engineering, and it had formerly been -- in the beginning it was a Mallinckrodt plant, and they sold out to United Nuclear. They sold out five or six times during the time he worked there, from '67 to '88 that he worked there.

He was a security guard. He was required to go throughout all the plant, throughout the radiation areas, the hot rooms, everything, and all the grounds on his rounds that he would have to make every hour. He was not given any proper uniform to wear -- I mean only a shop coat was all he was required to wear. No mask, no gloves, no -- nothing. And he went through all kind of contaminated areas.

And upon retirement he contacted (sic) a chronic cough and when he finally went to the doctor because he couldn't clear this cough up, he was told that he had scarring in his lungs, and there was nothing they could do for him. They said there was no treatment for it, other

than a lung transplant, and they figured by the time that he received a lung -- received a lung transplant that something else would get him first. So they said that there was no beryllium at that plant, but I have reason to believe there was because a lot of the workers that worked there said there was beryllium there, and I think that he had that CBD or whatever it was, beryllium disease.

And once while he was working there he was -- the plant was secured over a weekend. He was the only guard on duty, and he discovered that the hydrous ammonia tank was leaking, and he went to report it to the guy that was over him, Arlen Nowak*, and he told him to go find the shutoff valve and shut the tank off because it was leaking so bad. He didn't want to get out in the cold to come and take care of it, so he asked him to do it, which wasn't his job, so he didn't know where the shutoff valve was and he said it took him three tries to go back and find where to shut the valve off at because it kept taking his breath. And he came home that morning and told me that he had almost got overcome by the ammonia, it was so strong, and

he said that he burned all the way down through his -- his chest, and he wanted to know if I had cough medicine or something he could take to relieve that.

Well, after so long, the -- the burning quit, and then he had developed this cough, a chronic cough. He just hack, hack, hacked all the time and he didn't seem to have a cold or anything. So that's what sent him to the doctor 'cause he couldn't get rid of his cough. And the doctor said that he had striping all through his lungs. He didn't know what it was.

We had to change doctors because of insurance. We changed insurance and so he was required to take another physical, and when he took the other physical later on, they told him man, what have you been into? You have got into something that you have inhaled and has burned your lungs. He said they have scarred them up something terrible.

And so as years progressed, it got worse. His breathing got worse. His oxygen level would drop and he finally had to go on oxygen, and he was on oxygen full 24 hours a day, seven days a week. And it got to the point that later on he

couldn't even walk across the floor, he -- he -- without assistance. He went from a healthy man of about 209 pounds down to less than 120 pounds when he passed away, and he's been gone for two years now.

And I have put in claims since 2001, and I have got rejections from Department of Energy, Department of Labor. I have done -- they give me the runaround -- get in touch with Paducah, Kentucky. I'd call them. They'd say go -- write to Colorado. I'd write out there. They'd say write to Seattle, Washington. I'd write out there. I've wrote -- and I get a stack of denials that big, they said because -- we're not paying because it's not cancer. Well, it's just as bad as cancer. It scarred his lungs and it took his life. And I've got his lung X-rays there. And when he passed away I had an autopsy done, which cost me $2,000, and I didn't have to have the autopsy done but I wanted to know myself just exactly what was his problem. And I have a 15-page autopsy and it states in there that he was a perfectly healthy man. All of his problems was located right in his lung area, and it was due to some

toxic substances or gases that he had inhaled at some time or another that scarred his lungs up so bad. And yet I can't get any compensation because they say he didn't have cancer. Well, to me, this was just as bad 'cause it took his life.

And a lot of other people's got respiratory problems, and they can't get any compensation, either, because it's not cancer. Cancer is the main word. If you don't have cancer, you don't have any chance to get any compensation.

That's baloney. There's a lot of respiratory problems and lung problems that's just as bad as if you had cancer. I'm not saying cancer's not bad, 'cause I know that's bad and I feel sorry for people that have it. But I also feel sorry for the people that are turned down because they don't have cancer.

And he was a faithful worker down there. He worked 21 years down there, and they should have given him protection. These men that were working inside of these dangerous areas, they had proper clothing and they had masks and they had gloves, and they had boot things over their shoes. Ray went through all these. He -- he

turned doorknobs. He went through these areas and with no protection, not even a mask, just a shop coat like a doctor wears, a shop coat, as though that was going to protect him.

And then he comes home with these same uniforms on, these same shoes that he tramped all over that plant with in areas, and I had to wash his clothes. And he told me, don't handle my clothes. Take something to pick them up and throw them in the washing machine 'cause they could have a lot of that contaminated dust and stuff on them. And -- well, I ended up with breast cancer, but I mean that was my problem. I didn't figure it was -- I mean I don't know what caused it, but anyway, could have been from some -- handling a lot of his clothes, who knows.

But anyway, I think it's a doggoned shame that they're letting a lot of these workers go without any compensation. And they're -- they're just as sick as people that's got cancer, but yet they're not recognized by the health -- Energy or Labor because it wasn't lung cancer.

My -- the man that did -- or pathologist that

did the report of his autopsy, he saved his lungs for a lung study, and he -- he sent it not only to him, but he sent it out to three or four other pathologists to get their idea on it, and they all came back with the same report, a toxic substance caused his scarring, burned his lungs up, from something that he inhaled.

So I've been waiting now five years for compensation and they keep saying oh, you'll -- you'll probably get it, you'll probably get it. Well, I'll probably be dead. I'm 75 years old, and I can't wait forever on it. So I just hope you can do something that somebody else can't. Thank you.

DR. ZIEMER: You've reflected -- you've reflected some frustrations that actually probably would ultimately need to be addressed by legislators since, for example, this program is -- as you say -- is very specific in terms of the disease that it addresses. The remedies that are often needed are legal remedies, and hopefully some of the Congressional people who may be here tonight will hear that. So your point is well made. Thank you.

Don -- I'm not sure if the last name is Foy or if I'm just seeing part of the last name. It's either Don or Dan, I believe. Is there a Don or Dan Foy or Roy, anything close? I'm -- I'm not able to read the middle part of this. It's either a middle name or the first part of a last name that I cannot decipher. Are there any Dons here that think they signed the list? If not, I'm sorry, I'm unable to read it.

Okay, let me skip ahead. Maynard Wise? Okay. Donna Earlman?

MS. EHLMAN: (Off microphone) Ehlman.

DR. ZIEMER: Oh, E-h-l, okay. I'm trying to read these writings. They're all different. Thank you.

MS. EHLMAN: My name is Donna Ehlman and I'm here speaking on my father's behalf and my mother's behalf. She's up here. I've heard these stories before. I know a lot of the people that have been talking. I was down here last year speaking on my dad's behalf. I'm very thankful that he's still living.

He worked at the Destrehan plant from '52 to 1958, and then from '58 to '63 at the Atomic Energy plant at Weldon Spring. He also, just

as this lady's father, wrote a letter because he really didn't think he would be here. He's been living the last five years, probably should have only lived two and a half years but he's defied medicine. He's had a lot of good care from my mother. But his lungs shut down on him five years ago and he was on a ventilator for a long time. And he wrote this. (Reading) I worked in the breakdown area picking up shells with a hoist. We would take the cap off with the shell laying in a cradle. Then we would cut the lime-lined shells out of the shell with a jackhammer as far down to the derby as we could. Then we would up-end the shell with a hoist and hammer on the sides and bottom of the shell until the derby or the ingot of uranium fell out.

The next operation was to break the lime off with hammers until you had a fairly clean derby, about seven or eight inches in diameter, five inches high, weighing about 95 pounds. Some derbies had a black oxide form on the bottom, and when we would slide them on a metal roller conveyor they would catch fire. If you didn't clean it off, it would burn all day.

Most of the shells were not being cleaned good enough, and I submitted a suggestion for a better cleaning solution and got $25. It was a pretty good one.

I don't recall how long I was on that job, but following that I was put over in the refinery operating the metal dissolver. It was a very dangerous job working with scrap uranium from the blowouts, which was a fine material, very dangerous because it dissolves very fast. The larger the chunks are, the more solid and slower they dissolve. Fork truck drivers would bring predetermined loads to me on wood skids. I'd load them on stainless steel baskets into a tank of about 10,000 gallons. I would close the lid and start the acid spray over it.

Too much fine material would cause a reaction. The lid would raise up and the fire would puff out. If that ever happened I was supposed to open the flood valve with water and it would sound an alarm to evacuate the refinery.

One Saturday morning material was set up for me, and it looked like too much fine stuff at one time. My lead man said run it. When the lid raised up four inches, it started belching

out fire, and I was scared to death. I turned off the acid, went down the ladder and flooded it. My lead man came out and said what the hell are you doing? I said I'm just doing what I'm supposed to do. Turned out my boss was off and the wrong material had been set out. No one communicated that to me.

I had been trying to get into the machine shop so I wasn't on that job much longer. I ended up running a taper lathe, various other jobs in the machine shop. I worked the 4:00 to 12:00 shift most of the time, and got a lot of experience working in the field with some good buddies -- Roger Aubachon*, Hank Padulsky*, Joe Mintier*, Frank Bogner* -- and his daughter's here -- Les White and Charlie Sheeley.

We all worked together tearing down blown furnaces, which were very hot. Sometimes we would only stay in there for 15 minutes, sometimes a half-hour. Other times we would work on dust collectors, cleaning the bags and putting in new ones. I can't say that anyone ever checked them out before we worked on them, but I believe they were very hot. We would often spend a couple of hours in the dust

collectors.
I remember when they drilled holes throughout the plant at Destrehan and told everyone they were checking for termites. I believe now, as I did then, that it was to check radiation levels because it was no longer safe.
There was a gentleman here who talked about the radiation levels in the floor and how when they poured the new concrete into the floor that the radiation was penetrating that, as well.
(Reading) I believe that's why they built the Weldon Springs plant. I didn't go out there voluntarily 'cause I didn't want to drive the 75-mile round trip every day, but eventually I was forced to go or lose my seniority, so I had to go back into the manufacturing division because there were already enough people in the machine shop.
This time I went to work in the green salt plant. I had to operate the fluid beds on the very top floor. There were two vessels there where they forced hydrogen to react with orange oxide to turn it into brown oxide. The heat was terrible, 145 degrees.
The brown oxide was mixed with hydrofluoric

acid -- hydrochloric acid into three different screws, each one about 25 to 30 feet long. If the acid was added too fast, it would bridge the screw. Sometimes it was so bad the hydraulic pressure couldn't turn the screw. There were other times when the ribbons in the screw would break and a whole bank of furnaces would be shut down and the screw would have to be pulled out. It was a costly job and a lot of work. A couple of good panel operators could control the green salt by speeding up or slowing down the screws, but the jobs were always hazardous. We wore gloves, hardhats and goggles.

When I went back to the machine shop I was exposed to many other types of contaminations working on the bullard lathes.

I think this lady over here talked about those. My dad said (reading) they would cut off -- cut a curl off a 4,000-pound ingot of uranium. The chips would fall into a basin around the chuck, which was continually being flushed with water-soluble oil, but it would still ignite and turn cherry red.

I changed the dies in the extrusion presses.

They would be burned black with a hard crust on them. I would straighten the mandrels and they would be black. It seems to me that anything in contact with uranium a certain length of time would turn black, and I think that the black oxide that forms is very hot.

We were always packing pumps, changing and repairing machinery in areas where we had to have rubber boots, gloves and goggles on. I remember going to take out the packing on a few pumps, which was only referred to as "a place across the street" -- this was down at Destrehan. When we went through we had to neutralize our tools that we had used and throw them in a barrel. After that they were put on a raffinate truck and hauled out to the airport dump. It must have been really potent stuff.

I know that some of these observations and opinions may not be completely accurate, but I believe they should be told. I believe it's possible -- I believe it's probable that the airplanes flying over the raffinate dumps at the airport may have been picking up radiation, and that that is why they wanted to move operations to Illinois. That's probably a

little exaggerated, but I've thought about this for years.

One thing I do want to bring up is my concern that for years they have hauled waste through St. Louis with no thought for public safety. They tore down the Destrehan plant and hauled it out Highway 70 to 94 and dumped it into the quarry. After that they cleaned up the Brown Road site and hauled it out.

The next site was the pit or lake that had some good material on the bottom. Somebody wanted to reclaim it, and they wanted to pump the water into the Missouri River. People in St. Charles County got wise and wouldn't allow them to dump it into the river for fear of contamination, but I think it was done anyway. I think the Department of Energy knew that they were in trouble for dumping in the river. Finally they made a place on the Weldon Spring site for storing waste. They built a new road from the quarry to the storage site that eliminated the well-traveled Highway 94 route. I don't know what all is completed, but I think they finally monitored the water and pumped it into the river.

I believe the workers and the public have had the wool pulled over their eyes for years. Now after 50 years they want the workers, who are 50 to 60 percent deceased, to go by their rules and regulations for compensation.

I worked hard as an employee of Mallinckrodt Chemical Company, as did many other people. My illnesses began after I was laid off. I've had several heart attacks when I was 45 years young. I worked as a machinist after that for 29 years, but have always had problems with my legs and feet from the day that I started.

I've had quadruple bypass, a second bypass surgery, a cholecystectomy, colon cancer, prostate problems, and most recently suffered Adult Respiratory Distress Syndrome and was diagnosed with pulmonary fibrosis, years after I had stopped smoking. I was on a ventilator for three and a half, four months, to breathe. He's had a long road to recovery, and he's still very debilitated or he would be here to speak for himself, I'm sure. He can't -- he says he can't prove that this was all caused by radiation exposure, but he has many -- he has a stack of medical records, out of this world, to

support his claims. He's had good care from his wife, doctors and nurses, and without God, I don't think he would still be here to write this so that I could tell you of his experiences.

But I think that people are really getting tired of the wait. I understand it's not your problem, but look around the room. Just look around the room. These are not people who were working at the Destrehan plant in the '40's. These are people who have worked there after that, and out at the -- out at the plant. Take a -- has any -- has anybody here been out to look at the -- at the site at Weldon Springs? The money that was spent to bury what was left of that plant and the teardown is unbelievable. I've been out there and I've walked to the top. And I'm telling you, you don't make a grave for something like that unless it's dangerous. Thank you.

DR. ZIEMER: Next the Hanak family -- Hanak? H-a-n-a-k, perhaps have left. Let me continue. Debra D-e-t-- I'm having trouble reading the rest. This is office -- oh, this is the Congressman's office. This would be Debra --

Debra Dornfeld?

MS. DORNFELD: I don't want to talk, that's okay.

DR. ZIEMER: Okay, Debra.

MS. DORNFELD: I don't need to talk.

DR. ZIEMER: Bernel Hower -- Howrer, H-a-e-r-e-r. Thank you.

MR. HERRER: Bernel Herrer.

DR. ZIEMER: Herrer?

MR. HERRER: Yes, sir.

DR. ZIEMER: Herrer, thank you.

MR. HERRER: At the age of 21, just fresh out of the military, I was seeking un-- seeking employment. I was hired by -- at Weldon Springs in 1959. I was employed till 1966. During that period of time I worked in the metals plant, sampling plant and the refinery. In the metals plant there wasn't a job I guess that I wasn't trained on. Some of the folks that have spoken before me that repaired the furnaces, well, I cleaned up after some of the blowouts in the furnaces. I worked in the breakdown area. Some of my good friends are no longer with us. Charlie Bradensteiner and I, we used to work in the breakdown area, worked

in the slag plant, and naturally the dust problem was quite severe, even though we wore small -- we called them respirators, but they really didn't amount to too much.

When the crucibles and the furnaces had a blowout -- what we called a blowout -- there would be dust floating around in the metals plant from the front to the rear of the building. And unless you were close to it, you didn't even wear a respirator, you just -- you weren't asked to, you weren't told to.

Fortunately I'm still standing here and able to talk about it, even though I've had two tumors removed, one off of my jaw, one off my back. I've had three stints. I've had an abdominal aortic aneurysm which was five centimeters, and I have reoccurrences with bronchitis.

1970 I married my bride, and I informed her -- after we were married, I didn't tell her before -- that -- I said look, I've made a decision, we're not having any children. I don't want to take a chance, after hearing some of the horror stories and witnessing some of my friends that had children that were born with heart defects, blind in one eye, and similar things.

So these are some of the things that fortunately (sic) we trusted our employer to keep us safe. Fortunately (sic), maybe we shouldn't have trusted them that far. But I will trust you folks to do everything you can to get this handled and to the people that really need the help. Please work for them and try to get this resolved. Thank you.

DR. ZIEMER: Thank you. Kimberly Smith Asfari* or -- am I close on that one? I'm having a little trouble reading the writing. Kimberly -- from Mallinckrodt downtown. No? Billy J. Smith? George Allen?

MR. ALLEN: (Off microphone) I already spoke --

DR. ZIEMER: Yes --

MR. ALLEN: -- (unintelligible).

DR. ZIEMER: Yes.

UNIDENTIFIED: (Off microphone) Would you start over, please?

MR. ALLEN: Thank you. I didn't come prepared tonight to speak. I didn't believe I'd be called on so I didn't come prepared, but anyway --

DR. ZIEMER: Somebody put your name down.

MR. ALLEN: Yeah, I did --

DR. ZIEMER: Okay.

MR. ALLEN: -- when I came here, but I didn't realize that I would get called.

Anyway, you know, I've got a copy of my father's security termination agreement from Mallinckrodt dated October 28th, 1957 that shows that most likely he had to enter the -- the processing areas or other top secret areas of the Mallinckrodt plant. What I've got in my hand is his employment file. Getting this employment file was like pulling teeth. It didn't come easy. Finally a vice president of legal at Tyco gave it to me after I really raised a stink about it.

Two years later my sister found out about this program and tried to get my father's employment file, and Mallinckrodt told her that he never worked there. Luckily I already had it.

What was in this file, though, was interesting. There -- I asked -- I asked this vice president of legal at Mallinckrodt what about the dosimeter badge readings from working at Hematite, from working at Weldon Springs. And I was told that all this information had been scooped up by the Department of Energy and --

on several years prior to that and that it was locked up somewhere, and I couldn't see it. All my father's medical records were destroyed. He died in 1991. This was in 2001. Ten years later, they're all gone, couldn't find them. My father's employment record, it shows pay increases. It shows some conferences he had, but not once in here does it show what he did for the company besides being assistant comptroller. It doesn't show anything about working at -- at Hematite, which the DOL has now certified him as working there. It doesn't show anything about Weldon Springs. It doesn't show anything.

And when I filed this claim, it was a couple -- a year or two later after we filed it, we got a determination from NIOSH. The NIOSH determination was based upon background radiation at the Mallinckrodt plant. And the amount of radiation they said he received was below the threshold to cause the cancer that he died from when I had a signed affidavit in the package from the comptroller of Mallinckrodt that my father had done inventory at Hematite and had handled this material on a monthly

basis. And this wasn't even included. They -- they just based their determination on the background radiation, which was based upon the background radiation at a similar plant, not even on the actual Mallinckrodt plant.

I was irate, to say the least, when I got this. I phoned NIOSH. I phoned the Department of Labor. And a couple of days later they called me back and he said oops, we have a flag in your file. We need to do another telephone interview.

I did another telephone interview. Then they sent me a letter saying that they were going to -- starting the dosage reconstruction process over again. This'll be the second one. The first one took what, a year and a half, two years? You know, this -- I'm -- we're on the second dosage reconstruction now because they decided that he actually was a Hematite employee, as well as a Destrehan Street employee. And this is just taking forever. Thank you.

DR. ZIEMER: Thank you. Dan Meklovich* -- Meklovich -- close?

MR. MEKLOVICH: My name's Dan Meklovich. I'm

here representing my sister, Patrice Solomon, and myself. My father was a 34-year employee of Mallinckrodt, despite the fact that they say he never worked there, and I have documents, you know, that mention his name in the Mallinckrodt magazine and everything. Like so many of the other stories here, it's clear -- I'll defy any of you on the Advisory Committee to reconstruct your caloric intake for February 8th, the year 1994. How many calories did you ingest yourself ten years ago today? How -- you can't do that. Given the absence of these records, you're asking strangers to do dose reconstruction on people whose jobs they didn't do, they don't understand, and more importantly, the records have been either inadvertently, accidentally or purposely destroyed.

I have a degree in electrical engineering with a minor in nuclear engineering from the University of Missouri at Columbia. I know that the exposure that people receive in roentgens and all the other measures are real, because in this magazine it says I also worked at Mallinckrodt as a co-op student in the

'70's. I saw what my father did. I saw what these other people did. I worked with Frank Bogner. I know what these people did. The injustice is not Mallinckrodt losing the records. The injustice is not going to be the fact that they were lied to, because back then we didn't know. When I was there in my twenties working at Mallinckrodt, and studying this at school, I didn't know, and I was a student of about the dangers of nuclear engineering. The crime will be if you don't grant them Special Exposure Cohort status because you're asking a dose reconstruction committee to do the impossible. That's the issue, is it can't be done. You can't do what you don't have records for. You can't ask people to reconstruct doses when they don't even know what these people did for a living. Thank you.

DR. ZIEMER: Thank you. Larry Nolte? Then Terry Mauzer?

MS. MAUZER: Hi, my name's Terry Mauzer and I worked at the Hematite plant. The reason I'm here to -- for my comments to this committee is hope to expand the time frame from the opening

of the plant in 1956 to the closing of the Hematite plant in June of 2001, simply because I don't know where to start to bring the attention to the Hematite plant in Missouri.

I was employed as a radiation worker from February of 1995 to the closing of the plant in June of 2001. I had several positions within the company. My first exposure to hexafluoride, UF-6, was in the production and assembly plant. In this process the UF-6 cylinders were turned from a gas form to uranium-enriched powder to form what was known as green pellets, which were then used in enriched -- sorry -- used in the plant -- I'm sorry -- placed in the millennium boats on an incanel* tray. They were then placed on ramps to enter what was known as a dewaxer furnace. The plant -- pellets then went through three temperature zones. They would burn off any impurities, causing a poof of smoke on regular -- on a regular basis. The poof would emit fumes and radium -- radon particles into the air in which we as an operator were constantly exposed.

Also the plant would -- planter end, which this

area would be so contaminated with residual contamination that we'd have to clean constantly just to keep the residual contamination that we would have to -- to keep your dac* readings down, I'm sorry. This was a very dirty and nasty job. Usually the only protective clothing we had on were very thin cotton liners and also rubber latex gloves we used every time to -- every time -- God, I'm sorry -- every time -- every type of protection to try to keep from being exposed to the radon particles, but it was basically a no-win situation, so imagine if you can the horrific experiences as operators we had to endure on a daily basis just to keep the production going. The pellets then went to a centering furnace in which the same basic concept as the dewaxer except in the process the pellets would go through a chemical change to cause the pellets to ceramatize. From there the pellets went to another operator in which they would dump the pellets into the machine, which then shook the pellets, causing a cloud of powder to encircle the operator, causing them to get dangerously high readings. I find this to have been a very

dangerous step to the fact -- due to the fact that 90 percent of all of our equipment was so old and outdated. We took a chance, first of all, in safety. Also we were endangering our lives on a daily basis to get the production out the door. As one supervisor had said to us all -- it's all about the numbers, not taking in consideration for their workers.

From this point the pellets were being ground to meet certain guidelines for NRC and customer standards. The pellets would then be placed back into another -- a millennium boat, then transferred into -- onto a cart. While in transit some of the residual contamination would fall onto the table, causing even more exposure to the radon dust particles. The pellets were once again dumped onto a work area known as the shaker table. This would cause the pellets to chip and display a very, very thick dust on the work area. The pellets, while being shook, were -- formed -- would form a very visible cloud in which the operator was exposed to airborne particles on -- in order to align the pellets on a pre-cleaned tray in order to prevent cross-contamination expos--

and exposure to the dust particles.
From there the pellets would then be pushed from the tray for inspection of any of the defects or for the correct enrichment. In this process the operator would use a rolling table which would turn each roll of the pellets one-third circumference per rotation in order to get a complete and true inspection. The operator would slide the pellets back onto the tray. Keep in mind the contamination would still be at the work area, causing exposure to the dust particles once again from this point.
The operator would then transfer the trays onto carts to be sent to a cardex* machine. In this process the operator would load the pellets into a deep pan to then have the pellets go through a bulk dryer. In this process the pellets would be held in what was known as a bay. The bay would -- kept it at a certain temperature in order to be sent to the rod line assembly process.
I can remember several times the bays would get jammed, and as an operator were once again told to solve the problem, so the operator, following instructions of management, would go

into the equipment, un-jam the bulk dryer, not even realizing dangerously high levels of alpha, beta and gamma radiation they had been exposed to in order to keep production flowing. Once the pellets went to the rod line they were then placed into the rods in which they would eventually go to an off-site reactor which was used in the process of making electricity.

Also some of the operators were required to do what was known as a core sample. In this process the cans of pellet or pow-- powder would be placed into a hood on a calibrated scale in order to get approximately 25 grams of powder or pellets. An operator had to use a thieve (sic) to get a true homogenous sample and the powder and pellets would be placed into a plastic vial, securely closed. This procedure would cause a high radiological exposure, I'm sorry, and then the sample would be sent off to our lab technicians for analysis to find the true U content.

I had then worked in the recycle recovery department. In this department I have been exposed to an oxidation reduction and pyro runs. In this process the pellets and material

would be changed from its original form using different types of chemicals such as ammonium hydroxide, caustic soda, potash and green salts to cause a chemical change in the components, causing the product to change its chemical form to make uranium isotopes of U-235 and U-238.

In this particular department not only was I being exposed chemically, but I discovered I was being exposed to residual contamination from the Mallinckrodt, which was -- which as 19 -- 97 percent uranium dioxide from the previous years of ownership. We were also required to -- to bathe, drink and wash our hands in water that little did we know would be tainted with technetium.

I have stated several ways I feel I have been ex-- I have been exposed to radiation. Pellets and dust were constantly lying on the floors, tables and in hoods. Around filter banks we were told to clean up the material several times per shift. We used cotton liners and latex gloves for personal protection. It was a joke. The contamination materials would go through the gloves into our skin. We also wore white coveralls to protect our bodies from

exposure, but this thin cotton garment as useless for any type of protection. We were also required to wear lapel monitors, dosimetry badges, which another ridiculous form of protection. Although we were required to wear a special breathing apparatus, 75 to 80 percent of the time the batteries were dead due to the improper protective gear. I know I was highly exposed to the radiation emitted from the pellets and the dust particles.

When my lapel monitor was working I would come up with a high U count. This would happen many, many times. I'm certain at these times I was highly exposed. I have been exposed to fumes and such a gray -- a thick gray cloud of smoke while attempting to retrieve my full face respirator from health physics. Please -- what is wrong with this scenario. I have been -- I have even suggested that it would be a good idea to place the masks in our department so we wouldn't have to walk through the fumes and contamination to get the mask that is supposed to keep from receiving radiation exposure. From supervisor to upper management, no one would listen.

One day two of our coworkers were changing out a filter bank while their protective gear -- one of the employees was removing the filter when they discovered an abnormally huge amount of contaminated powder. This was considered a criticality because there was over 35 kgs of powder, which is an over-permissible exposure limits. We were all highly exposed to the radon molecules. I'm sure there are many more instances in which we were all exposed.

I'm 25 -- I was 25, engaged to be married in 1995. I had been diagnosed with cervical cancer. T his was a very devastating -- to me. I had thought I had a great job and a future, to only have my ability to have children taken away from me to have a complete hysterectomy. To me, the nature of -- nature -- natural end of childbearing years is -- in a woman is menopause, not hysterectomy.

These cases I've cited are the ones I'm aware of. I'm convinced that there are many more that haven't come to light. There are many former employees who are of childbearing years, both men and women. To what extent with their repercussions of working at the plant represent

itself in offspring to come. We wonder why no one is even acknowledging the Hematite location when we have just as many illnesses and deaths. In all my research I have no -- found no information that anyone is doing anything to help the community and the employees who desperately need the help in getting the time frame changed in order to receive the compensation for all we've been through. Thank you.

DR. ZIEMER: Thank you. There's just a couple more, folks. I know it's getting late, but Judy Shanahan? Is Judy still here? Judy.

MS. SHANAHAN: Here's a picture of my family. I'm 52 years old and I'm one of five children. My mother, widowed for the last 46 years, is 88. A few weeks ago my husband told me about a group that was meeting at the Columns. It was the survivors of -- it was for the survivors of cancer victims who had worked at Mallinckrodt Chemical Company. Little did I know I was in there for the shock of my life.

Denise was great. I was glad to have here there with me. Until this time it was my understanding that my father had died of

natural causes, if that's what you call it -- call cancer of the colon, stomach and intestines. I had no reason or cause to believe otherwise. It's what we were told. We were ages five, six, eight, 11 and 12. Mom was 43, Daddy was 46. For over a year before he passed away he was home in bed sick. We were seldom allowed into his room. We had to be very quiet when he was sleeping. My brothers, sister and I were regularly sent to visit relatives and friends that year. The two older boys, Ken and Jim, stayed at home to help Mom.

My brothers remember Mom having to help Daddy walk around the house at least once a day to prevent bedsores. He was in a tremendous amount of pain. Mom had to give him shots of morphine. Due to the pain and the morphine he changed from a gentle, loving, kind man into someone he himself loathed. He was frantic, knowing he was leaving his wife holding the responsibility of raising five children. He felt he was personally responsible for all that had gone wrong, and that he was a failure in his life, letting down those he loved.

During this time Mom enrolled in night classes to renew her teaching certificate. She already had a master's degree in education. On top of taking care of a dying husband, five little children, she had to plan for our future. My mother did not want friends, his mom's parents, hers, siblings or any other relatives to know the seriousness of his illness. My mother agreed. They did not want the intrusion of others making suggestions on how they should deal with it, or their pity. He wanted to live out his life as best he could with his wife and children. Any good hours of the day he wanted to share with them.

He felt a terrible guilt about leaving Mom with five dependent children. He believed that he had failed those he loved. It was all his fault that their lives were going to be terribly difficult.

A week after Daddy died, Mom began her search for a teaching job. Several schools turned her down. Many told her a woman with five children couldn't possibly hold down a job. The superintendent of Ritner* school district thought differently. He thought a woman who

could look for a job a week after burying her husband was someone he could take a chance on. She was hired, and taught English for over 25 years.

Knowing she couldn't just get up and leave five children home alone to get off to school, she hired someone to come in each morning. Her name was Mrs. Crider. She came in, made us breakfast, packed our lunches and got us out the door. It was the responsibility of the oldest sibling to get the younger ones to school and back.

A friend of Mrs. Crider's asked why Mrs. Shwiller* never got married. After all, she was pretty, well-educated and very smart. Mrs. Crider told her yes, she is very pretty and intelligent, too. However, only a crazy man would marry a woman with five children and Mrs. Shwiller wasn't going to marry a crazy man.

My Grandpa Bud put all five children through college during the depression. Four of his children were girls. There's a story that Grandpa's friends would often criticize him for sending his girls to college. They said George Buck, why are you -- what are you, crazy? Why

would you work to send all those girls to college when they're just going to get married and have kids. Unwaveringly and sincerely, Grandpa would answer, "And I couldn't think of a better reason to have an education."

Thank God for Grandpa's wisdom. Without Mom's education we could have never stayed together as a family.

Daddy was a cost accountant for Mallinckrodt. He worked there from 1937 to 1958. Last week while looking through my mom's records, I found a manuscript he had prepared on the chemical industry for publication to the National Association of Cost Accounting. The instructions for 'paring (sic) this document included a guide stating, and I quote, In deciding on the type of manuscript which will have the greatest possibility as a publication and earn the greatest credit in the Stevenson* trophy competition, you should include actual case studies of how we do it, articles dealing with specific experiences relating to any phase of manufacturing.

Upon reviewing my father's manuscript one could see that performing his duties as a cost

accountant for Mallinckrodt he was clearly required to frequently visit the physical plant where the chemicals were being processed. Our brother can -- my brother can remember Daddy was sometimes so red and swollen -- no doubt from radiation exposure -- that some days he couldn't even get his pants on. His doctors told him it was 'cause he had a skin irritation. Put some lanolin on it. This was long before he was actually diagnosed with cancer.

You'll be happy to know, however, we -- I found another letter stating we have been 'vised (sic) by the national headquarters that your manuscript entire develop a material control program in the fine chemical industry has earned 80 points. Congratulations, you are now the second-highest in points in the St. Louis chapter. I guess I should be proud.

My mother kept great files, many of which, until the last couple of weeks, I had never seen. Allow me to share a few clips from letters I have been reading. In a resolution passed by the board of directors from NECA, Kenneth Shwiller served on the board for eight

years as director of the meeting and a general member of the board for 14 years. He had countless friends throughout the United States because of his jovial personality, optimism and the spirit of cooperation. As a formal expression of our affection, love and esteem, we shall miss the able counsel and admirable personal qualities, but his memory shall abide. Quote from a church newsletter written by the choir director, Kenneth was the ideal choir member, perfect tenor voice, fine choir background, excellent attitude and an interest that went beyond Thursdays and Sundays. We will all remember his quiet wit and chuckles, his great kindness towards everyone. I particularly shall remember how he gazed heavenward when I would ramble on and waste time. My muddled mind fails to grasp the reason for taking a man at the height of his life from a wonderful family who needed him. A letter from a minister to Ada and his children -- her children. Death is like an ocean. It is too big to see across. No matter how we strain our eyes to look across the waves, we cannot see land. Even the greatest

scientists with the finest telescope gazing out across the water for days and days can't see the opposite shore, and might shake his head and say there isn't any. Daddy is gone but Mother is still with you. You are fortunate that God has given you such a brave, courageous, loving mother to guide you and help you through the days to come.

The newspaper article carrying his obituary, it states, vice president of the National Association of Cost Accountants died at his home after one year's illness. Cost accounting department for Mallinckrodt Chemical Company. Survivors include wife Ada Buck and five children.

Directly above his obituary was an article titled Examination for Cancer Can Stop Worries. It states waiting helps no one. Examination is the only answer. If all exams are negative, everyone is relieved of worry. If something is discovered, early treatment will mean a cure.

I just wonder how my mom felt when she read that article placed directly above his obituary.

Mom kept all the letters and cards and flowers

she -- and flowers she received. She kept a record of the thank you notes she had written. They totaled 118 cards. Can you imagine grieving for your husband, taking care of five children, looking for employment and finding time to write 118 cards? Unbelievable.

Mom never remarried. She told us she already had the best, even though it was just for a short time. She had five children to take care of, and didn't have time after Daddy died, so the -- oh. After Daddy died, so did the demonstrative side of my mother. Until recently none of us had ever heard her tell us she loved us, nor did we see warm hugs. However, we never questioned her love for us. We always knew she did.

Daddy had two wishes when he died: Keep us all together as a family, and secondly, put us all through college -- tall orders for a widow with five children, but you (unintelligible) mother. Three of her children graduated from college. Ken has his PhD. at Buena Vista University and is the dean. Jim has his undergraduate and is the owner and publisher of a magazine called "50 or Better" in Kansas. Jane, like Mom, has

a master's in education and teaches students with special needs. My brother Paul is a mailman, and I went to Stanford* Brown Business College and hold a position of executive assistant to the president of Lynwood*. My mother fulfilled a dying man's wishes.

After the meeting at the Columns I had to tell my siblings what I had learned. They all live in different states, so I had to do it by phone. Those were the hardest calls I've ever made. To learn and pass on that your father, whom you believed had died naturally, was in fact stolen from you is tragic. To have to pass this sadness on to my siblings was heartbreaking.

Denise asked me to represent my family today. I asked my brothers and sisters to tell me what they wanted to share. Here are their comments.

Many soldiers were killed in combat. Others making a bomb. It's as though he was there.

Ken told me -- Dad talked to me a lot about taking responsibility. He would get angry with me for not being responsible enough. During that time Mom told him they were in a partnership. Ken was the oldest and she needed

him to share the responsibility of taking care of the other children. When she had to go to the grocery store, she told him he was in charge. His reaction -- oh, my God, I'm in charge?

Jane said hearing the news was like Dad had been taken away all over again, only this time he had been killed through negligence and ignorance. She had accepted it, but now must learn to accept it all over again, but in a different way. Like me, none of us can even think about it without hurting. This is not something you want to relive.

Jim remembers how Mom -- how he could hear Mom crying and -- not sobbing, almost wailing late at night when she thought we were all sleeping. He didn't have any idea of what to do to comfort her. He also remembers going to talk to Dad and seeing Mom inject him with morphine, and then having to help walk him around the house, screaming in pain.

My youngest brother, Paul, really doesn't remember him much because, like me, he was too young. He is devastated to learn that we didn't have to lose him. We could have had a

father all these years. His wish is for all of us to sit down and share what we know. That is something we've pretty much always avoided doing. It hurts.

I remember very little. I would be better off telling you how it affected our lives. Daddy put himself through business college. He made a pretty good salary, and I'm sure our lives would have been much different in so many ways. Mom had to go to work full time to support us, and we lived very frugally. Mom was good at stretching the buck.

My uncle worked for Pet Milk Company and supplied us with all the powdered milk you could ever want, and more. You wouldn't believe what you could make with powdered milk. I could do a testimonial. I could tell you what was under the Christmas tree every year of my life growing up. My older brothers jovially called every year the Fruit of the Loom Christmas. We went to the Muni Opera on summer nights and sat in the free seats. There were programs at the art museum that were free and Mom would take us there often. We were all scouting -- in scouting, youth sports, but

church was the most important part of our upbringing. All five of us have been confirmed. We attended Sunday School and church every Sunday except occasionally when my brothers skipped out and went down to the donut shop until the minister caught them.

Mom loved us all, treated us all as individuals, but equally. She supported us and did all she could to make a good life for us.

When I graduated from high school my boyfriend asked me to marry him. As tradition would have it, he had to ask the parent. He did. Mom said no. She told us that Daddy's dying wish was for us all to go to college. How could I argue? I believe that was the one good thing caused by Daddy's death. I didn't marry my high school sweetheart.

I met the most wonderful man in the world, and from what I know of my father, he mirrors him in many ways. For that, I'll be eternally grateful.

When I was 29, newly married, living in Chicago, my husband and I decided to move back to St. Louis. I knew my relationship with my mom had to change if I returned, so I went and

saw a therapist. You see, at 29 I had never really put my dad into his grave. I carried him with me all the time. All I had to do was think about him, and it would bring tears. The therapist said let's do some role-playing. I'd drive back down to St. Louis, and I can remember one time sitting on the back porch with Mom and asking her, what traits of Daddy's do I have? Her response, none. I cried all the way back to Chicago. I knew that her response was not in any way intended to hurt me. It was truly the only response she could give. I left not angry, but terribly confused. I visited my Aunt Patty and upon return to Chicago we sat on the rocks looking out onto Lake Michigan. She relayed to me the traits that I possessed of my father's. My heart filled with warmth and I was at peace. She told me it was too difficult for my mom to express these types of feelings, or bare her soul in such a way. After this I was able to bury my father, knowing I carry him with me, and I began understanding my mother and appreciating her in a whole new way. Today we have a wonderful relationship.

We have been robbed. My father was taken from us, not by natural causes, but by a chemical that Mallinckrodt Chemical Company needed to produce for our country. And by the way, Daddy joined the Army after Pearl Harbor, but was released as unfit for service almost immediately because of something odd about his back. So he joined the Navy and was six weeks into basic training at Great Lakes when the Navy doctors discovered the secret. Isn't it ironic that in a way he did give his life for his country, but instead of perhaps dying an almost immediate death on a faraway battlefield or at the high seas, he had to suffer over 400 pain-filled nights and days, knowing his health was gone and he, too, would die soon.

Little of Daddy I really remember. Most of what I know is through the eyes of others. He was a kind man, a religious man who came home from work and hugged his wife and children. He made sure we said our prayers before dinner and at bedtime. In his final year bedtime always included a reminder of Christ's love for us. He had a beautiful voice and loved to sing. He was a fine athlete, winning many amateur tennis

tournaments. He was the catcher on the Mallinckrodt softball team. He was a gentle man who was loved by many. Having him die once was awful. To know that he was stolen from us after all these years is worse than I can ever begin to convey.

Mother lived frugally and saved as best she could. These days she suffers from dementia and can no longer live alone in the little house where we all grew up, the first and only home Mom and Dad ever bought, the same place my father died. Four weeks ago we moved her into a retirement home and her mental health took a dramatic downward spiral. We must now move her to an assisted living facility. She exists on Social Security and retirement funds from her teaching years, and has only a small cash reserve.

Our mother is a proud, independent woman. The thought of possibly relying upon her children to pay for her care is devastating for her. The funds to which she is entitled would remove this enormous financial burden from my mother. She would be able to independently afford the type and quality of care she needs and truly

deserves. It would give her the financial stability she has never had due to her great loss. I certainly hope those in control of these funds will expedite the process for all the survivors. It would be an inconceivable tragedy for her to spend the rest of her life worried about her finances, when her relief is tied up in the red tape of government.

Death is truly like an ocean. It is a bottomless sea of pain with waves of emotion. Only one can imagine what is on the other side of this vast emptiness. The other day Mom asked me where is Kenneth? Why did he leave us? Can anyone here please give me that answer, because I'd like to know. Thank you.

DR. ZIEMER: Thank you, Judy. Very well-stated. Frank Tyndale. Is Frank still here?

MR. TYNDALE: Howdy. My name's Jim Tyndale.

DR. ZIEMER: Jim? Okay, Frank --

MR. TYNDALE: Jim. Yeah, Franklin's my official name. Jim's what everybody calls me by.

DR. ZIEMER: Okay, gotcha. Thank you.

MR. TYNDALE: A little bit younger than most of the folks you've seen. I hired in at the

Hematite plant in '92, worked there until 2001. I'm going to kind of help out with a coup-- Mallinckrodt folks, hopefully. I remember one of the first jobs I had when I was there, they put me out in a pit about a quarter of the size of this room and they had it divided up into three-foot squares. And they said Jim, we want you to take an inch to three inches off of each square and we're going to test them and see what kind of radiation or anything we get out of them.

Well, they had me dig several of the squares to about waist deep, then they come out and said well, we're going to dig core samples, and they went down 40 to 60 feet and still found stuff down there. They said well, you're not going to do it with a shovel, we'll just come back and do it again some other time. It's still like that out there now. It's never been cleaned off so that's still there.

There's pipes that they took out of oxide and before that was done with the submarine fuel, the real high enrichment, that those pipes are still buried out there. And I listened to a gentleman speak about what they did with them,

put them in plastic bags with duct tape, and that's exactly what they did with them, put them out there. And it's still out there and probably not going to last the whole lifetime, you know, of everything. I'm sure it's breaking down and that's what's in the water out there now is why they've plumbed water all the way to the -- the Hema-- Hematite facility's kind of out of the way of everyplace else. It's, you know, three to four, five miles from the closest town and they've plumbed water all the way out to there because of the stuff in the water from the plant. So -- and then -- that's just kind of a couple things there about hopefully it'll help the Mallinckrodt folks a little bit that they're -- you know, it's definitely there. You could go out now with a backhoe and dig it up. They haven't moved it. It's still there.

About my job, like I said, I had the burial pits I dug up for them when I first started there, and then they put me on a job called the scanner in '93. And I don't think anything's ever been done as far as fully -- with the radiation, you know -- one of the jobs I had

doing that scanner was they had me change the source every 18 to 24 months. It's a californium source, we actually eraded (sic) the rod, the fuel pellets, up to whatever enrichment they were supposed to be. If it was -- we did -- we -- fortunately we dealt with much lower grade uranium than what the nuclear was. Ours was -- our max limit was five percent, and what we would do is actually with the scanner was enrich that radium up to whatever it was, and my job was to look at the reports and see -- make sure that if we had 3.5 percent there was 3.5 percent and not five percent or anything like that there. And like I was saying 18 to 24 months, we'd change that source in the back of it, and it was just -- this is a huge casket about nine -- eight, nine feet tall, round, filled with cement and lead. And whenever we'd do that about every 18 to 24 months, they would actually turn off the nuclear alarm and everybody'd have to get out of the building that I was in changing that. There'd usually be two or three of us in there changing this source. And they would say -- I asked them one time how come -- well, the first

time. I said how come you got a guy out turn off the -- well, we're afraid it's going to set off the nuclear alarm. You know, I guess you're young and stupid, you don't think about things like that at that age, but -- but at the age of 32 in '99 I was diagnosed with a real rare type of sarcoma cancer. And I don't know if you can prove anything from anyplace, but I drank the water out there. I was in -- pretty much an athlete. I didn't drink soda or anything like that there, I drank straight water 'cause I thought it was better for me, and I drank the water that come out of the plant out of the -- out there now, which they've said for all the surrounding homes and everything, don't drink it. You know, it's not safe.

But just a couple of those things there I wanted to bring up and say, you know, that it's still -- we would like to extend the time up because that uranium and everything is still in the ground, even from back whenever they did the high enrichment stuff and buried it in the ground. It's still in the ground. It's leeching into the drinking water and they're

plumbing in water. They've plumbed it in for all the surrounding homes and everything out there, you know. It's in the ground. Thank you.

DR. ZIEMER: Thank you very much. Now I also have Dan McKeel on the list. Dr. McKeel has addressed the Board a couple of times in this meeting, but Dan, you -- you have the mike again. You are the last speaker, Dan.

DR. MCKEEL: This is going to be very brief and it's about a completely different subject. I want to put in the record just another forgotten group of people. There were two people here tonight from the Thompson-Sterns-Roger group, and I want to tell you about a third. And I'm looking forward to the day when this Special Exposure Cohort status will be sought for all the other people at Mallinckrodt, including those folks at Weldon Spring.

But I wanted to tell you about 460 construction people, employees of Thompson-Sterns-Roger from approximately January 1968 to June 1969 when the Army Corps of Engineers from Kansas City and the Aberdeen Proving Ground Army crew

repurposed the Weldon Spring chemical plant for production of herbicide orange, popularly called Agent Orange, for use in Viet Nam.

I obtained a report from the Aberdeen Army group, which is in my packet that I gave to Dr. Ziemer, and here's what the description of the contamination was at Weldon Spring. Now this is after the plant had shut down and it was being cleaned up to produce Agent Orange.

So on page 39 of this report it says (reading) Contamination discovered in and under the concrete floor in the south end of building 103 was of such a magnitude that it was necessary to excavate six inches of old floor and pour new concrete, thus effectively masking the contamination.

Page 40, (reading) At the completion of the project, approximately two -- $2,800,000 had been expended for decontamination and dismantling of buildings 101, 103 and 105 to reduce the radiological contamination to acceptable levels. Even with these extensive efforts, none of the structures met the criteria for release to the general public when surveyed for alpha contamination in May '69.

Finally on page -- on that same page a little farther down, (reading) In building 103, the digestion and de-nitration plant, the contamination of the floor could not be brought down to acceptable limits, even after a partial removing -- removal and a coating of tar was applied to the entire area, and four to six inches of reinforced, high-density concrete was poured over the tar. The curbings around the floor remain visibly contaminated. The floor in the southwest corner of the north section could not be contaminated -- decontaminated, and a layer of tar was poured over the area as a temporary measure.

The person who I'd like to represent to you tonight is named Charles Reed. He is one of those disenfranchised TSR construction workers who worked in building 103 at Weldon Spring during 1968 and dug up those brick floors. He describes visible yellowcake, the uranium oxide lying beneath the floor. He describes workers picking up the radioactively-contaminated bricks with their bare hands, and not being told what the nature of yellowcake was, nor of its dangers to his health. He was not given a

respirator to wear, despite an extreme potential for dust exposure and inhalation of alpha particles. His exposure was the same as or greater than some of the Atomic Energy Commission MCW uranium division workers before 1966 when uranium production was still ongoing. Charles suffered severe skin and nerve damage to both feet and ankles in the absence of any co-morbidities such as diabetes or peripheral vascular disease. True, these radiation-induced illnesses were not EEOICPA-approved cancers, but for him they were still were and still remain extremely disabling ailments. Charles and his fellow TSR workers deserve to be compensated just as much as workers who developed their berylliosis or the 22 cancers -- any of those approved under the act under Titles B, D and E.

By Charles' account, his chest film badge dose could not possibly have been accurate. He, like many MCW workers, recount having their badges pulled, some days while they worked, so that excess doses would not be recorded. Their boots were not always cleaned or changed, nor were stringent steps taken to ensure that their

contaminated clothing remained on site.
There are many wrongs that EEOICPA could have partly addressed, but thus far has failed to do so. The original intent of Congress has not been adequately served. And I thank you again for coming and hearing my remarks and staying so late.

DR. ZIEMER: Thank you. This will conclude then our public session for this evening. I do remind you all that the Board will be reconvening tomorrow at 8:00 o'clock. There -- included in tomorrow's sessions there are public comment periods early afternoon and later in the afternoon.
Thank you all for being here tonight. You've been very patient. I know it's been a long evening, but we thank you for being here. I wish you all a good evening. (10:00 p.m.)
(Whereupon, an adjournment was taken to Wednesday, February 9, 2005 at 8:00 a.m.)

C E R T I F I C A T E OF COURT REPORTER

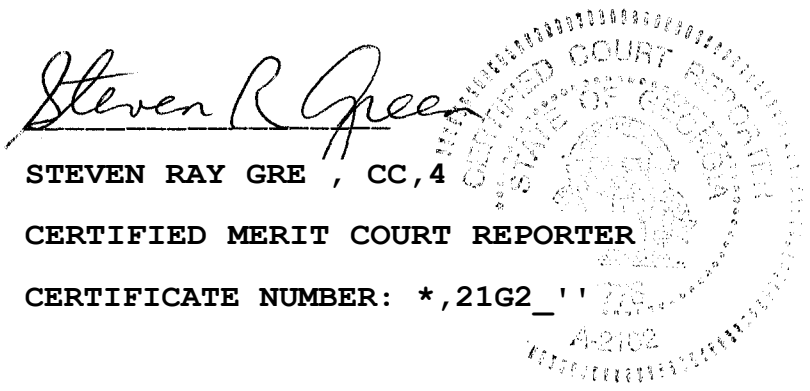
STATE OF GEORGIA

COUNTY OF FULTON

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of February 8, 2005; and it is a true and accurate transcript of the testimony captioned herein.

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

WITNESS my hand and official seal this the 2nd day of March, 2005.



STEVEN RAY GRE , CC,4

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