UNITED STATES OF AMERICA

CENTERS FOR DISEASE CONTROL

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NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH

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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

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73rd MEETING

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WEDNESDAY
NOVEMBER 17, 2010

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The meeting convened at 8:15 a.m., Mountain Standard Time, in the Hilton Santa Fe, 100 Sandoval Street, Santa Fe, New Mexico, James M. Melius, Chairman, presiding.

PRESENT:

JAMES M. MELIUS, Chairman
HENRY ANDERSON, Member
JOSIE BEACH, Member
BRADLEY P. CLAWSON, Member
R. WILLIAM FIELD, Member
MICHAEL H. GIBSON, Member
MARK GRIFFON, Member
RICHARD LEMEN, Member
JAMES E. LOCKEY, Member
WANDA I. MUNN, Member
JOHN W. POSTON, SR., Member

PRESENT: (continued)

ROBERT W. PRESLEY, Member
DAVID B. RICHARDSON, Member
GENEVIEVE S. ROESSLER, Member
PHILLIP SCHOFIELD, Member
PAUL L. ZIEMER, Member
TED KATZ, Designated Federal Official

REGISTERED AND/OR PUBLIC COMMENT PARTICIPANTS

ADAMS, NANCY, NIOSH Contractor
AGUILAR, DIEGO
AGUILAR, NAOMI
AL-NABULSI, ISAF, DOE
ARMIJO, ROBERTO, Hangar 481 Petitioner
BARELA, JOSE
BARRIE, TERRIE, ANWAG*
BEAVERS, DANNY
BONSIGNORE, ANTOINETTE, Linde Petitioner*
BRADFORD, SHANNON, NIOSH
BROEHM, JASON, CDC
BURGOS, ZAIDA, NIOSH
CRAWFORD, CHRIS, DCAS
CRUZ, RUBEN, CDC
DARNELL, PETER, DCAS
ELLISON, CHRIS, NIOSH
EVASKOVICH, ANDREW, LANL Petitioner
FITZGERALD, JOE, SC&A
FRATELLO, MELISSA, Senator Kirsten Gillibrand's Office*
FRAZIER, THOMAS
GALLAGHER TORZA, DOROTHY
GARCIA, MARGARITO
GLOVER, SAM, DCAS
HERRERA, ANNA
HERRERA, ELROY
HINNEFELD, STU, DCAS
HOWELL, EMILY, HHS
JACQUEZ-ORTIZ, MICHELE, Senator Tom Udall's Office
JOHNSON, RICHARD
KOTSCH, JEFF, DOL
KUNKEL, JAMES

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LEITON, RACHEL, DOL
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LUJAN, EUGENIO
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MAIVIGIL, CELINA
MAKHIJANI, ARJUN, SC&A
MONTOYA, PAUL
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MCDANIEL, GEORGE*
MCFEE, MATTHEW, ORAU Team
MCKEEL, DAN, Texas City Petitioner*
MILLER, MARLENE
MONTOYA, ROBERTO
MANTOYO, PAUL
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ORTIZ, DANIEL
ORTIZ, TOM
PRESLEY, LOUISE
RAEL, LOIS E.
RIVERA, YVONNE
RIVIRA, G.
RUTHERFORD, LAVON, DCAS
SALAZAR, BENITO, Hangar 481 Petitioner
SANDOVAL, FLAYMON
TAPIA, JOSEPH
THURBER, BILL, SC&A
TOWLES, GERALDINE
TRUJILLO, GILBERT
TRUJILLO, JOHNNY
TRUJILLO, MELISSA
TRUJILLO, RICHARD
WADE, LEW, NIOSH Contractor
WANGER, WILLIAM
WOLDMAN, BILL, Senator Tom Udall's Office

*Participating via telephone

T-A-B-L-E O-F C-O-N-T-E-N-T-S

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

8:25 a.m.

CHAIRMAN MELIUS: Ted, do you want to do our --

MR. KATZ: Sure. So, good morning. Welcome everyone here. And welcome everyone on the line, and just a few instructions for folks on the line.

We have a number of SECs we're going through, and we'll be hearing from petitioners in some cases. They'll be out there on the line with you. We have a public comment session at 5:30, from 5:30 to 6:30, for people here as well as on the line.

Let me just ask all of you on the line, though, please mute your phones except when you're addressing this group, which would be during one of those periods. But to mute your phone, if you don't have a mute button, just use * 6. Press *, and then 6. That will mute your phone. To take your phone off of mute, press * and then 6 again.

And, also, please do not put this call on hold at any point, but hang up and dial back in if you need to leave for a period.

And that's about it. Thank you. Dr. Melius.

CHAIRMAN MELIUS: Okay. We have several SECs to go through this morning and this afternoon. So we'll get started.

And the first one on the agenda is the Texas City SEC petition. This is a revised report, is that --

DR. NETON: Yes, it is.

CHAIRMAN MELIUS: Yes. And Dr. Jim Neton will make the presentation.

DR. NETON: Okay. Thank you, Dr. Melius.

Good morning, everyone. I am here to present Revision 1 of the Texas City Chemicals Evaluation Report.

And I'll get into a little bit about what's different in this revision in a

few seconds, but first I'd like to just go over a little bit about the AWE activities at Texas City. I think since the last time I presented this, we may have some new Board Members that haven't even heard about this yet.

So Texas City Chemicals was one of a number of -- several phosphate plants that were recruited by the Atomic Energy Commission in the early days, particularly in the early `50s, to be used as a potential source of uranium.

The way it works is that phosphate ore itself is naturally concentrated in uranium. It's about around .01 percent uranium by weight, which equates to about 30 picocuries per gram. So there's some useable uranium in there.

And the thinking was by the AEC that as long as these phosphate ores were going through and making phosphoric acid and other fertilizer-type products, why not

extract uranium at the same time? And that's exactly what the concept was at Texas City.

In addition to the production, the contract to produce some ore, some uranium ore -- or uranium, that is, there was also a chemical extraction research contract that we found that the AEC had with Texas City that I'll get into a little bit later, but it fundamentally helps establish the covered period.

Now that we know exactly what's happened, it actually sort of anchors the end point of the covered period which is currently October 5th, 1953, through September 30th, 1955. It's shrunk a bit since the original covered period, and I'll discuss that in a couple slides.

The residual period now is listed as 1957. In 1977, if you notice, there's a gap there of about a year. And that's an artifact of the way the residual contamination periods are defined.

NIOSH has a responsibility to provide a report to Congress as to what the end point for the residual contamination periods are. This covered period just recently shrunk by a year at the upper end, and the report to Congress has not yet been issued for Texas City.

So until some sort of a transmittal, whether it's a letter report or more formal report, is sent there, there will exist this gap at least on the Department of Energy website.

I mentioned the covered period has changed since the early -- since the Rev 0, and that's partly or mostly because of the additional information that we received about Texas City Chemicals through our data capture efforts. We learned quite a bit more about the details of the production problems of uranium at Texas City.

In fact, at the end of the day at most, Texas City produced uranium for about a

six-month period, which allowed us to substantially shrink the exposure assessment for uranium that we had in the original report.

Also, the details of the research that was conducted by Texas City became more apparent and, in fact, allowed us to realize that the end date for the research they conducted would establish the end point for the covered period.

And also more complete uranium production data was discovered that allowed us to not only know the amount that was produced, but the periodicity at which it was produced as well.

So having uncovered this information, we sent about a year ago last November, I think it was, a letter to the Department of Labor asking them to consider this information and make a determination whether the original covered period, as established, was reasonable.

The original covered period went from January 1st, 1952, to December 31st, 1956. After reviewing our information, the Department of Labor concurred and changed the covered period to a start date of October 5th, 1953, that reflects the date that what's -- so-called shakedown operations started.

The original date of January 1st, 1952, really reflected a letter contract between Texas City and the Department -- or AEC with the intent to build such a plant.

In fact, it took a while for the plant to -- for the agreement to be formalized and the plant construction to be completed. And October 5th, 1953, is the date that the plant was actually completed and they started moving at least some minimal amounts of radioactive material through the plant.

The new end date reflects the end of the AEC contract to conduct developmental work with leach zone material. That was the research contract. And that contract formally

ended September 10th, 1955.

It was a very small contract to look at the so-called leach zone material, which is the, as best I understand it, a layer of material above the phosphate-enriched layer in the ground that contains low phosphate, but equal amounts of uranium.

So it was of no economic value to the phosphate industry. They would just scrape that off and discard it.

The AEC recognizing that there was still about .01 percent uranium in there, Texas City Chemicals embarked on a research project to see if they could come up with a better way to more economically recover the phosphate from the leach zone material. Therefore, it would be a win-win.

They could get more phosphate out of the leach zone material, and the AEC could extract more -- get more uranium extracted from that leach zone that was previously abandoned or just discarded.

Okay. Back to the petition information. As I mentioned, this is a -- the petition was originally qualified way back in 2007 as an 83.13 petition. It provided information and affidavits to support the fact that radiation monitoring records for members of the Class may have been lost, falsified, or destroyed, and information regarding the monitoring records for Texas City Chemicals is unavailable.

Certainly, that is true. We have no monitoring information at all from Texas City unlike Blockson Chemical, which was another phosphate plant that produced uranium ores. They had some uranium urinalysis data. There was no urinalysis data at Texas City, nor were there any external dosimetry data.

So as I mentioned, the initial Evaluation Report, Rev 0, was issued January 18th, 2008, and was presented to the Board at the Tampa, Florida meeting in April of that year. And in our original evaluation, we

concluded that all exposures, including radon, could be reconstructed.

Rev 1 was issued October 18th, 2010. And in that revision, we reevaluated exposures to uranium, thorium, and long-lived progeny in light of the new covered time period.

That is the time period shrunk, so we revised our dose reconstruction methods to accommodate that. We also, as I mentioned previously, really shrunk the uranium period.

It turns out that only for the first six months of the covered period was uranium produced. And, in fact, only about 400 pounds of uranium ever was sold to the Department of -- or the Atomic Energy Commission at $25 a pound. So they sold about $10,000 worth of product from all that effort.

But probably the biggest thing that we've done in this Evaluation Report was reconsidering the use of surrogate data for reconstructing radon exposure. Those of you

might recall the original Evaluation Report, very much like the original Blockson Evaluation Report, uses the Florida Phosphate -- Florida Institute of Phosphate Research data to bound the upper limit of radon exposure in a phosphate plant. And I think that was around 2.1 or around two picocuries per liter was the 95th percentile of the data from the Florida phosphate industry.

After going through Working Groups and stuff and such with Blockson Chemical, at least, we realized that that number was probably low. Florida phosphate plants tend to be draftier. The data were taken from a more current time period, `70s on, that were not necessarily reflective of what would have occurred in the 1950s. So we've gone back to the drawing board and looked at how we were going to possibly reconstruct radon.

The proposed Class originally was all employees who worked at Texas City from the original covered -- defined covered

period, which was 1952 to `56. Our Class evaluated all employees who worked at Texas City during the revised covered period, which is October 5th, `53, through September 30th, 1955, just about one month short of two years.

As usual, we had a number of sources of information that we went to search out data for these facilities -- this facility. Our Site Research Database did have several of the contracts that were in place between the AEC and Texas City.

We had source-term. We knew how much phosphate ore was intended to be run through these plants and how frequently, you know, the production rate, and various AEC documents and memos. In particular, we had a lot of information from the Blockson plant, which is a wet chemical phosphate plant as well. So very similar processes that we could rely on.

We also had information from petitioners, interviews of former workers, and

we did conduct one outreach meeting at Texas City in October of 2007. In addition, we had these numerous studies in the phosphate industry, not the least of which is the Florida Institute for Phosphate Research publications which tend to be quite comprehensive, hundreds of pages summarizing over 20 years of operation of phosphate mining and production.

And in addition, we had a number of Technical Information Bulletins that we would apply to this site, which would include the Technical Information Bulletin on how we reconstruct medical x-rays in absence of any data for a specific site, TIB-9, which would be used for how to estimate ingestion exposures based on surface contamination levels, those type of TIBs.

Okay. A little bit of this might be redundant. Texas City operations, they were contracted in `52 to construct the plant. As I mentioned, construction was completed

and startup occurred in `53.

And as I said, only three to 400 pounds of uranium was produced between October `53 and March `54. About a six-month period.

There's two reports. The first report is a memo, an internal memo from the Atomic Energy Commission that said, basically, that the production never really got off the ground. It was in fits and starts. And it said something to the effect that approximately 300 pounds were produced.

The 400-pound number is based on a more -- I don't know -- more credible AEC report which was a summary of all the shipment and purchasing of uranium ore from the phosphate plants that they were contracted with. And that was the basis of the 400-pound estimate.

Texas City Chemical did file for bankruptcy in July of 1956. And that, in fact, was the basis for the original end date of the covered period. There was a FUSRAP

report that sort of suggested that uranium was produced during this entire time until they went bankrupt in `56. And we, of course, have since learned that that was not the case.

Okay. The research activities I've already gone over. This was to perform research into cheap methods to recover phosphorous oxide and uranium from these leach zone materials.

It was a very small, small operation. Laboratory based. There was one drum of phosphate ore received, as far as we can tell, over the entire time period. And there was another shipment of maybe 20 pounds from the Tennessee Valley Authority which was also operating a phosphate plant in that time period, but the contract did expire on September 30th, 1955.

So you can see what's happened is that the covered period starts in October of 1953. By May of `53, the production of phosphate is gone -- of uranium is over and

you still -- the only thing that's keeping this as a covered facility is this leach zone contract for research. So there's several different things going on at the same time period.

Okay. Just to briefly go over dose reconstruction, there's a fairly lengthy Evaluation Report. It's like 60 some pages. I won't go into all the details, but I thought I'd at least go over the highlights.

We did assume that the dose for external exposure occurred starting at the beginning of the shakedown operations, and there's two things going on here. You have an external exposure from dose in the phosphate plant itself, and then you have an external exposure from the dose in the uranium recovery portion of the facility.

So the dose in the phosphate portion of the plant was reconstructed using annual doses that are published in TIB-43, which is Characterization of Occupational

Exposure to Radium and Radon During Recovery of Uranium From Phosphate Materials.

That is largely based on this Florida Institute -- the FIPR report, the Florida Institute for Phosphate Research report where they did summarize 20 years worth of research in -- or 20 years worth of monitoring the phosphate industry. I think that one plant provided 30,000 TLD measurements.

And it turns out that the upper value -- we used the upper value that was reported for the highest-exposed job category which was maintenance craft-type workers, and I think -- I'm sure it was 220 millirem per year is what we used for this.

In general, it was very hard for anybody in the phosphate industry to receive over about a hundred millirem, but at one point in the process you develop a scale in the piping. The radium deposits there, the progeny grow in, and there are certain parts

in the filtration mechanisms and the piping where the scale could get to doses that would give you annual exposures up to 220 millirem per year.

Okay. The external dose from the uranium recovery was assumed to have occurred continuously from startup through March of `54, which is that six-month period. And we modeled these doses using MCNP first principles using Monte Carlo techniques to model the exposure to a person working at a drum of uranium.

It turns out the contract with Texas City Chemicals required them to put the uranium into 30-gallon steel drums. If you do the calculation, I think 30 -- 400 pounds of uranium would fill a 30-gallon drum about three-quarters of the way full. So that's all they made is less than one 30-gallon drum total of uranium.

So we assumed all the uranium was in one drum and modeled the beta and gamma

exposures around that drum using Monte Carlo techniques very much like what was -- pretty much like what was done at Blockson Chemical and several other sites.

Internal doses, also we have two components internal dose from being in the phosphate plant and internal dose being in the uranium recovery operations. The intake after startup are assumed to have occurred from inhalation of phosphate rock dust.

We did a survey of a number of facilities, and the highest inhalation exposure that we could find in a phosphate plant was in Idaho in 1978 that measured exposures of 50.4 milligrams of dust per cubic meter.

So for this particular internal application, we assumed 50.4 milligrams per cubic meter for 2500 hours per year. It results in something like the inhalation of about 150 grams of dust. Pretty healthy intake.

We scaled the amount of uranium breathed in based on what we knew to be in the phosphate ore itself, the .01 percent-enriched uranium, plus there are a number of other progeny that come along for the ride because uranium as mined in the phosphate business is typically in equilibrium unless it's gone through some chemical process.

And I think I've covered that. Okay. The uranium recovery operation, like I say, was a six-month period. And these are based -- we originally wanted to use the Bethlehem Steel data because we had very good bioassay information from Bethlehem Steel and it's a very similar process.

It turns out that Bethlehem Steel actually had a lot of good engineering controls, exhaust hood ventilation and such that we weren't sure existed at Texas City. So we went out in search of some data that -- what we could find for drumming operations of uranium.

It turns out there was a publication by Christifano in 1960 who worked for the Health and Safety Laboratory. It summarized the uranium exposure to a number of different uranium activities in the refining of uranium.

And one of those, he looked at three different plants that were drumming uranium products. And the highest value for the daily weighted average we could find was approximately 190 dpm per cubic meter. So we assumed during the drumming operations of this 30-gallon pail of -- or drum of uranium, that workers were exposed to 190 dpm per cubic meter over a certain period of time.

If you remember, it's a six-month period of operation. They only produced 400. What we ended up doing was assuming that they produced a hundred pounds per month in each of the six months.

So, we're about 50 percent higher than what they actually produced, but we feel

it's claimant favorable, and it allows us to essentially produce 25 pounds of uranium per week, and we modeled it based on that.

We did include some thorium and progeny as a function of the amount of uranium intake. It turns out the uranium purification process is not perfect. Some thorium and progeny do come along for the ride in the chemical extraction process. So we've added those back in.

Okay. Radon. We concluded in Rev 0 that we could do radon exposures. In Rev 1, we're saying we can't. We looked at the, if you recall back to the Blockson Chemical model, we had a single first order rate kinetics model or an input and an output. And based on that, we could calculate the equilibrium concentration of radon in the building.

We felt we had a pretty good handle at Blockson Chemical on the production rate, the work schedules, the building volume

and the range of air turnovers in that building. Turns out that we were lacking some very key information for input terms into that model. Most importantly, we didn't know the production schedule.

At Blockson, we knew it was 24/7. We don't know whether they worked eight hours a day. The way the plant was reported to operate in starts and stops, we really couldn't get a handle on the production rate to get the input term being constant in the model.

And probably more importantly, we just didn't know the facility volume and the partitioning of the -- within the building itself. Of course, the building volume is key in an equilibrium model. The bigger the building, the lower the radon concentration.

Originally we thought, well, Texas City processed about a third of the -- had the capacity to process about a third of the volume of Blockson. So we shrunk it down by a

third -- increased the radon concentration by a factor of three.

In the end of the day, we weren't comfortable with it because then we got to thinking we really don't even know the inner structure of this building. I mean, we knew pretty well that Blockson was an open alley situation. At Texas City, we didn't know. I mean, for all we knew it could have been in a 20-by-20-foot room where the ore came in and was processed.

So because of that we came to the conclusion that we can't reconstruct radon in the residual period -- I mean during the covered period. Now because now we say we can't reconstruct radon during the covered period, we need to make sure that we can do something in the residual period because, as I mentioned, the facility was covered out through 1977.

After the end of production of uranium, there is essentially no radon to

worry about in the phosphoric acid building because they're not making it anymore. There's no source-term in there anymore.

The source of all of the radium is in these phosphogypsum piles that are outside the plant. When you make -- when you process phosphate ore, you dissolve it in sulfuric acid and precipitate out the junk. And with the junk, comes the radium.

The radium is included in that phosphogypsum and it would be essentially a slag. They just dump it out on top of these piles.

Well, at the end of the day through 1977, we estimate they produced about a million pounds of phosphate slag -- or phosphogypsum, I guess, technically, but they only produced 400 pounds of uranium.

So how much radon in the residual period is a worker going to receive from the residual amount of phosphate slag due to the production of 400 pounds of uranium embedded

in a million-pound pile of phosphogypsum?

Well, we calculated that. And at the end of the day it turned out that starting in 1957 -- or `55 at the end of the covered period, it would be somewhere around three-tenths of a picocurie per liter on the piles.

And then we scaled it down over time as more and more new phosphogypsum was added to the pile to dilute out the source-term. So that's where we ended up with that.

I should mention we did base this on some radon measurements that were obtained during a lawsuit that occurred in the early 1980s. There was a couple measurements of flux rates on the piles, as well as radon surface concentration measurements, and they stacked up pretty well against what we saw in the phosphate industry.

And there's one other thing I should note is -- I learned a lot about the phosphate processing industry in the last year or two, if you can't tell. When you bury

phosphogypsum in piles, over time a crust develops on the surface, and so you have a lower emanation rate over time.

And the phosphogypsum was -- quit being added in `77. They did the measurements in the `80s. We found some literature to indicate that there should be about a factor of five difference between a crusty phosphogypsum pile and a de novo phosphogypsum pile. So we've increased those values by a factor of five to account for that difference.

Okay. A little about the status of the Texas City Chemical claims. We have ten that meet the Class Definition, so not a huge number of claims from the site. And we had previously completed dose reconstructions for two.

So we get into our evaluation process which is the two-prong test that I won't bore you with. And the feasibility of dose reconstruction, what we say now is that the process and source-term information

provide insufficient information to estimate doses associated with inhalation of radon and progeny with sufficient accuracy for the workers at Texas City Chemicals.

And so we are saying that we believe we can reconstruct reasonably uranium and the long-lived progeny from uranium, thorium, and the long-lived progeny from thorium. External, we can do the beta-gamma occupational-medical, but we cannot do the radon during the covered period, but we can do it in the residual period.

And so there's our recommendation. October 5th, `53, to September 30th, `55. And this is the formal definition that I hope is in the Evaluation Report.

So it's all AWE employees who worked from October 5th, `53, through September 5th, `55, for 250 days.

And that concludes my presentation.

CHAIRMAN MELIUS: Okay. Thanks,

Jim.

Just a little background for the Board Members, new and old. This site had been originally referred to the Surrogate Data Work Group when the first Evaluation Report came out. And then we had really not taken any action on it, though I think we had done some discussion, but pending development of the surrogate data criteria of that.

So about a couple weeks ago, week and a half ago, the Surrogate Data Work Group met and reviewed the new report and discussed it. And we will be making a recommendation to the full Board on that, but that's sort of the time delay in our sort of Board involvement in this.

So this is something we talked about quite a while ago. It's sort of been on hold. And then more recently it's been on hold pending the Blockson review. So that held it up also.

So if that's helpful, any of the

Board Members have questions for Jim?

Yes, Dave.

MEMBER RICHARDSON: Just out of curiosity, the petitioner had two contentions. There was the information regarding monitoring was unavailable, which I think you agreed with.

The other one you didn't address but I was curious about was the contention that radiation monitoring records of the proposed Class may have been lost, falsified, or destroyed.

What's the background on that?

DR. NETON: Well, we certainly would agree that they could have been lost. They're not there. I mean, we have no information to indicate that they were either falsified or destroyed, or they could have been destroyed as well, but we just don't know.

We don't know whether they were falsified. We don't have any information on

that.

MEMBER RICHARDSON: But there was no evidence that monitoring had been done, for example -- you didn't have records?

DR. NETON: No. To my recollection, this has been going on for a while, we didn't have any indication that there was any monitoring, and we just didn't -- couldn't unearth it.

CHAIRMAN MELIUS: Anybody else?

Dr. Ziemer -- well, why don't we hear from Dr. McKeel first, and then -- we'd like to hear from the petitioner now.

Dr. McKeel, are you on the line?

DR. McKEEL: Dr. Melius, this is Dan McKeel.

Can you all hear me?

CHAIRMAN MELIUS: Yes, we can, Dan. Go ahead.

DR. McKEEL: Okay. Good. Thank you.

Well, good morning to everyone.

I'm Dan McKeel, and I'm the co-petitioner for Texas City Chemicals for SEC-00088, and have been since 2006.

This SEC has had a long and a very interesting history being intimately intertwined with that of another phosphate fertilizer plant, Blockson Chemical in Joliet, Illinois, that also had an AEC contract to extract uranium and furnish them with uranium yellowcake oxide.

SC&A and the Board selected the TCC site early on as a test case to apply draft Board surrogate data criteria. When I first became acquainted with this site and the Texas City Chemicals workers during a site visit and interview with KHOU TV in Houston in 2006, I was impressed that these workers must surely be awarded an 83.14 SEC.

Why did I think this? Because there were zero, that is, no personnel monitoring data in the form of either film badges or urine bioassays.

And to answer Dr. Richardson's last comment, there was no indication from the workers that those film badges or urine assays had ever been part of the radiation safety program.

I was told by OCAS and director Larry Elliott back in that time frame, that NIOSH had no monitoring data at all, as Dr. Neton admits this morning, and that only three records on TCC existed in its Site Research Database.

In 2007, Mr. Elliott further informed me that Texas City had no Site Profile and would not have a site-specific appendix to Battelle TBD-6001. And that is the same situation as today.

Only two Texas City Chemicals workers had completed NIOSH dose reconstructions in 2006, and none had been compensated by Department of Labor. Now more than four years later, Department of Labor says there are 17 Texas City Chemical cases --

have been submitted to NIOSH for dose reconstruction, whereas NIOSH says the number is only 15.

Only three Texas City dose reconstructions have been completed by NIOSH according to the latest DOL website listing, and one TCC claimant has been paid, and this compensation event occurred apparently in 2010.

SC&A reviewed the NIOSH/Texas City SEC-88 first Evaluation Report, Rev 0, and found that two of four draft surrogate data criteria had not been fulfilled. Specifically, SC&A found that NIOSH had failed the stringent justification criteria for using surrogate data from sites with similar processes and facilities.

As acknowledged at the November 5th, 2010 Surrogate Data Work Group meeting, all the SC&A findings on the original Texas City Evaluation Report have not yet been fully resolved.

Action on SEC-88 has been delayed by two primary factors. In January 2009, DOE transmitted Department of Labor documents that were used to shorten the 1/1/53 to 12/31/56 AE covered period by 15 months. Dr. Neton has described additional details of those exchanges.

The period of time during which uranium was extracted at TCC by the wet process was also reduced, as Dr. Neton just described. The covered period is now October the 5th, `53, through September the 30th, 1955.

And as mentioned, by 1970 it is believed that one million tons of mixed waste, AEC and commercial phosphogypsum, had accumulated at the TCC site under new ownership, of course, at that time period.

The AEC Uranium Recovery Building at Texas City Chemicals was used until December 1977 or January 1978 when it was demolished. And this is direct testimony from

the person who directed the contractors who demolished the Recovery Building.

To my knowledge, and I have asked, the official Department of Labor letter changing the covered period has not been released to the public, and certainly has not to me as co-petitioner. This morning was the first time I ever learned that the original letter actually was submitted by NIOSH to the Department of Labor to change the covered period, and I have not seen that communication either. So I don't know exactly when this -- these important correspondence events transpired.

I should point out that there are two adverse results ensued from the perspective of claimants and potential SEC-88 Class members that attended the reduction of the covered period. First, the number of eligible persons in the Class NIOSH is recommending now numbers only ten people, a result that is -- certainly is not claimant

favorable. And I don't believe it's been reported how many people would have been covered by the previous Class based on Rev 0.

And second, there now exists a 15-month gap between the end of the operational period and the start of the residual period.

I was assured at the November 12th SEC Issues Work Group meeting that NIOSH intends to correct this unfortunate gap by a letter amending its recommendation on residual contamination to Congress. Dr. Neton reiterated that this is an important thing that NIOSH has committed to do, and I certainly hope this happens soon for the TCC workers' sake so that people in that gap period can at least have a dose reconstruction.

Very recently NIOSH withdrew Rev 0 of its 1/18/2008 Evaluation Report and substituted a revised Evaluation Report on 10/18/2010, following the enactment of the Blockson Chemical SEC number 58. That

happened after the Board rejected the radon model developed for the Blockson.

Now, as described by Dr. Neton, NIOSH has found that it could not reconstruct internal doses for radon at Texas City Chemicals and recommends an SEC Class for the reduced operational time period.

There are many unresolved surrogate data and document access issues surrounding this Texas City SEC. However, we welcome NIOSH's new recommendation and hope the Board will approve an SEC for this deserving group of former Texas nuclear weapons workers. At the November 5th meeting, it was my understanding that the four of the five members of that Work Group supported NIOSH's recommendation to approve an SEC Class.

It has been a sincere pleasure to work with all of the workers and people associated with Texas City. And it's been an honor to represent the Texas City Chemicals

group before the Board and the Surrogate Data Work Group.

We also wish to thank all those people who have helped us along the way. And especially we'd like to thank Congressman Pete Olson of Texas who has written the Board a letter on our behalf outlining the key reasons that SEC-00088 for Texas City Chemicals should be approved.

We thank the Board, SC&A, and NIOSH for their efforts as well, and I thank you for letting me address you this morning. Thank you very much.

CHAIRMAN MELIUS: Thank you, Dan.

Okay. Let me clarify one of Dan's statements. I don't want to bias the Board here, but the Work Group, the members in attendance, Jim Lockey was not available for the meeting. So he was the fifth person, but it wasn't that he didn't get a chance to express his opinion in the Work Groups or his vote, whatever.

So going forward I think the Work Group did recommend that the NIOSH recommendation should be, you know, that recommendation -- to the whole Board. I think there are some -- we do have some reservations, and I'll let Dr. Ziemer speak to that.

MEMBER ZIEMER: Thank you, Dr. Melius.

I did indicate that I would support NIOSH's recommendation, but I did have a reservation that I felt was important to raise before the Board, and it has to do with the broader picture of consistency on our part on how we approach bounding issues. And in particular in this case, it would go to the issue of bounding radon and what would be considered plausible bounding assumptions.

There are two issues that NIOSH has raised. And I expressed this in the meeting, so I -- this is not new, but I did want to bring it up. There are two issues.

One is a production schedule issue. The other has to do with facility volume and perhaps partitioning within the facility.

One of the comments Dr. Neton made, for example, was that the area where the work was done might have been as small as, say, 20 foot by 20 foot. Well, conceptually, that's exactly my point. Let's think about maybe a small facility, if that's plausible. If you could get the work done in a 20 by 20 facility, maybe that's a bounding area or volume from which one could -- because we have good source-terms. One could compute a concentration.

As far as production -- well, let me add one other thing to that. It's not clear to me whether in the worker interviews anyone has queried the workers about the size of the facility. For example, would a worker claim that 20 by 20, for example, just arbitrarily pick that number, was way too small or way too large or is that a reasonable

assumption? In any event, that's one issue.

The production schedule issue, it seems to me one could think conceptually about some scenarios, for example, constant production rate during the period or maybe a couple short-term situations, and see what the outcomes would be. So I was thinking of it in those terms.

I mean, I guess if some of our academicians here were to take this to their class, you could certainly ask a class of competent students to come up with a reasonable radon concentration for the room. You would also have to make an assumption about the turnover rates. And, again, in other situations, we've done some bounding on that.

Assume, for example, that there's not a high turnover level of the air, but a rate that's plausible, and see what you get. I admit there could be some additional issues on partitioning, but I just wanted us to think

about whether we are dismissing the bounding on this too readily. That's sort of the issue that's in my mind on this.

And, again, I've indicated I understand the problems in doing this. I fully appreciate NIOSH's position, and I know that Jim Neton and his staff have wrestled with this. So I appreciate that and I'm certainly willing to support the recommendation. I just want us to make sure that we're not dismissing the issue of bounding this particular one too readily because it seems to me this is one of the simpler cases as compared to others that we have faced.

CHAIRMAN MELIUS: Yes, I would just -- the counterpoint is that the plausibility isn't -- yes, if one assumed a certain size building and certain configuration, one could probably come up with a plausible level. But the issue is what's plausible in terms of choosing that configuration, I think.

It's not coming up with a level. It's choosing that configuration for a building that you have, you know, no information about -- I'm assuming you have no information about. And so you not only -- you don't know the turnover, you don't know the geometry of the building, including how it's partitioned and that -- and I think that's the plausibility issue.

I do agree it gives you -- I think it makes us all hesitate given the amount of production at the facility. And I think if we had a little bit more information, we might feel differently, but we don't.

MEMBER ZIEMER: Well, and admittedly it's a small number of people.

CHAIRMAN MELIUS: Yes.

MEMBER ZIEMER: So the outcomes may not be very different, but I'm thinking of it in terms of more general terms.

CHAIRMAN MELIUS: Yes.

MEMBER ZIEMER: Yes.

CHAIRMAN MELIUS: We should have some discussion here, but I also want to point out that due to some other people that are scheduled to call in regarding Linde, I am going to have to sort of cut off discussion at 9:15 and then we'll come back to this later.

So I'm not being rude or being selective here. So we'll do that, but we do have some people that have a tight time frame.

So, Brad, you're up first.

MEMBER CLAWSON: That's taking a hint there. You know, one of my problems with it is, is I look at what was the basis for SECs. It's not -- for lack of information. We have totally zip here.

Now I understand and I keep hearing the word "we assume," but a lot of times assumptions are not really the best thing. Especially, you know, we know the source-term, we go like this, we can build any kind of a model there is, and we can always throw in a credible scenario that will blow

that read out of the water. There's too many things to be able to assume here.

I thought the reason that we had SEC petitions was when we had the lack of information and everything else like that, so that the people got treated right. This isn't -- and no disrespect, but this isn't a classroom test to see if we can bound all this stuff.

This is people's lives that we have been dealing with. And I really have an issue with this especially with Texas City just from the standpoint of no data.

Now we can spend all the time there is and make all these neat models, but the bottom line is we still don't have the data there. And I personally feel like that's why these SECs were set up was for this reason.

And I have the utmost respect for the NIOSH people. Jim Neton has my utmost respect of anybody. But I think in my

personal opinion, we're missing what the real issue was.

MEMBER ZIEMER: Could I make a quick response?

CHAIRMAN MELIUS: Sure.

MEMBER ZIEMER: Brad, this is not a case where there's no data. We have very good source-term data. Most of the rest of the reconstruction here for the other issues are based on that. I mean, you can calculate very accurately what upper bounds are for handling uranium in these cases.

I recognize radon is a little more iffy, but it's -- we're not a hundred percent in the dark here. We have good source-term data, and that's one of the primary things. And this is a very simple operation.

CHAIRMAN MELIUS: I'm afraid I'm going to have to cut us off now. When we come back, Wanda will be first and then Jim Lockey. So I will remember that, but we do have to get on to Linde and we have some people

calling in for this.

So the first person we are going to be hearing from is Melissa Fratello from Senator Gillibrand's office from New York.

Melissa, are you on the line?

Apparently, not yet. Maybe we're a minute early. Melissa was going to try to call in around 9:15, but she had a very tight schedule.

Melissa Fratello? We'll wait a minute.

MS. BONSIGNORE: Dr. Melius?

CHAIRMAN MELIUS: Yes.

MS. BONSIGNORE: This is Antoinette. I just sent her an email.

CHAIRMAN MELIUS: Okay. Thanks, Antoinette.

MS. BONSIGNORE: Sure.

CHAIRMAN MELIUS: Gen, do you want to get ready and --

MEMBER ROESSLER: I'm ready.

CHAIRMAN MELIUS: Oh, you're ready.

Okay.

MEMBER ROESSLER: I was already halfway up there.

Can I go now?

CHAIRMAN MELIUS: No, why don't you wait then. As long as you're --

MEMBER ROESSLER: Okay. When you say it, I'll be there.

CHAIRMAN MELIUS: Okay.

Melissa Fratello on the line yet?

MS. FRATELLO: I am.

CHAIRMAN MELIUS: Oh, very good. Okay. We jumped the gun a little bit. Go ahead. You'd like to make some comments.

It's Melissa Fratello who's the staff member for Senator Kirsten Gillibrand from New York State.

MS. FRATELLO: Thank you.

Good morning. I'll be brief. I just have a letter from Senator Gillibrand and Senator Schumer dated November 12 to Dr. Melius, to read into the record.

CHAIRMAN MELIUS: Go ahead.

MS. FRATELLO: Thank you.

Dear Dr. Melius. We are writing today on behalf of the sickened nuclear weapons workers from the Linde Ceramics facility in North Tonawanda, New York.

These sickened workers have been petitioning the National Institute For Occupational Safety and Health for compensation under the Energy Employees Occupational Illness Compensation Program Act pursuant to the Special Exposure Cohort Program since March 2008. We strongly urge the Advisory Board to recommend the approval of both Linde SEC petitions 00107 and Linde SEC petition 00154 without further delay.

We would like to raise two specific concerns regarding the evaluation process that are central to ensuring timely and fair evaluation of claimant petitions. First, we are concerned about the dismissal of the 180-day requirement for evaluation of SEC

petitions and submission of a recommendation to the Advisory Board.

Many claimants with whom you're working have spent years awaiting response to their -- evaluation of their claims, and, as many are sick and elderly, ensuring timely evaluation is paramount.

Second, we are concerned about the Division of Compensation Analysis and -- use of inaccurate Site Profiles in their evaluation process. Many claimants petitioned the Department of Labor to have their claims reopened. DCAS revised the Site Profile in November 2008. Nearly all of those requests were denied within months of the release of that revised Site Profile.

The issue of timeliness is critical to the process, which is why Congress mandated a 180-day response to petitions in the underlying law.

If the Advisory Board indeed believes that the specific 180-day deadline

mandated within 42 USC 7384 Q and 42 CFR 83.13 is not a binding -- then the Advisory Board must ensure that any changes to the original November 2008 Evaluation Report are not used by DCAS to justify recommending the denial of the Linde SEC -- instead, any and all changes to DCAS's analysis after the 180-day deadline elapses, only be used to revise Site Profiles.

Those documents would be used solely for determining individual dose reconstruction claims for workers diagnosed with non-presumptive radiogenic cancers.

The Advisory Board needs to adopt a clear and consistent policy that will safeguard the need for timeliness within the SEC program without harming the petitioners -- adopting such a policy would allow DCAS to investigate ongoing issues about specific worksites without compromising the petitioner's right to a timely evaluation of their SEC petition.

Any claimant-favorable information

developed by DCAS can then be incorporated into Site Profile revisions to help individual claimants with non-presumptive radiogenic cancers receive more accurate dose reconstruction evaluations.

Ignoring the specific prescriptions within the Act should not be used as a vehicle to justify DCAS's policy of favoring the individual dose reconstruction program over the SEC program.

Assessing the viability of this Linde SEC petition based upon anything beyond the November 2008 Evaluation Report would disregard the very reason why Congress created this remedial compensation program in the first place.

The Advisory Board must recommend the approval of Linde SEC petition 00107 because, one, DCAS has altered their SEC analysis repeatedly after frequent criticism from this Board's technical contractor and, two, DCAS has never addressed worker exposure

potentials in the Linde underground tunnel.

In addition, the DCAS refusal to reopen cases as Site Profiles are -- revised is troubling to -- DCAS relies upon Site Profiles to perform dose reconstruction evaluations. The Linde Site Profile is still a work in progress.

This flawed document will need to be revised for a fifth time in just five years. It fails to address even the most basic issues raised in the November 2008 Evaluation Report.

Moreover, tunnel exposure issues were addressed neither in the November 2008 revised Linde Site Profile, nor in the November 2008 Evaluation Report. This is true despite the fact that DCAS -- about potential worker exposure since January 2006.

All four previous versions of the Linde Site Profile have been -- and inaccurate. Yet DCAS has been using these inaccurate Site Profiles to evaluate dose

reconstruction claims since 2005.

The goal of timely compensation has been abandoned simply because SEC petition evaluations often uncover significant deficiencies in Site Profiles.

When such extreme uncertainty prevents DCAS from revisiting previously denied claims because Site Profiles need to be repeatedly revised, then DCAS should recommend the approval of an SEC petition pursuant to 42 CFR 83.14.

Such a recommendation -- justified when claimant-favorable dose reconstructions cannot be completed in a timely manner. DCAS should not create endless uncertainty as to when and if they will reevaluate previously denied claims.

DCAS's policy of favoring individual dose reconstruction program over SEC approval is unfairly penalizing Linde claimants that deserve to have their claims reevaluated independently of the SEC

evaluation. This unjust catch-22 paradigm calls for swift action by this Advisory Board.

Preserving timeliness is fundamental to this claimant-favorable remedial compensation program. The Linde SEC petitioners and the individual Linde claimants have been unfairly denied timely and fair compensation time and again.

We strongly urge DCAS to recommend the approval of both Linde SEC petitions pursuant to 42 CFR 83.14. Most importantly, the Advisory Board must right this wrong and recommend the approval of Linde SEC petition 00107 and Linde SEC petition 00104. The Linde workers have waited far too long for justice.

Thank you for your attention to this critical request. If you should have any questions, please do not hesitate to contact Anne Fiala in Senator Schumer's office at (202) 224-6542 or Ben Rosenbaum in Senator Gillibrand's office at (202) 224-4451.

Sincerely, Senator Charles Schumer

and Kirsten Gillibrand.

Thank you.

CHAIRMAN MELIUS: Thank you very much. Appreciate it. And the letter, I believe, either has been circulated or will be circulated to all the Board Members. Ted and I can't remember what we did.

Okay. We'll now move on in your presentations about the Linde petitions.

MEMBER ROESSLER: This presentation is really hot off the press. In fact, your copies of my slides should still be warm.

We had our last Work Group meeting last Friday. And because of the weekend and travel and everything else, our Work Group just finished putting together this report at 8:00 a.m. this morning. So if you want to date it, put 8:00 a.m., November 16th on your paper.

Because of that, it has not been through a proper editing procedure, which is always a concern to me. If there are typos or

dangling participles, I apologize, but I'm sure Paul will catch that.

CHAIRMAN MELIUS: I will not let Paul, though, interrupt you to point out such -

MEMBER ROESSLER: But the important thing is to get to present to you our Work Group information.

Even though it's sort of preliminary, we wanted to do it today. We did not want to delay any further.

Our Work Group members are myself as chair, Josie Beach, Mike Gibson, and Jim Lockey.

As I point out on here, we invited another Board Member, Bill Field, to participate. We invited him to participate in two meetings. He was able to make one. Bill is a radon expert.

The NIOSH team, Chris Crawford, Jim Neton, and David Allen. And I think Chris is here, I hope. I thought I saw him come in.

He's here. Good, because later on you may have questions, and he and Jim Neton will be able to help.

The SC&A team really was led by Steve Ostrow. John Mauro was at every meeting, and John is here today.

I'll give a little bit of background. Now I did make a more detailed presentation on Linde. I think it was in September of 2009. So the new Board Members may have more questions, but I'll keep this kind of brief for today.

The Linde Ceramics plant was located in Tonawanda, New York. In 1942, Linde was producing dye for ceramics. And at that time, they contracted with the Manhattan Engineer District to process uranium ores to produce uranium oxide more commonly called yellowcake, and later uranium tetrafluoride or green salt. The plant ceased operation in 1948.

Now, compared, in my view anyway,

compared to a lot of the facilities we've been talking about, this one is not terribly complicated. They had kind of a straightforward focus.

The plant ceased operation in 1948. The decontamination and decommissioning was done between July 1st, 1949, and July 7th, 1954, with most of the work done in 1949 and 1950.

We're talking now about SEC-107. There is another one that will come up later. This period is January 1st, 1954, through January 31st, 2006, and there are two parts to this petition; the renovation period, which was from January 1st, 1954, to the 31st of December, 1969; and then the residual period which was January 1st, 1970, through July 31st, 2006.

We've had a number of Work Group meetings. We started the Site Profile evaluation. Held four meetings from March 2007 to June 2008. At that point, NIOSH

presented their petition evaluation in which they said they could do dose reconstruction during this time period.

So from September 2009 to present, actually last Friday, we've held eight meetings. Now I'm going to kind of quickly summarize this whole process. As you know, what happens is we have NIOSH's report. And then we ask SC&A to review their report and to identify any issues that they might have.

Eleven issues were identified initially, and this included nine issues identified by the petitioners. It was possible to group these issues into three categories: radon in the Linde buildings, exposure to airborne particulates, and then kind of a miscellaneous category.

Issues 1 through 3 with regard to radon, kind of a popular topic around here, radon would have come from radium left after the earlier decontamination efforts, and of course to natural background. No new sources

were introduced after 1948.

The radon source-term was measured during production period, and NIOSH proposes using this as a constant upper bound for dose reconstruction for the entire -- now, I'll tell you something here. I have a degree in math, but I am not good at arithmetic. Should be entire 16-year period. The entire 16-year renovation period, and therefore they consider this to be a bounding number.

With regard to radon issues, there was also comprehensive contamination and radon surveys performed in 1976 and 1981.

And I probably have shortened this a little too much. And if you have questions later, we'll invite NIOSH to respond on this.

But to do bounding here, NIOSH assumed -- the radon level is assumed to decline from the end of the renovation period in 1969 to a lower value in 1981, and then held constant to 2006.

When SC&A reviewed this process

and we spent a lot of time talking about it, they concurred that NIOSH can reconstruct the radon doses for the entire SEC period. So there are several subsets in that period.

With regard to airborne particulate contamination, and these were Issues 4 through 8, again breaking it up into two periods, the renovation period, NIOSH assumed that the concentration of material in the air at all times during this -- here, I have it right -- 16-year period was equal to that measured during the earlier decontamination period.

And during that time, there was a lot of activity, pneumatic hammers and other things stirring up a lot of dust and -- to remove a concrete floor and other things.

During the residual period, the first six years from 1969, airborne concentration was assumed to decay exponentially to a measured 1976 survey number and then held constant in 2006. And again

there you might want a little more detail on that.

Other issues, Issues 9 through 11, one regarded raffinates. And I think this discussion between SC&A and NIOSH was really kind of a clarification of what NIOSH had done. So SC&A agreed with NIOSH regarding the raffinates. They were removed from the site in the late 1940s.

And then there were some other miscellaneous questions that I think was just a discussion gaining an understanding of what NIOSH was doing. There were some additional issues. One had to do with ore concentrations, but really this wasn't relevant. We didn't have to know the source-term exactly since there were some actual radon levels or based on actual measurements.

I'll go back here. At the end of all this discussion, as Work Group chair I thought we had reached kind of a conclusion that SC&A agreed with NIOSH that dose

reconstruction should be done.

So I proposed a motion at a Work Group meeting saying that I believe NIOSH could do dose reconstruction. I think Jim Lockey seconded it. And we took a vote, and we had a two-to-two vote. Jim and I voted for that, and Josie and Mark -- Mike Griffon voted against it.

So I said, well, okay, where do we go with a tie vote? How are we going to present this to the Board? So I asked Josie and Mike, what else can we do? What can we have SC&A do? What can NIOSH do? What can we do as a Work Group to address your concerns?

And I think Mike said, well, I don't think there's anything in addition we can do. I just really have a lot of questions about the process. And we're going to give Josie and Mike an opportunity to address those things in a little bit.

About that time, though, another issue was identified, and this has to do with

utility tunnels. This was brought up by the petitioners, and we found out that tunnels at the site -- the tunnels of concern are called utility tunnels. They were not used to process, store, or convey radioactive materials, but they might have been contaminated by flooding and seepage from the surrounding soil. And there might have been, well, radium and then radon contamination from plant operations, disposal of liquid waste in shallow injection wells. Although, these ceased in 1948.

Now this slide is new information. This has not actually come before a Work Group meeting, but I put it in here because I thought we might have some discussion about it later.

This came out in an email that came, I think, over the weekend. According to that email, a utility tunnel near the power house, Building 8, and near the Tonawanda lab, Building 14, was constructed in 1937.

Bore hole samples near this tunnel reportedly did not show radium concentration above background for this area. And this is really important as we know when we deal with radon, is we need to know what the soil is, what the soil content is.

And then also according to this report, additional utility tunnels were built in 1957 and 1961. These utility tunnels built in 1957 and `61 with regard to non-radon exposures from the contaminated walls in the tunnels, assuming they were contaminated, again much discussion, but SC&A found the NIOSH bounding estimates from a 2001 survey acceptable from measurements taken at that time.

With regard then to radon exposures, there are two sources. One would be from the radium contamination. And the other one would be from infiltration coming into the tunnel from the surrounding soil.

With regard to the radium

contamination, SC&A found the NIOSH bounding estimate acceptable again based on this 2001 tunnel survey.

Still a question about the last point. And in order to address that, NIOSH developed several really sophisticated analytical models for estimating the radon concentrations.

Well, we went back and forth quite a bit with these models. SC&A also spent a lot of time evaluating them and did not accept some of their parameters. So we felt that that was not a method that could be used. So the approach is not to use these analytical models.

Instead, NIOSH proposed use of radon data from another tunnel. It was a tunnel used in the production period, an ore conveyor tunnel in or near Building 30. And the thought was to try and use this real data and then compare the conditions between the two tunnels to see if this data and the

numbers they got there would be bounding.

So we spent a good bit of our time, and this was a teleconference on November 12th, comparing this conveyor tunnel/production tunnel, its characteristics to utility tunnels in order to establish a bounding value for the utility tunnels.

We came to the end of our time, and I put this in here, and I think SC&A will agree that this was said, John Mauro said, speaking for SC&A, that he tended toward acceptance of a bounding concept as a plausible upper bound, but still had questions.

Well, we didn't really have time to go back and forth and get this all resolved. And yet we didn't want to say okay, we need another meeting. So we decided that we couldn't come up with a recommendation, we'd presented all our discussions and so on here, and we decided to present this to the Board for a decision.

However, as I mentioned before, we have a two-to-two sort of opinion about this particular position. And so what I'd like to do now is ask Josie if she would come up and present the thoughts that she and Mike had put together, and then I'll conclude.

MEMBER BEACH: Okay. So this is a little unusual, but we decided that the first concerns were Jim Lockey and Gen. The other two Work Group members' concerns were of course Mike Gibson and I.

The radon, we actually had two issues. You'll see in the next four slides, the radon exposure which was Issues 1 through 3. The utility tunnels had two sources of radon. The first was the radium contamination on the walls from overflow from effluents into the tunnel, and from the injection wells used during the operation period. And then the second source of radon was from the radium contaminated within the soils that infiltrated into the tunnel walls.

Okay. There's no bioassay data. There's no in vivo data. There's no film badge data or radon breath analysis available during that time period. And I'm mainly talking about the renovation period from 1954 to 1969.

There was no field monitoring data. That includes the air sampling and/or radiological surveillance data. None of them are available for that time period. There's no radiological characterization available to quantify the source-term.

Now NIOSH proposes to use surrogate data from the conveyor tunnel collected in 1946, but they failed to demonstrate technical equivalency for that.

Let me check my slides here. So those were samples taken during that time period.

NIOSH is also currently investigating the feasibility of taking actual radon measurements in the portions of the

tunnel that still remain on the site. This has been discussed during our Work Group meetings on a couple of occasions. And to this date, I'm not sure if they've gotten approval to do that.

So if that is done, the question will still remain whether measurements under present tunnel conditions are sufficiently similar to the former tunnel conditions to allow current air concentration measurements to apply to that former -- the former air concentrations.

SC&A and NIOSH have failed to come to a resolution on suitable methods for determining radon doses in the utility tunnels.

Okay. So that was our radon concerns. On to issues. I believe those are 4 through 8, the air particulate contamination.

The Evaluation Report acknowledges a potential for inhalation and ingestion of

residual contamination from resuspension of uranium and uranium progeny contamination in Buildings 14, 30, 31, 37 and 38, as well as from contaminated soil. So the workers do describe very dusty conditions during -- while they were conducting invasive work during that period, which, again, is `54 to `69.

There is, again, no urinalysis, there's no in vivo data and/or film badge monitoring available during that time period. There's no air sampling and/or area monitoring data available for the renovation period. There's no radiological characterization data for the renovation period to qualify that source-term. To bound the internal dose for uranium, thorium-230 and radium, NIOSH proposes the use of surrogate air sampling data from the Linde cleanup period, and a single air sample taken in 1976. The technical equivalency has not yet been demonstrated.

Okay. Here's a couple of Mike and

I's concerns. Without the use of personnel monitoring and/or area monitoring for the renovation period, we are required to rely on surrogate data, which no technical equivalency in the radiological control program, physical status of the facilities and operations conducted by the workers has been demonstrated.

NIOSH has not sufficiently demonstrated that they can reconstruct the radon dose to workers from the exposures in the utility tunnels. SC&A has not accepted the methods proposed to date.

Okay. And then one other comment I have that I didn't have a chance to put on the slides, the construction of the utility tunnels. Between what has been reported when the construction occurred for the utility tunnels and through worker interviews, we have three worker interviews that sent affidavits through email yesterday. They state the tunnels existed in 1953.

So that issue has still not fully been discussed and really needs to still be looked at. And I believe that will come up again in the next petition we'll hear from after this, but it does have some concerns for this time period also.

Let's see. Back to you.

MEMBER ROESSLER: So then to sort of round this out, conclusions by two Work Group members, and those two members are me and Dr. Lockey.

Just to summarize, we agree with NIOSH and SC&A that radiation dose can be reconstructed both during the renovation period and residual period in all pertinent Linde buildings, of course, using bounding, which is a legitimate method for doing it.

The use of measured radon values from the Building 30 production conveyor tunnel are claimant friendly, we believe, from the information we've heard, and would bound radon infiltration exposure from the

surrounding soil into utility tunnels.

So as you can see at this point, we probably need a lot of discussion by the Board since the Work Group did not come to a consensus.

So, Dr. Melius, I'll turn discussion leadership over to you, and we'll sit down and participate --

CHAIRMAN MELIUS: Okay. I just commented to Paul that we should just accept the Work Group recommendations.

(Laughter.)

MEMBER BEACH: I actually do have a recommendation. If it's not totally out of line, I'd like to recommend that we approve the SEC for the renovation periods January 1st, 1954, through December 31st, 1969.

CHAIRMAN MELIUS: Okay. Thanks.

So Board questions. Jim Lockey, go ahead.

Was that a motion or --

MEMBER BEACH: No, it was a

recommendation.

CHAIRMAN MELIUS: Recommendation. Okay.

MEMBER LOCKEY: It's been a long haul, and we have agreed to disagree, and that's fine. That's the way it is.

In relationship to the tunnel construction issue, and I went back and went through all the documents. And after talking to Mike last night, I went back and looked at the worker's statement again that was signed by the three workers.

The data that we got over the weekend indicates that there was a tunnel constructed in 1937. And that tunnel in 1937 was a utility tunnel. And that was the tunnel between the power plant and Building 14. Not around the ceramic plants, but between the power plant and Building 14.

So that tunnel existed in `37. And, apparently, there were samples taken around the tunnel that indicated at least

around that tunnel, it was not contaminated by radium in the soil.

Then the statement is made in emails that we got from, I think, Frank Crawford, was that the 19 -- the tunnel -- another utility tunnel was built in 1957. And that's based on the Shaw memorandum from 2005 that also -- there's also engineering records that are dated with construction date sites, `37, `57, `61, and there's a subsequent, I think, one built in 1990.

So the second tunnel then was constructed in 1961. I went back and looked at the signed worker statements. And, in fact, two of the workers talk about the tunnel, Building 8 and Building 14. So -- and that wasn't existent at that time.

And one of the worker mentions that around the mid-`50s, that all the tunnels were present. So one said all the tunnels were present in the mid-`50s. The other two said that they remember working in the

Building 8/Building 14 tunnel.

A fourth worker that was interviewed previously, I think, by SC&A or NIOSH, I'm not sure who, said essentially the new tunnels were put in in the -- in 1957 and `61.

So when I go back and do historical reconstruction in some of the cohort studies I'm involved with, we do focus groups, we talk to workers, and then we go back and look for -- try to look for documentation that is supportive one way or the other. And so that's why we think -- we're pretty confident that these tunnels were built the dates that we presented on this slide.

Now the reason that is somewhat important was the injection wells - the injection into the injection wells of this very highly alkaline material that had some radiation contamination, ceased in 1948. And the New York Assembly report was a great

report to review. And when I went through that whole report, it talks about the wells overflowing onto the ground and them having to bore new wells to keep the process going. But that ceased in 1948, and these two utility tunnels were built in `57 and `61.

And the only other piece of information about the utility tunnels was the Corps of Engineers apparently did core samples, I guess, in the Florida tunnels in `78-`79, and found that there was minimal contamination at least in the ground under the tunnels because they were concerned as to what backfill was used when these tunnels were constructed.

CHAIRMAN MELIUS: Okay. Thanks, Jim.

Wanda.

MEMBER MUNN: Is the term utility tunnel correct for those two? Utility tunnels, as commonly understood, would not very often be inhabited. Were they simply

tunnels for running things back and forth?

MEMBER LOCKEY: The utility tunnels, as I understand it, were used to run steam lines, electrical lines, things along those lines.

MEMBER MUNN: Right.

MEMBER LOCKEY: And looking at the worker statements, they did spend time in the tunnels going back and forth from one area to another. Sometimes they would wash their clothes in the tunnels.

And it was estimated -- I think NIOSH, and you correct me, they were going to estimate up to 20 percent of the time was going to be provided for the workers spending in these tunnels.

MEMBER MUNN: That sounds --

MEMBER LOCKEY: But they were utility tunnels. They weren't work tunnels. They were for running steam lines, electrical lines, things like that.

MEMBER MUNN: That sounds generous

assuming what one normally thinks of as a utility tunnel. Just wanted to make sure that was correct.

CHAIRMAN MELIUS: Okay. Phil.

MEMBER SCHOFIELD: I'm not familiar with the geology of this area. But I know based on geology in some areas if you have large granite, bedrock area, you can have high levels of radon naturally occurring.

So what I'm interested in knowing is how much of this radon is actually coming into these tunnels from the ground, and how much is residual coming from the contamination of the tunnels.

MEMBER ROESSLER: I think we should call on Chris or Jim to --

DR. NETON: Phil, you raise a key issue is that in the residual contamination period, only radon associated with the AEC activities -- radon in the tunnels associated with the AEC activities would be covered exposure.

So any radon present in the tunnels from unnaturally high concentrations just due to some localized deposition of radium from a geologic perspective would not be covered exposure. But the way the law is written though is if you can't distinguish between the two, you've got to assume it all came from the AEC operations.

So originally we developed a model that would, based on the contamination levels in the soil, predict the migration of radon through the soil and into the tunnels and came up with a value. As Dr. Roessler indicated, the model was, after much debate, rejected because the thought was that the input parameters were too variable to come up with some bounding value.

So then we were left with a measurement inside a conveyor tunnel that would clearly include radon from both the AEC operations and any infiltration into the tunnel. And we have proposed to use that

value as a bounding value even though probably some of the radon at least was due to natural -- from natural sources.

CHAIRMAN MELIUS: Henry, and then Brad.

MEMBER ANDERSON: Not to put Bill on the spot, but being the radon person, do you have any - you must have spent a little more time on this looking at the documents than us. I'd appreciate any thoughts you might have.

MEMBER FIELD: I have, I guess, a good number of thoughts. And there's a lot of areas, I think, of uncertainty. One of the areas of uncertainty are the validity of the measurements that were made back in that time period. Whether or not they could accurately reflect the concentrations within the tunnels is a question. My guess is that they were just grab samples that were done back then, but I have no -- I guess I don't have a whole lot of confidence in how accurate they

represent the actual conditions long term in the tunnels.

The other question that I have is, you know, in homes, and a tunnel is not a home, but in homes, you can't predict what your home may have by what a home next to yours has. There's so much variation between home to home, and the majority of that's due to source strength.

So I guess the concern is I have a hard time saying that we could use information from one tunnel to project what the concentrations are at another tunnel. So those are my two major concerns. But I'd like to hear from SC&A what their concerns were in that regard, why they don't think it could be bounded.

CHAIRMAN MELIUS: Go ahead, John.

DR. MAURO: During our Work Group meeting on Friday, we had an extensive and very animated conversation regarding this issue. And let me -- and at the time, I think

all the participants -- it was a true roundtable Work Group meeting to let each other know and try to explore ideas.

At the end of the meeting, it was asked by the Work Group whether SC&A has an official position regarding recommending adopting the surrogate. I'll call it a surrogate for better or worse. And the answer was, no, we did not feel at that time we could say with one voice that SC&A's position is such and such.

Over the weekend, we have had, as you can imagine, engaged internally. And let me try to paint the picture for you. I'll try to be brief. Difficult for me.

Listening on the conversation, picture you've got this conveyor tunnel that was operational during the operational period, relatively small compared to, let's say, those big, complex utility tunnels.

It has -- and the way it's designed, the way I understand it, it actually

has like a manhole cover. And they would lift the manhole cover. They drop ore down it during operations. It would be transported along some conveyor into the building. It was a very functional part of the operation. Some residual ore might have spilled. And this is during the operation.

So it was -- so you could almost visualize this operating unit during the operation period.

That ended, as we understand it, that conveyor tunnel, the operations were on standby. It was cleaned up.

But then, subsequently, I guess in 1946, some radon measurements were made and some characterizations were made of what might have been in the residue. And, apparently, there was a little bit of radium-226 in some sludge on the order of a hundred picocuries per gram, and some radon measurements that were made which were relatively low. I remember on the order of maybe 20, ten, nine -

- picocuries per liter. But we have the numbers, whatever they are.

What is it? One as high as 40. Okay. So here we have that.

Now the question becomes now we have this other tunnel, the utility tunnel nearby, not connected, but nearby, sitting in perhaps a setting in terms of soil characteristics that's a little uncertain how similar they are, but, you know, common sense will dictate they're probably not that different.

They were -- I understand they're about a hundred meters apart and now you have this other tunnel. Now this is what happened during the meeting. My first sense was that, you know, they're very different situations.

The utility tunnel, first of all, and which I learned on the call, it was very -- they were very large, but they also had lots of openings. They had stairwells opening down into them along the way.

And, by the way, my original concern, original concern was there was an exhaust fan on the utility tunnels which drew a negative pressure. Very slight, but we know that once you draw a negative pressure, you sort of create a circumstance where there's a tendency for some of the atoms of radon in the pore space in the soil adjacent to the tunnel might find their way in. And you could build up a pretty high concentration of radon under those circumstances.

But offsetting that was the information we discussed on the phone that you have all of these stairwells that are all along the way. And the tendency would be if there's going to be turnover, the air is going to more than likely come in from these openings as if we had open windows.

So, you know, and I'm asking myself the question where do I come -- this is on the phone now. My sense was that, it's likely that the concentrations of radon in the

conveyor tunnel, as measured at that time, were probably higher than what one might expect.

If I were to say what's your best judgment? My best judgment is probably those numbers that they observed in the conveyor tunnel are likely to be higher than the ones that we're saying might have existed in the utility tunnels where we have no information.

And then you say, well, is that good enough from a surrogate data point of view? Because that's really what we're asking ourselves now. We're saying can we use the conveyor tunnel radon measurements as a surrogate bounding -- plausible bounding for the utility tunnels?

And I say to myself, well, maybe. And here's where I'm going to add something new to the story that I came up with with the crew over the weekend. I say what would I do if someone asked me I've got a tunnel under a building, it's a utility tunnel, and I haven't

made any radon measurements, but I want to get an idea of what the upper bound radon concentrations might be in that tunnel.

Well, it turns out if you go online and you do a search on radon and utility tunnels, you will be amazed how much data there are out there. And this is sort of like building weight of evidence. We have the conveyor tunnel information. Okay. It is what it is. It's got its strengths, it's got its limitations as a source of surrogate data. And certainly reasonable people could agree or disagree whether or not it's a good source as a surrogate.

Then I say so what I like to do in those circumstances, what else can I do to come at this problem that would add to my knowledge and judgments? Well, what I thought would be a good idea, say, okay, let's collect the best information we can on what are the radon levels in utility tunnels that have been measured? And, apparently, there's a lot of

that data. Go in, collect the data, pick the upper 95th percentile.

So, well, right now knowing nothing else, I would say it's likely that the real radon concentrations that were in the utility tunnel were probably less than that value because you're sort of like saying there's one piece of information. Utility tunnels have a distribution, but I say is that good enough?

I say not really. You know why? Because the data that was gathered for all those utility tunnels that are out there in the database in the world out there, they didn't have residual radium-226 sitting around the outside of it that may have been responsible for a different circumstance elevating it.

So I would say, well, one way to answer that is say, okay, I'm going to make some numbers up now just so you can visualize what I'm talking about. Let's say it turns

out that the 95th upper bound on some population of data out there representing the concentrations of radon in utility tunnels in, you know, in the U.S. or in the Northeast or wherever you want to pick your set having done it, is 50 picocuries per liter.

I made that number up just now so that you could understand how I'm thinking. And I say, but what would I do then.

Well, I would do one other thing. I'd say - I would say, well, what is the average radium-226 concentration in the soil in the vicinity of the utility tunnels?

I'm going to make another number up. We have data, they have bore hole data, and let's say we find out it averages out to probably about 10 picocuries per gram of radium-226. I made that number up.

So, that says to us, gee, that means that the radium-226 levels that might exist in the vicinity of the utility tunnels might be about ten times higher than it

typically would be because most soils are around one picocurie per gram of radium.

Well, one other way to come at the problem is to take the 50 on the upper end, multiply by ten to get 500. Big number. Big number.

Now, I say to myself, okay, Jim's saying I've got a plausible -- I've got a surrogate that says 40 based on this tunnel. I just did this thing, a thought problem where I made numbers up. I don't know what the real numbers are, but it's tractable in my mind. You could do this exercise and you could see what it -- and let us speak to you and what does it say.

So, let's say at the end of that you walk away and you come up with 500 picocuries per liter.

At the end of that process, I ask myself if that's where it came out, did I just come up with a plausible upper bound?

And I'm going to tell you

something. I would say, yes, I did, even though it's ten times higher than yours.

What I just went through, the process I went through in my little thought problem where I made numbers up just so that you could follow my thinking, I would say that would be a plausible upper bound and I would be comfortable.

And this is SC&A's position now, that that process that I just described if we went through that process, we're not sure how rich the data are in terms of being able to build distribution. We're not sure when we do that, whether or not we're going to gather data that is going to be fairly reasonable of the circumstances that we're dealing with, but I know there's a lot of data out there.

And there's some pretty bad formations, some granite formations where it could be really nasty, a lot worse than the kind of material we're talking about here.

So, in the end of the story,

SC&A's position is, after going through this process and seeing what emerges from it and then comparing that to the NIOSH surrogate approach, we'll have information in front of us that, in my mind, will probably have everything we're going to -- other than actually having real measurements in the utility tunnel, you really can't do better than that.

And then at the end of that, here's the hard part. You got to sit around the table and say, what do you think.

Do you think we've just placed a plausible upper bound on the radon concentration in those tunnels, or not? And there's where the judgment will have to come before us, by the Board.

But this is the thinking that has emerged in SC&A over the weekend, and I'm hoping that it helps in your deliberations.

CHAIRMAN MELIUS: Okay. Brad, and then I want to give an opportunity for the

petitioners to speak.

MEMBER CLAWSON: You know, I was just looking at the measurements that they had in there and the utility tunnels were so much higher than underneath what the building was. 391.42 picocuries per gram.

DR. MAURO: I'm sorry. You're referring to the soil, the concentration of radium in the soil?

MEMBER CLAWSON: Yes.

DR. MAURO: There's some hits that are high.

MEMBER CLAWSON: These are the ones that they poked underneath there. This is the ones that they did later on.

I guess one of the things -- we keep using the term bounding and we've heard people discuss about our jargon and that they need to be able to help with it.

I really question our bounding sometimes. I've said this numerous times before. I can take and cure this all right

now. I can give you a number out there.

Now, will it be plausible? Well, that would be questionable. But that isn't what, in my personal opinion, we're here to be able to do. We're to take the weight of evidence that we have.

It bothers me that we go to such lengths and such grand scales to get out of putting an SEC out there.

I thought that's what this was put up for and it just kind of bothers me. It really does.

And I'm not questioning the integrity and so forth like that, but I just -- it just amazes me to what length we go. I thought that's what an SEC was put out here for.

CHAIRMAN MELIUS: Okay. John, you can sit down.

I want to hear the petitioners. Thank you.

Antoinette, are you on the phone?

MS. BONSIGNORE: Yes, I am.

CHAIRMAN MELIUS: Okay.

MS. BONSIGNORE: Can everyone hear me?

CHAIRMAN MELIUS: Yes, we can. Thank you.

MS. BONSIGNORE: Okay. Thank you.

Good morning, Dr. Melius, and members of the Board. My name is Antoinette Bonsignore and I am the petitioner representative for SEC-107 and SEC-154.

I want to thank you on behalf of the Linde workers for this opportunity to address the Board this morning.

I would also like to thank the Linde Working Group for their efforts these past two years during the Linde SEC evaluation process.

The Linde SEC-107 petition was filed in March 2008 and qualified for review on July 18th, 2008.

The ER for this petition was

released by NIOSH on November 5th, 2008. One day earlier, on November 4th, 2008, NIOSH also issued a revised Site Profile.

The revised Site Profile was intended to incorporate and resolve the issues raised by SC&A in their July 2006 review of the January 2006 version of the Site Profile.

The revised November 2008 Site Profile represented the third version of the Site Profile since May 2005.

Since November 2008, the Linde workers and their families have not only been waiting for a resolution on this petition, but an additional SEC petition covering the operational time periods that NIOSH will be discussing later this morning.

Simultaneously, during the SEC evaluation process, a number of individual Linde claimants petitioned the Department of Labor seeking to have their claims reopened because NIOSH issued that November 2008 revised Site Profile. Nearly all of those

requests were denied.

However, in a limited number of cases, the Department of Labor remanded previously denied claims to NIOSH to be reworked.

To my knowledge, two previously denied claims have been re-dosed and were eventually approved for compensation.

However, the Department of Labor summarily refused to remand eight other claims that I know of for reworks, and those claimants received boilerplate letters from the Department of Labor claiming that because NIOSH had not issued a Program Evaluation Report for Linde, their claims could not be reopened.

One of those claimants eventually took her case to federal court wherein the Department of Labor vacated their decision and agreed that since NIOSH had revised the Site Profile, the claim should have been reopened.

That claimant is still waiting for

a resolution of that claim despite the fact that the Department of Labor ordered a remand over a year ago.

I wanted to detail this history to drive home the point that Linde workers have been denied timely and fair compensation for the past two years while the SEC evaluation process has been proceeding.

And even though NIOSH issued their Evaluation Report for this petition in November of 2008, and after two years of back-and-forth negotiations between NIOSH and SC&A, the analysis contained within the November 2008 Evaluation Report has been materially changed as a result of the Working Group negotiations.

This brings me to a paramount issue plaguing the Linde SEC evaluation process: the complete and utter disregard for not only timeliness, but the clear and unequivocal language of the Act and the regulations interpreting the Act requiring

NIOSH to provide this Board with a claimant-favorable rationale for their recommendation on any SEC within 180 days of qualification.

In this case, NIOSH has failed to meet their statutory and regulatory obligations to provide this Board with a claimant-favorable rationale for recommending the denial of this SEC petition.

All the while, the individual claimants have been penalized for the very fact that the SEC petitions were filed in the first place.

I would like to direct your attention now to the presentation materials that Ted Katz distributed to the Board today. I hope everyone received those.

MR. KATZ: Yes, Antoinette. I emailed them to all the Board Members.

MS. BONSIGNORE: Great. Thank you, Ted.

On the first page of my presentation, I argue that NIOSH's preference

for completing the dose reconstructions over approving SECs is exemplified in the Linde SEC evaluation process by not only ignoring the 180-day statutory deadline, but by also refusing to reopen previously denied claims because the SECs have not been resolved yet.

At Page 2 of my presentation, I outlined some of the data-deficiency issues that should cause this Board to question the speculative nature of the dose exposure models NIOSH is relying on to support their denial recommendation.

Bear in mind the original dose exposure model presented in the original November 2008 ER has been materially changed after continued criticism and negotiation with SC&A.

Briefly, I would like to point to the data-deficiency issues that should lead this Board to question the credibility and validity of the negotiated settlement, for lack of a better phrase, that NIOSH and SC&A

have reached two years after the issuance of the ER.

For the Linde renovation period, there is no personal monitoring data, no air sampling data and no source-term data. NIOSH is relying upon surrogate data from limited data sources from other Linde time periods, mainly the D&D period of the late 1940s and early `50s and radiological survey data from the late `70s and early `80s.

A separate issue that NIOSH and SC&A have not reached agreement on is the worker exposure issue resulting from the Linde employees working in the underground utility tunnel system and those workers also using the tunnel system to travel throughout the Linde facility during the cold winter months in Buffalo.

Part of the reason why NIOSH and SC&A have not reached any agreement on the tunnel issue is because NIOSH has been ignoring this exposure issue since January of

2006 when Linde workers discussed this exposure issue with SC&A interviewers Kathy DeMers and Desmond Chan.

NIOSH had known, or should have known, about this exposure issue since January of 2006. But despite that fact, NIOSH has never addressed it in any of the Site Profiles and never addressed it in the November 2008 ER for Linde SEC-107.

Significantly, and I want to really emphasize this point to the Board, this is not a new issue that NIOSH was unaware of before they issued the November 2008 ER.

In fact, NIOSH only reluctantly agreed to investigate the issue at the insistence of petitioners as late as December 2009 when I raised the issue during a Working Group meeting.

The lead health physicist for this SEC, Chris Crawford, told me during that Working Group meeting, and I quote, we are unaware that anybody worked in those locations

for any demonstrable period of time.

That statement has of course been proven to be inaccurate, and I emphasize the timeline here to demonstrate to the Board that the November 2008 ER is flawed and not claimant-favorable because it completely ignores the tunnel issue.

And it ignores the tunnel issue because for some reason NIOSH never perceived any reason to evaluate this issue with any due diligence.

The November 2008 ER is flawed and not claimant-favorable, not only because the substance of the reasoning detailed in it has materially changed over the past two years, but also because it never addresses the tunnel issue.

NIOSH has failed to meet the statutory obligation to provide this Board with a claimant-favorable rationale for recommending the denial of this petition.

NIOSH and SC&A have been unable to

arrive at any agreement on whether NIOSH can reconstruct dose for worker exposures in the tunnels because there is little data available to assess radon levels.

There is no bioassay data, no field monitoring data and any assessment of source-term data is speculative at best.

NIOSH's most recent attempt to tackle this issue was revealed to the Working Group during the October 14th Working Group meeting just a little over a month ago.

NIOSH now wishes to compare exposures in the tunnels to the limited air sampling data from the uranium ore conveyor tunnel that was located in Building 30, but due to issues of technical equivalency, no agreement was reached during our last Working Group meeting this past Friday on November 12th to conclude whether it is reasonable and appropriate to compare worker exposures in the utility tunnel to the recently discovered and limited air sampling data from the conveyor

tunnel.

One member of the SC&A team said NIOSH was trying to compare apples and oranges.

The complete absence of data to measure exposure in the tunnels was made clear to the petitioners during a July 29th Working Group meeting when NIOSH considered the idea of literally going out to the present Linde site that is still being remediated by the Army Corps of Engineers to collect new radiological data samples.

Petitioners strongly objected to this plan because in our mind, NIOSH needs to evaluate the data that they actually have right now, not the data that they wish they had.

The policies of the SEC program should be that, when NIOSH realizes they do not have sufficient data to reconstruct doses, the remedy should be recommending the SEC, not circumventing the law and the very purpose of

the SEC program by trying to create a new radiological survey.

On Page 3 of my presentation, I outline my argument that NIOSH routinely ignores the 180-day legislated mandate, not to help SEC petitioners with their petitions, but only as a vehicle to justify their policy choice of favoring the dose reconstruction program over SEC approval.

This Board should assess the viability of this petition based solely upon what is contained in the November 2008 ER and nothing else.

Anything beyond that would not only violate congressional intent of the 180-day deadline, but ignore the remedial nature of this compensation program.

On Page 4, I outlined the issue I mentioned earlier dealing with NIOSH's refusal to reopen previously denied claims based upon the release of the November 2008 revised Site Profile and how NIOSH has been using a wholly

arbitrary and capricious standard to reopen some claims but has refused to reopen others.

The Department of Labor has refused to reopen claims for [Identifying information redacted], [Identifying information redacted], [Identifying information redacted], [Identifying information redacted], [Identifying information redacted], [Identifying information redacted], [Identifying information redacted] and, notably, [Identifying information redacted], but they did reopen and eventually approve claims for [Identifying information redacted] and [Identifying information redacted] based upon the revised Site Profile.

The one claimant that managed to force the Department of Labor to remand her claim to be reworked had to file a lawsuit to do so. Her name is [Identifying information redacted].

[Identifying information redacted]

filed a survivor claim in January of 2005. In October 2007, she received a recommended decision of denial from the Department of Labor.

She objected to that decision and after a hearing was held in March of 2008, a final decision of denial was rendered in October of 2008.

Requests for reconsideration filed both in November of 2008 and December of 2008 were denied by the Department of Labor in January of 2009, four years after the filing of the initial claim.

In May 2009, she filed a request to have her claim reopened based upon the fact that the Linde Site Profile had been revised in November 2008. That request was also denied. [Identifying information redacted] then appealed that decision in federal court.

On September 22nd, 2009, the Department of Labor vacated the denial and DEEOIC director Rachel Leiton declared, and I

quote, based on the review of the revised TBD, I conclude that the November 4th, 2008 revision does constitute a reasonable basis upon which to request a rework of the dose reconstruction in this claim. Additional development of the case shall include referral of the case to NIOSH for a dose reconstruction rework under the revised TBD for the Linde Ceramics plant. The new recommended decision shall determine the Probability of Causation based upon the results of the new dose reconstruction rework.

One year later the HHS Office of General Counsel informed [Identifying information redacted] that the Linde Site Profile may be revised by the end of the year, at which point, the dose reconstruction should be revisited.

[Identifying information redacted] is left with no path forward, but to keep waiting and keep hoping.

After nearly five years, justice

demands that both Linde SEC petitions be approved without further delay.

[Identifying information redacted] and the other claimants I just mentioned have been penalized because the Linde workers filed SEC petitions and NIOSH refuses to issue a Program Evaluation Report until the Linde SECs are resolved. This injustice demands swift action from this Board.

I would like to conclude this presentation by directing your attention to Pages 5 and 6 of my presentation.

On Page 5, I've transcribed the discussion I had with Dr. Melius during the Niagara Falls Board meeting in May of this year wherein I questioned why NIOSH is allowed to revise ERs ad infinitum.

Dr. Melius explained that the Board does not believe the 180-day statutory deadline is binding because NIOSH uses the information developed during this open-ended process to help claimants and petitioners.

I asked that, when NIOSH ignores the 180-day deadline, to further support their initial recommendation to deny the petition, the wholesale disregard of the statute is being used against the workers, not to help them.

Dr. Melius again stated that the 180-day deadline was not binding, that this was a question of judgment and that the Board wasn't ready to address the issue back in May.

The Linde petitioners ask that the Board address the issue now.

HHS has the exclusive authority to interpret provisions within the Act wherein legislative intent is unclear.

NIOSH has abused its authority by ignoring the very clear mandate to produce an Evaluation Report within 180 days of qualification.

Petitioners fail to understand how 180 days is unclear. How does 180 days give NIOSH wiggle room?

It does not, and Congress never intended such wiggle room.

I've outlined a remedy to these problems that I have identified on Page 6 of my presentation that would allow NIOSH the necessary flexibility to fully investigate the issues raised by SEC petitions and allow flexibility regarding the 180-day deadline without harming petitioners, without contravening the spirit and intent of this program.

Petitioners suggest that once material changes have been made to an ER, that the SEC should be approved either by NIOSH revising the original ER and recommending approval via 42 CFR 83.14, or in the alternative, the Board can step in and recommend approval.

Additionally, 42 CFR 83.13(b) provides that sometimes NIOSH will not have timely access to data and evidence it needs to evaluate an SEC.

The director of DCAS is authorized to conclude that such evidence and records will not be available in a timely manner and NIOSH cannot gather the data to accurately reconstruct dose in a reasonable amount of time.

Remarkably, NIOSH has never invoked this authority. Petitioners respectfully request that NIOSH invoke this authority now and declare that they are unable to complete dose reconstruction in a timely manner.

The final issue affects all of the workers during the residual period because all of the workers routinely used the tunnels to travel from building to building during bad weather.

It has been two years since NIOSH issued their flawed ER and that ER is not claimant-favorable, so, the workers are asking this Board today when is enough, enough.

The information developed by NIOSH

and SC&A after the 180-day deadline has -- after that deadline has passed, could then be used to revise the obviously inaccurate and incomplete Site Profile that NIOSH used to evaluate the SEC in the first place, and that new information can then be incorporated into the revised Site Profile to help individual claimants with non-presumptive radiogenic cancers and other claimants who do not meet the SEC criteria so they can receive more accurate dose reconstruction evaluations.

This plan would preserve the vital goal of timely and fair compensation while allowing NIOSH the necessary time to revise Site Profiles with greater accuracy and greater efficiency.

The Linde petitioners respectfully request that the Board ensure that the material changes made to the original November 2008 ER are not used by NIOSH to justify recommending the denial of the Linde SEC petition.

We urge the Board to recommend the approval of both Linde SEC-107 and Linde SEC-154.

All of the Linde claims that have been denied since the release of the first Site Profile in 2005, have not been evaluated by NIOSH using an accurate and complete Site Profile.

The singular and inescapable reality that the tunnel-exposure issue has never been addressed in any of the four versions of the Site Profile demonstrates this fact.

We ask that after five years of unfairly evaluated dose reconstruction claims and after two years of an SEC evaluation process that has flagrantly ignored the 180-day deadline, that the Linde workers should be granted immediate relief by this Board. These workers and their families have waited far too long for justice.

I want to thank the Board for your

time and consideration today. I would also like to ask you to review the correspondence that was contained in an Appendix that Ted distributed to the Board today that includes letters sent to the Advisory Board and NIOSH from Senator Schumer, Senator Gillibrand and from the Linde petitioners, as well as a November 15th Buffalo News article detailing the plight of the Linde workers.

I want to also thank Senator Schumer and Senator Gillibrand for their unwavering support over the years.

I will have a very brief comment about SEC-154 later today regarding the qualification of that petition and the technical issue that we have been discussing, dealing with when the tunnels were constructed, and I will have those comments later this morning. Thank you.

CHAIRMAN MELIUS: Thank you, Antoinette.

I think it's time for us to take

our break and so we will take a break. It's 10:30. We will reconvene about 10:45, 10:50, something like that.

And the Board Members should not leave the room. You have to have your picture taken.

(Whereupon, the above-entitled matter went off the record at 10:32 a.m. and resumed at 10:56 a.m.)

CHAIRMAN MELIUS: Okay. Let's get started.

So, for a little variety for everybody, we're going to talk about Linde petitions.

MEMBER LOCKEY: Can we just approve everything and move on?

CHAIRMAN MELIUS: Or disapprove. Whatever. Whatever the Work Group recommended.

(Laughter.)

MEMBER MUNN: Are we going to talk about 154 or are we going back to 107?

CHAIRMAN MELIUS: We're going to do 154.

MEMBER MUNN: Okay.

CHAIRMAN MELIUS: Frank, go ahead.

MR. CRAWFORD: Thank you. Somehow I feel like I've been here before, but I think that was the 107 petition.

The SEC-154 petition, which is for the -- what we might call the second production period at Linde, the petition was received on November 5th, 2009.

The proposed Class Definition, all employees who worked in any area of the Linde Ceramics plant in Tonawanda, New York from November 1st, 1947, to December 31st, 1953.

The petition qualified January 22nd of this year. The DOE Facility Database shows October 1st, `42, through December 31st, `53, as the covered period for the Linde Ceramics plant, and that's leaving out the residual period in 107.

The Class evaluated by NIOSH was

essentially the same as the petitioner's Class. We've been through most of this.

Prior to 1942, the Tonawanda laboratory was the main process building on the site at Linde. They refined pre-processed ores from a vanadium mining operation. In other words, they reduced radium ores to produce U308 or yellowcake and other oxides of uranium coloring agents.

They did produce 80 tons of yellowcake prior to the wartime period. Then in 1942, they contracted with the MED, the Manhattan Engineering District, to refine more uranium.

As a result of that contract, the MED caused to be erected several other buildings: 30, 31, 37 and 38, which became known as the Linde Ceramics plant.

The Step 1 processing was from ore to the yellowcake itself. There was a Step 2 process from yellowcake to uranium oxides, and then a Step 3 process from the oxide to the

fluoride, the green salt.

Just a little historical interest. The Step 1 ore-to-yellowcake process halted in the summer of 1946 so there were no more ores processed on site after that point.

The Step 2 process, going from yellowcake to oxides, was transferred to other plants in `44. So, that step was eliminated at Linde sometime in `44. That left only the Step 3 process producing the green salt.

Decontamination/decommissioning was done between July 1st, 1949, and July 7th, 1954, which was the final building turnover date or site turnover date from the AEC to Linde. Most of the work, however, was really done in 1949 and 1950.

We have the usual sources of information and really they were the same for the 107 petition as well. I won't go through these in detail.

I've already said a little bit about this, but the quantities are also of

interest. In June 1943, they began the Step 1 processing. That was done in Building 30.

They used both refined U.S. ores and raw African ores, the latter of which would have had a full radium complement in it to produce yellowcake.

Eventually 26,000 metric tons of ore were processed into about 2300 tons of yellowcake. Step 1 processing was conducted until July 31st, 1946.

I just went through this, but Step 2 processing was conducted simultaneously to convert the yellowcake to uranium dioxide until March 1944.

Again, the Step 3 processing began on November 1st, `47, and proceeded right through to June `49, at which point shortly thereafter, the decontamination effort began.

There was actually some decontamination of the Step 2 and Step 1 equipment occurring while the Step 3 processing was going on.

The potential for radiation exposures during this Class period, the internal sources -- since radon is the hot topic, I put it first.

Some radon exposure was present due to residual contamination of the surfaces by the ores. Particularly the African ores, of course. And we're not yet dealing with the tunnels. We're talking about the surface buildings.

There were relatively high levels of airborne contaminants, both uranium and its progeny, during operation.

By high, maybe it would help to say -- the TBD goes into some detail, but levels of 33 MAC were generally present during the processing period, where one MAC is 70 dpm of alpha radiation per cubic meter. That becomes more important later when we talk about the decontamination effort itself.

For external sources of exposure, of course, we had photon and beta radiation

exposure from the process materials and the residual uranium contamination of surfaces.

Neutrons were not a significant source of external exposure to Linde site personnel.

In terms of data, as you may know, historically, NIOSH suggested the early period, Step 1 processing period, be accepted as an SEC. It was a NIOSH initiative. Because essentially there was no -- there were no data, I should say, for internal exposures and almost nothing for external exposures prior to 1947.

But beginning in late `47, we have much more data. We have 641 uranium urinalyses from 75 different employees. We also have general area, 240 samples, and breathing zone, 178 samples, of air samples are available during the period from `47 to `54. Most of those were collected in `48, `49 and `50.

And then later we have some FUSRAP

data in the `76 and `81 surveys, and even later in 2000 and so forth.

In terms of external monitoring data, we have 6,000 external dosimetry readings -- are available from the period from January `48 through December of `49. That's coincident with the Step 3 processing and the beginning of decontamination.

You're familiar with the evaluation process. It was a two-prong test established by EEOICPA.

The first question is, is it feasible to estimate the level of radiation doses of individual members of the Class with sufficient accuracy.

The second question is -- if the first is answered yes, we don't need the second question, is there a reasonable likelihood that such radiation dose may have endangered the health of members of the Class.

NIOSH found that the available monitoring records, process descriptions and

source-term data are adequate to complete dose reconstructions with sufficient accuracy for the evaluated Class of employees.

Looking at the feasibility for internal dose, we have enough urinalysis data. We were able to establish a geometric mean and standard deviation.

The breathing zone and general air sample data were compared with this co-worker urinalysis data and found to be compatible. That is, the predicted values from the air sample data were very close to the actual values found.

So, NIOSH finds that bioassay and air sampling data are sufficient to bound the maximum internal dose.

Now for radon, as explained in the TBD, all surface buildings are assumed to have a ten picocurie per liter radon level. This was established from what I might call a quiet plant period where readings were taken in between processing periods.

The Step 3 processing itself did not handle ores. So, there's no reason for there to have been especially high radon levels during that time.

During the Step 1 processing, radon levels were greatly above ten picocuries per liter, by the way.

Now, we get to the fun part: the utility tunnels near the ceramics plant. After considerable research, we found that they were not built in the ceramics plant area until after 1956.

Dr. Lockey admirably summarized the findings there. I sent to the Board Members the applicable engineering documents where there are notes on the side of one of the engineering drawings which clearly state that in `37, these tunnels were designed and built.

In `57, there were tunnels built up near the ceramics plant, the north part of it. Then, in `61, more extensive tunnels were

built that continued from the ceramics plant area down to Building 8 and past Building 70 on the east-west line.

We think that is very well established. And as Dr. Lockey also pointed out, there are various employee or witness statements, but most of the employee statements that we have do refer to Building 14 tunnel being in existence before 1954, which is of course true.

The reason that the Building 14 tunnel area we believe does not present an elevated radon hazard, is because bore samples, bore hole samples taken later, I believe in the `78 to `82 time frame, show that near that tunnel between Building 14 and Building 8 there was no elevated radium concentration in the soil at any depth. In other words, everything was background for radium.

There was increased uranium concentration, which is what we would have

expected from the documentary evidence.

The processing of ore both before the World War II period and -- well, especially before the World War II period, involved pre-processed ores without uranium content in them.

During the MED period, Building 14 was used as a test lab to test procedures and to assay samples and that sort of thing. So, they had very small amounts of African or other ores brought into them. And there's no evidence of contamination near the building from African ores.

External exposures, we propose, can be bounded by using coworker dose based on the existing external dosimetry records for the Step 3 operations period and applying the methods in the TBD to divide workers into exposure classes during the decontamination work.

The word surrogate data seems to have taken on several meanings. In one sense,

coworker data could be considered surrogate data because it's applied to workers who may not have been monitored.

But in the sense that I think the Board has usually handled the term, this coworker data would not be surrogate data because it's based on the process workers working in this plant with these operations.

If we were going to another site and taking other uranium workers' sample data, I think the Board has established that that is what surrogate data is.

So, I just mention that because I felt there's two different ways of expressing that point. And the way that I am using it is it's only surrogate data if it comes from another site.

CHAIRMAN MELIUS: There's at least two, but many more.

MR. CRAWFORD: Yes, I'm sure.

On the feasibility summary, we believe we can estimate dose with enough

certainty, with sufficient accuracy for all sources of exposure.

The recommendation, then, is that NIOSH finds that radiation dose estimates can be reconstructed for compensation purposes.

And this I threw in because I thought it might be useful to have some visual representation of the tunnel system. I'm sorry I can't make it larger.

If I can desert the mic and speak loudly for a moment so that the Board can see what tunnels I'm talking about, this is Building 8 and Building 14.

The original tunnel system went basically through here. That's the --

(Off the record comments.)

CHAIRMAN MELIUS: Frank, we actually have a pointer. I was just suggesting to Ted that we break the budget next year and buy a pointer for DCAS, but I'm sure you have about ten of them back in the office, right?

MR. CRAWFORD: We know that these tunnels existed prior to the MED period. And these are the tunnels where the bore hole samples show there was no excess radium component in the soils over the tunnels.

The 1957 construction drawings show that this section of tunnel here from Junction Box 1 to Junction Box 5, was constructed in that year.

In 1961, most of the rest of the tunnel system was built from Junction Box 6, 7 and 8, and then down here past Building -- I think this is 70 out to here. So, those buildings existed during -- or those tunnels, I should say, existed during the residual period, but not during the SEC-154 period in that area.

And bore hole samples from around Building 30 do show not only elevated uranium levels, but elevated radium levels as well.

Of interest, the tunnels had an average depth of about three feet from the

surface. That is, the roof of the tunnel was about three feet from the surface.

The bore holes show that the contamination was also confined to within three feet of the surface in almost every case.

The uranium, in other words, is not migrating down through these clay soils at any great rate, because many of the bore hole samples were done fifty and sixty years after the contamination.

Inside Building 30 in the southeast corner, there's a grate called the grizzly which was over a tunnel and then cut beneath Building 30.

In the tunnel was a conveyor belt. It went, it's hard to say, but 60 to 90 feet, from looking at the drawings, to the ball mill operation. Again, if I can get this, it went from about here to about the middle there -- middle third.

The horizontal conveyor conveyed

the ore to a vertical conveyor which was combined with a weighing machine, which brought it up to the level of the ball mill where it was ground and then later dissolved.

The reason I'm going into this a little bit is you can see that the distance from the tunnel here and the tunnel outside is not that great. It could be a hundred feet or so, and maybe a little closer to the horizontal tunnel here.

The reason we think the ore tunnel provides a reasonable certainty of a bounding estimate, is that; A) it did carry thousands of tons of African ore and it was a messy operation. We know it was from many reports from the period.

The workers would simply empty a bag of ore down through this grating, which would then fall on a conveyor belt. It would be conveyed 60 or 90 feet. Then it would be dumped into a waiting conveyor belt that was running vertically, a bucket kind of conveyor

belt.

This was very messy. The dumping in the grate was messy, and especially at the ball mill end. That was where we found the most contamination, from the records.

The transfer from the horizontal to the vertical conveyor was also a very messy operation. Lots of dust and lots of detritus in the tunnel.

I think Dr. Lockey also mentioned that one of the -- or it may have been Jim Neton, that a reading taken in the ore conveyor tunnel in the sludge at the ball mill end, showed a hundred picocurie per liter -- not per liter. I'm sorry. Hundred picocurie per gram concentration in the sludges.

It is true that certain other plants on the site you can find even more radium concentration, but; A) this is inside the tunnel, and that's a big distinction.

It's one thing if you have high radium content someplace 20 feet or 50 feet

from the tunnel or a hundred feet from the tunnel, and quite another if you deposited the radium inside the tunnel. We expect that will give us a fairly bounding measure of the radon.

Naturally, we'd all like more data all of the time. But in this case, we think it's a reasonable supposition that this is a bounding number. That number, by the way, is 44 picocuries per liter that was measured at the ball mill end of the conveyor tunnel.

I should also point out that, while a measurement was mentioned of 390 picocuries per gram of radium taken from one of the surface bore hole measurements, that was not directly over the tunnel. To my memory, it was at least 20 feet away. It may have been farther. So, we have to keep that in mind.

Most of the high concentration looks like it came from surface spills. That is, it's confined to the top layer of the

ground. And a lot of it is near the railroad spurs which you can see here -- it's not on there. Oh, here we go. Right here.

These spurs are probably the important ones because the ore bags were deposited in the southeast corner of Building 30. So, there's a very short distance between the rail spurs and there and it was fairly high concentration. Some of it not too far away from the tunnel, but that's why we had some high readings.

Looking at the site, however, it's interesting to note that most of the tunnel contamination inside the tunnel now, presumably from groundwater precipitation, occurred in this section of tunnel between 14 and 8 and again up here near Junction Box 6.

This is a half-mile tunnel system, by the way. So, there are extensive areas of the tunnel that were not contaminated by surface contamination.

The reason I mention that is that

in our assumptions, we assumed for the surface external dose and for the surface contribution for the radon in the tunnels, that the tunnels were uniformly contaminated at the 95th percentile level of all the surface measurements that were made in the tunnel, and there were extensive measurements made there in the year 2000, so that we've taken a very, I think, a very claimant-favorable approach to both external dose and internal dose from resuspension and from the radon component that the surface contamination provided.

Now, we didn't use that in the model. We prefer to use the conveyor tunnel actual measurements because, as Dr. Field has pointed out, models may not be appropriate because of variation and very short spaces on a site.

I hope that helps a little bit to visualize what we're talking about.

MEMBER RICHARDSON: Where are the injection wells?

MR. CRAWFORD: The injection wells; they're scattered. That's a good question.

The reason we don't think they're a significant factor in the Building 30 sections of the tunnels, is that the tunnels were built way after -- about a decade after the injection wells had ceased operating.

So, any spill of effluents -- and, by the way, these were extremely dilute -- highly caustic, but extremely dilute solutions considering the uranium and radium, the radionuclides of interest.

So, any spills that occurred, many of them drained off in a drainage ditch, went into local creeks, polluted the Niagara River, that sort of thing.

But what they didn't do is they didn't leak down into the tunnels, because the tunnels weren't there at the time.

Now, down around Building 14 we have bore hole samples again. If there had been leakage near those tunnels or overflow of

effluent that had covered the tunnels, we'd see increased radium levels, and we don't.

There were bore holes, I believe, in this area, but not near the tunnel.

MEMBER ANDERSON: How deep were the wells?

MR. CRAWFORD: My memory is, not very deep. About 150 feet. There was a -- there's a lot of correspondence on that.

The Linde people wanted much deeper wells drilled, but the MED people wanted to save money and that's a New York State report, it's a rather highly colored report, but nonetheless there was a lot of controversy about that.

CHAIRMAN MELIUS: I remind anybody asking questions to please use the mic for the benefit of our court reporter.

MEMBER GRIFFON: I just had a question while you still had the map up.

Can you point to Building 57, 58 and 90 on there? This is more relevant for

the first petition.

MR. CRAWFORD: I wish I had more buildings and more labeled on here, but, no, I can't.

My memory is, they're up in the north corner -- northeast corner here.

MEMBER GRIFFON: I can't see your pointer.

MR. CRAWFORD: I can't see it either. At any rate, I believe they're up in this area, but I can't provide you with any detailed drawing.

MEMBER GRIFFON: Yes, okay. I was just curious because one of the later -- I think it's the Bechtel survey -- and again this is more pertinent, probably, to the prior petition, but they indicate residual contamination around those buildings and I wondered how far they are away from the main process buildings and stuff.

Anyway, thank you.

CHAIRMAN MELIUS: Okay. Anymore to

present?

MR. CRAWFORD: No.

CHAIRMAN MELIUS: Okay. Then I guess the Board can questions.

Anybody have questions right now?

Go ahead, Jim.

MEMBER LOCKEY: I just have one because I couldn't remember when the -- according to the air samples near the utility tunnels, when was that done and where were they obtained from; do you remember?

CHAIRMAN MELIUS: Jim, could you get closer to the mic in the future when you --

MEMBER LOCKEY: Sorry. When the Corps of Engineers, I think, in `78 or `79 took samples around the tunnels, where was that done; do you remember?

I just don't remember.

MR. CRAWFORD: Where or when?

MEMBER LOCKEY: Where was it done?

Do you know where they took those

samples? Was it around the utility tunnels?

MR. CRAWFORD: Well, actually they -- it was part of a much larger work. They took many bore hole samples around the utility tunnels, but they weren't specifically focused on the utility tunnels, for various reasons.

The way they decided to drill a bore hole, unfortunately, makes the sample very biased. So, we can't use it to provide a GSD or other statistical measures.

They did a gamma radiation survey at the surface. This is apart from the buildings. They also did bore holes inside buildings. But for the general surface of the area, they did a gamma survey, and they went to the hottest spots of the gamma radiation survey and drilled there to check what was there in the soils.

That was done in `78. It was done again, I believe, in the `81-`82 period. And it was done again in later remediation periods under FUSRAP.

But they weren't focused on the tunnel at that time. They were measuring where the ore concentrations were hottest. And we had to plot the tunnels and then plot the bore holes to get some idea of which bore holes were close to the tunnels and which weren't.

CHAIRMAN MELIUS: Okay, Dick.

MEMBER LEMEN: I understand this may have been brought up previously before I was on the Board, but this applies to both of these petitions on Linde. And that is when you do your dose reconstruction, and this is specific for lung cancer, how do you take into consideration the fact that the worker may have smoked?

Because epidemiologically, radon and cigarette smoking act synergistically and enhances the effect of the radon exposure.

MR. CRAWFORD: That information is sought by the Department of Labor in a questionnaire. Anybody with a lung cancer is

asked whether or not they were a current smoker or a former smoker.

And if they're a current smoker in particular, how much, how many packs a day they smoke.

Then that information, in turn, is put into our dose reconstruction program called IREP, and that does lower the Probability of Causation somewhat.

MEMBER LEMEN: No, it would enhance the Probability of Causation.

MR. CRAWFORD: For the uranium component. Let me put it that way. If you compare a nonsmoker that has the same dose, radiation dose, then they will have a higher Probability of Causation than, say, a current smoker would have with the same radiation dose.

MEMBER LEMEN: I'm not sure that's correct.

MR. CRAWFORD: Exactly. I'm describing the process.

MEMBER LEMEN: I think that may not be correct.

MEMBER ZIEMER: Could I comment on that?

What the model does, Dr. Lemen, is the two cases with identical doses, it will -- and both having lung cancer, the smoker will have some of his cancer attributed to the smoking.

MEMBER LEMEN: So, that's not --

MEMBER ZIEMER: Well, that's what the model does. Jim can explain it here.

DR. NETON: Yes, there's two issues here. One is the adjustment for -- this is Jim Neton -- for the risk associated with external exposure and smoking, which is one model. That's the NIOSH IREP model. It was developed by the National Cancer Institute. And there's a separate model in NIOSH IREP for radon.

What I can't remember right now -- which was developed from the Colorado Plateau

uranium miner's data. And I'm embarrassed about this, but I can't remember if there's a smoking adjustment in the Colorado Plateau uranium miner data or not.

MEMBER LEMEN: It seems to me the way you're explaining it, you're penalizing the smoker.

DR. NETON: That's actually, in fact, what happens.

MEMBER LEMEN: That should not --

DR. NETON: Because the chance that the radiation --

MEMBER LEMEN: That should not be done.

DR. NETON: Well, the concept is the chance that the radiation caused the cancer goes down because there's another factor that is contributing to his overall chance of developing cancer.

MEMBER LEMEN: But that's not consistent with the epidemiology. That is absolutely penalizing the smoker.

DR. NETON: Well, he certainly would have a higher risk of developing cancer.

MEMBER LEMEN: Absolutely, but your dose response model would underestimate and bring down his potential for getting compensation.

DR. NETON: Perhaps this is something I could maybe discuss in a future meeting or --

CHAIRMAN MELIUS: Or, yes, maybe your science update. Let's get back to Linde and --

MEMBER GRIFFON: Just for the record, though, there is a third issue, if I will. And that's the -- an issue I brought up probably seven years ago, I don't know, is the retention of how smoking affects the retention in the lung.

MEMBER LEMEN: I'm well aware of that.

MEMBER GRIFFON: And ICRP has looked at that and I asked NIOSH to consider

those factors.

DR. NETON: Right. And I think at the time --

MEMBER GRIFFON: That's the dose reconstruction side. That's not the IREP. That's not the epi side.

DR. NETON: Right. And at the time, we had concluded that the science just wasn't there -- the quantitative science wasn't there for us to make that adjustment.

MEMBER GRIFFON: And I don't totally disagree with that. ICRP is a little inconclusive on where to go.

DR. NETON: Right. Exactly. But we are aware of the issue and it's a good point.

MEMBER GRIFFON: So, I just wanted to clarify. Go ahead, Jim. Sorry.

CHAIRMAN MELIUS: Okay. I'd like to hear from the petitioner.

Antoinette, you said you had a few more comments on --

MS. BONSIGNORE: Yes, I did.

Can everyone hear me? Hello?

CHAIRMAN MELIUS: Yes, we can hear you.

MS. BONSIGNORE: Okay. I wasn't sure because there's been a lot of outside conversations I've been hearing on the -- okay. Thank you.

Thank you again, Dr. Melius and members of the Board for providing this opportunity for us to address the Board this morning.

There's two general comments that I'd like to make. The first is that, after hearing this presentation from NIOSH, it's very technical, very complicated, very hard to follow for the layperson.

It just reinforces the problem -- the inherent problem in how these SEC petitions are evaluated.

You have an ER that has just been issued about a week or so ago and now

presumably the Working Group would begin to take a look at the particulars of it along with SC&A, inviting the same problems that I identified with the SEC-107 evaluation process: an open-ended process where the original Evaluation Report becomes eventually materially changed and NIOSH is not held to what is contained in that original Evaluation Report.

So, I just wanted to reemphasize that point because, unfortunately, the SEC evaluation process is inherently a flawed one because it invites the disregard of the 180-day deadline and the statutory obligation associated with that.

The second point I wanted to talk about was -- is an issue that I had raised back in August of this year in a letter that I sent to Dr. Howard on behalf of the Linde workers. And it deals with whether the decision-making process surrounding the qualification of this petition was proper and,

consequently, whether the subsequent evaluation presented in this ER is based on an objective and proper evidentiary standard that meets the statutory and regulatory obligations of the SEC program.

NIOSH regulations require that NIOSH qualify and evaluate each SEC petition separately site by site.

In my letter to Dr. Howard, which is contained in the appendix documents that Ted distributed to everyone today, there are a set of emails between NIOSH staff and their contractors demonstrating what the petitioners believe to be the tangible effects of NIOSH's policy and previous position to deny SEC petitions.

These emails, we believe, show how this policy has affected the Linde workers, that this SEC petition was not evaluated independently and as a separate and unique petition, but that considerations were taken into account of whether qualifying this

petition in the minds of NIOSH staff and their contractors would have negative consequences regarding whether NIOSH could justify dose reconstruction determinations at any site.

The concern being that, if NIOSH qualified this petition, they would have greater difficulty justifying SEC denial recommendations at other sites.

I would refer the Board to the August 9th letter where I outlined these concerns and talked about these improper considerations that were used by NIOSH and their contractors in evaluating this petition.

I would ask that you review specifically PDF Page 5 and PDF Page 9 at some point today.

The second issue deals with this tunnel-exposure issue. Now, NIOSH is claiming that the Linde tunnels running under Buildings 30, 31, 37 and 38 were constructed outside of the SEC-154 period, namely, in 1957 and 1961.

Consequently, NIOSH believes the

radon exposure issue that was debated in SEC-107 is not really an issue here, and I submitted affidavit statements from three former workers, two of which were actually interviewed by SC&A during the Niagara Falls Board meeting, about the tunnels.

And I also provided some other documentary evidence from the New York State Assembly Report from 1981 talking about contamination from the overflow of effluents into the tunnels.

Additionally, NIOSH also turned over two documents that they discovered recently that they believe supports their contention that these tunnels were constructed in 1957 and 1961.

I forwarded both of those documents to the workers, and they had an opportunity to review them just last night.

I ask that NIOSH and the Working Group review the document identified as SRDB-083626 which is titled Utility Tunnel Plot -

1, and specifically review a tunnel map at Page 11 of the document titled Property Telephone Line Layout.

This map is dated September 28th, 1953. This map shows all of the Linde tunnels at the Linde site, including the tunnels running under Buildings 30, 31, 37 and 38 existing during the SEC-154 time period.

The person who pointed this out to me was one of the workers that submitted the affidavit who dispute the fact that these tunnels did not exist during the early 1950s. And he actually provided a great level of detail about the tunnels to the SC&A review team with Steve Ostrow and Arjun Makhijani back in May.

And he has a great level of -- great deal of knowledge about the tunnels and great level of recall, and he pointed out to me that that map was dated September 28th, 1953, and it shows the tunnels running under Buildings 30, 31, 37 and 38, and they're

actually there.

So, I would ask that the Working Group and NIOSH take a look at this, because this is a critical issue about radon exposures in the tunnels for this time period. And it calls into question whether SEC-154 ER presents a claimant-favorable analysis that justifies the denial recommendation contained within it.

Two other things that I wanted to point out as a result of Mr. Crawford's presentation in that he mentioned that NIOSH is relying on a coworker model. And this is an issue that I actually raised in the Working Group this past -- last Friday.

And I had asked the Working Group and SC&A whether there were any consistent policy standards that the Board had adopted similar to the policy standards that they had adopted for other site or surrogate data, and there are no standards set up for coworker models that are parallel to the standards that

have been set up for surrogate or other site data, and what those application standards should be and what the plausibility standards should be.

I think that's a significant problem here because we don't have a consistent policy that you can rely upon across -- to be applied here. And the fact that you're using a coworker model and we don't really have any plausibility standards is a concern that I think the Working Group is going to have to address.

And finally, I'd just like to say that a lot of the workers feel that often their statements are only considered relevant and only considered reliable when they fit the narrative that NIOSH has established already. And when they don't fit the narrative, they're not considered reliable.

And this is a consistent problem for the past few years whenever workers have submitted affidavits, statements. They feel

that they are often ignored. And that whenever they do submit statements, that NIOSH just comes back with additional evidence, a couple, you know, whether it's a month later or six months later trying to refute it and questioning their credibility.

And I just raise this issue because it really is a serious concern not just at Linde, but at all of these sites where workers feel that they're being ignored and not taken seriously.

And then just one further point that I wanted to mention is that -- actually, I think that's it.

CHAIRMAN MELIUS: Okay. Thank you very much.

MS. BONSIGNORE: Yes, that's it. And I just wanted to again just remind the Board that the correspondence that I mentioned earlier about the letter to Dr. Howard is contained in that appendix document that Ted distributed today.

CHAIRMAN MELIUS: Okay.

MS. BONSIGNORE: Thank you again for your time and consideration.

CHAIRMAN MELIUS: Thank you. I think we're going to break for lunch now. I would like to, though, sort of make some plans for this afternoon.

The Texas City petitioners had asked that we try to set a time when we'd be discussing Texas City. So, I'm going to set that for 3:30 at the start of our Board work time.

And then following that discussion, so I'm guessing four o'clock or something, it may not -- then we will go on and discuss Linde after that.

So, for those of you on the phone, if that helps you during when to -- again, those times are Mountain times. So, take that into account and we'll try to reconvene at one o'clock and we'll see you after lunch.

(Whereupon, the above-entitled

matter went off the record at 11:40 a.m. and resumed at 1:07 p.m.)

A-F-T-E-R-N-O-O-N S-E-S-S-I-O-M

1:07 p.m.

CHAIRMAN MELIUS: If everyone would get seated, we'll get started. And we have a pinch-hitting executive secretary since ours seems to have gotten lost on the town over lunchtime. So, Stu agreed to fill in.

(Stu Hinnefeld acting as DFO for Ted Katz.)

CHAIRMAN MELIUS: Okay. So, before we get started, I need to know from Board Members -- someone told me that some Board Members are leaving tonight or early tomorrow.

Well, we're scheduled through 11:00. We'll finish by 11:00 because I want to leave by 11:00 or so.

So, does anybody else have to leave early other than Mark? Okay. Okay. I just want to make sure that if you do, we have time for your reports and get input and so forth. Okay. Very good.

Okay. This afternoon we're going

to be talking about an issue that has come up at several sites. And what we thought we would do, we're not talking about the specific sites. We're talking about the -- or we'll be mentioning the specific sites, but we want to talk about more generally about this issue because it is the source of difficulty for a number of work groups.

So, I thank Josie for mentioning and suggesting that we do this, and then Joe Fitzgerald, because I think it will be helpful. So, at least we are all familiar with it. I'm not sure we're going to try to settle anything with it today or certainly not at a specific site, but at least that we get everyone familiar with the issue and so forth.

I will -- Ted did ask me to remind all the Board Members that since some of you will be conflicted -- we're talking about several sites in general, but some of you will be conflicted at specific sites.

Please be careful about not

offering questions or comments related to a site that you're conflicted on.

So, during the Q&A, but -- so, Jim, go ahead.

DR. NETON: Okay. Thank you, Dr. Melius. I know it's after lunch, so I'll try to be witty and keep you engaged so that you won't fall asleep.

This is a tag team presentation. I'm going to do the first part and Joe Fitzgerald from SC&A is going to follow me, and then I suspect there will be time for some Board discussion after that.

CHAIRMAN MELIUS: Can I just add that we asked that this be sort of a joint presentation and there's been coordination between the two.

This isn't our -- sometimes we get into point/counterpoint. That's not the purpose of this.

MR. NETON: Hopefully, we won't get there.

CHAIRMAN MELIUS: Yes.

DR. NETON: The title of my slide is slightly different than the title that is on the agenda, but I think it captures the essence of what we're trying to discuss today. And that, in my mind, is the Reconstruction Of Doses in The Absence of Bioassay or Air Monitoring Data. At least that's what I'm going to focus on.

I think, in general, this subject could be applicable to external as well. But, in fact, almost all the cases that I could think of it's arisen when we're trying to reconstruct doses where we don't have a good set of coworker or bioassay data or even good air monitoring data that we can rely on.

This has come up in the context of several SECs. I can think of -- SEC evaluations: Mound, Pantex -- oh, there's another one. I'll think of it.

But I want to -- even though it came up in the context of SECs, I'd like to

sort of take a step back and go back to the fundamentals of dose reconstruction and what drives us to do what we do and what allows us to do what -- how we do it and sort of set the stage, because that's really what is the fundamental basis of adding an SEC is, can you or can you not do a dose reconstruction.

So, the next slide I have should be very familiar to most of the Board. Maybe not so much with some of the newer members, but this is the NIOSH, what we call hierarchy of data types used in, in this case, the internal dose reconstruction.

And as outlined here, you'll see obviously personal monitoring data, you know. A bioassay sample on a person would be as close to the gold standard as you can get, and preferably multiple samples over time and that sort of thing. Followed by coworker data, and we're very familiar with how we've been using coworker data in this program. And then followed by area monitoring data which would

be -- breathing zone samples of course would be the best, followed by other samples, maybe general area process.

But then way down at the bottom we have source term, and I think this is the area where we're running into some concerns or have some issues.

If you look at it, it says the examples are source quantity coupled with process knowledge.

So, if we have no bioassay samples on a person, we have no air monitoring data, but we know kind of that they had some stuff, they had a couple curies of cesium or they were working in a hood with protactinium-231, something of that nature, but we have no evidence of bioassay sample being taken, how can we go about convincing anyone that we can bound that dose?

And so I submit that that's -- this is the area that we really need to focus in on.

I always like to ground ourselves in the regulation, because that's what drives how we do -- and I pulled out 42 CFR 82.17. You'll note there's a correction there. I think on your handouts it says -- I forget what it says. 81.17, maybe. I don't know, but it is 82.17. Your handout probably says 81.17, but it really is 42 CFR 82.17.

And in that regulation it actually, you know, one of the subsections to 82.17 says what types of information could be used to supplement or substitute for individual monitoring data.

(Ted Katz returns as DFO.)

DR. NETON: And here we have listed three categories. The first one is very much like we talked about on the hierarchy slide, monitoring data from coworkers. There's a bunch of verbiage after that. I didn't bother to put it in there. I don't need to talk about that.

But the second one is a

quantitative characterization of the radiation environment such as area dosimeter readings, general area surveys, radioactive contamination surveys, that sort of thing.

So, what kind of information do you have from the workplace that gives you some confidence that there was either no exposure or some level of exposure that can go about trying to estimate the dose?

And the third type of information is this quantitative characterization of the radiation environment based on source materials, tasks, locations and radiation safety practices, and this is one area where it really gets to be a little bit sticky.

I think we've used this approach in the Los Alamos SEC and it has been the subject of some controversy as of late. So, we're going to talk about this a little bit, how we -- what we do.

The examples of types of information that we would use, this is also in

the regulation codified under 42 CFR 82.14. This is not the exhaustive list that's in there, but this is parts of it.

But if you see on the right-hand side, you see things like surface contamination surveys, area survey results, source-term characterization data, general process description.

So, clearly when the regulation was put forth, it was the intent that we would be doing some of this as we went along. It's not something that NIOSH has just invented recently. We felt that this would be part of our practice down the line.

So, using that as a backdrop, I'd like to talk a little bit about, you know, with the regulations as the background, what are the key considerations that we would apply when using these types of information's.

For example, characterization of the source parameters. One needs to look at the source strength.

Clearly, a source that is a couple picocuries versus megacuries is going to have a different potential for exposure.

But then on top of that, what are the physical properties of the source? Was it a liquid, a solid, a gas? The type of containment; was it sealed or loose? Those type of things very much come into play when you're trying to determine the potential for generation of airborne.

When you think about it, this is a lot of what goes into -- one person writes a radiation work permit at a plant. You have to characterize the environment, and then you establish what types of controls and monitoring will be put in place.

The evaluation potential for internal exposures. In addition to what the source looked like and what form it was, you know, what was the person doing with the source? Was there any grinding, rolling or cutting operations used?

We need to consider engineering controls such as was it in a glove box with negative pressure, degrees of ventilation, that type of thing.

And then a review of the contemporaneous health physics program. What kind of program? What evidence do we have? What type of program was in place during the period under which we're evaluating those source conditions?

And that would involve evaluating the procedures related to the internal/external exposure control, or in this case, I'm talking about internal control, the radiation work permit system. Did they have one? Did they conscientiously evaluate every potential source of exposure?

And did they have -- probably as importantly, if they had that program in place, was there a contamination control monitoring program in place that demonstrates that they actually did what they said they

were going to do?

I think this is going to become a key point as we go through this discussion. So, you know, those are the key considerations. This is what I would call general concepts, and we talked about the contamination control programs. I'd like to expand on that a little bit.

So, for a well documented health physics program, that is, you know, we've seen sites with a lot of procedures that are out there that talk about doing A, B, C and D and checklists that need to be generated, but we need to establish that the required surveys were performed.

Also, we need to evaluate that the representative levels of contamination were observed.

So, if there were sources in place, did they go about and take periodic surveys whether weekly, monthly, annually at the time that the source was used, that type

of thing.

And then we need to verify that if they did find evidence of contamination, was there some sort of follow-up samples that were taken as appropriate?

One thing that we have learned over time in this program, is that it's not enough to say that we've identified the three people that work with the source and we have their names. Because we've done that before and Joe's smiling, I'm sure, because we've been down that road and you also needed to have some type of evaluation as to the potential exposure and support workers involved with that with the sources as well.

Because even though those workers were monitored, there may have been custodial staff or maintenance staff, crafts types that were involved in the, you know, workings of the plumbing and electrical apparatus, that sort of thing, that could have been exposed as well and were they potentially exposed.

I would like to point out, though, even though, you know, the regulation says a quantitative characterization should be evaluated or done, I think for certain conditions we have to say it's possible to conclude that no exposure potential existed.

So, you know, that's probably -- I wouldn't say rare, but it would be difficult to prove.

But I think in certain situations such as -- I have a couple simple examples here -- sealed sources and containers that have been determined to be free of contamination. They were surveyed. They were never opened. One would be hard-pressed to come up with a scenario that, you know, people were heavily exposed from those sources.

Possibly, glove box operated under negative pressure. Although, one can argue there's always negative pressure and that sort of thing, were there holes in the glove.

But, you know, we need to be

diligent about looking at these things, and I think it is possible to conclude in some cases that exposure potential was nil.

This is not exactly in light of what I'm talking about, but the scaling factors based on other monitored exposures can be used.

So, it's not unmonitored -- it's unmonitored in the sense that you don't have a direct monitoring of the radionuclide of concern. But, for example, as we'll talk about at the Mound site, if the facility had a bioassay program in place that monitored gross alpha contamination in urine and there were six other classes of alpha emitters, one could come to some reasonable conclusions about the exposure of the workforce based on those gross alpha measurements for those secondary-type sources.

I meant to point out at the beginning of the presentation, I forgot, but what we're really talking about here are

secondary-type sources.

Sometimes we refer to them as exotic radionuclides, but all we're really saying is it's beyond the bread and butter radionuclides that exist at the facility.

Many facilities would handle -- for instance Los Alamos -- plutonium and americium to a certain degree in fairly significant quantities. There were robust monitoring programs for them, but there would be other sources of exposure that weren't monitored as frequently and need to be characterized. So, that's what we're talking about here.

Okay. And I'd just like to finish up with a few examples. I think Joe has some similar examples. And I'm not saying that this is going to end any debate on these SEC issues, but I would fully admit that these are somewhat simplistic examples. But I'd just like to throw them out there as food for thought and maybe the basis for some

discussion.

So, here, I'll take Pantex as the first example where these pits were handled at Pantex. These plutonium pits were clad in a non-nuclear metallic material, pretty well encapsulated.

So, if we can identify, for example, here in 1967, a program audit that indicated that all nuclear components were surveyed for loose contamination upon arrival, rechecked as they were assembled, during assembly operations contamination checks were made, and then routine surveys were also made in locations where radioactive material was handled or stored, that kind of gives you a feeling that they were really watching out for contamination in the program.

And as importantly, if contamination was there, was found, was there any follow-up action to document or demonstrate what those exposures were?

In this particular case at Pantex,

the bioassay samples were what we would call event-driven. There was no routine program. They would take a bioassay sample in response to identification of contamination based on these, what appear to be at least on paper, some pretty rigorous survey requirements.

I think, though, it is incumbent upon NIOSH, I would agree, to demonstrate that these contamination surveys were performed and we have some demonstration that follow-up actions were taken.

I think where we probably are going to have some degree of room for discussion is to what extent those follow-ups need to represent or what's a good representative follow-up to give folks a comfort level that the program is as we believe it to be or as it seems to have been portrayed in writing. And I think that's what I just talked about.

Okay. Mound is my second example and I'll talk about this gross alpha

monitoring program.

There were -- almost all exposures at Mound were to 27 categories -- 27 categories of radionuclides were exposed to different types of alpha emitters.

Mound had a lot of polonium work and other plutonium work, but they also engaged in a lot of alpha emitters, I think, looking for high specific alpha activity sources. So, for a long period of time, they relied on gross alpha measurements to capture exposures to these alpha emitters.

If we know what a worker was exposed to and you have a gross alpha measurement, it's not a big stretch to interpret that and figure out what his potential exposure was based on the frequency of that monitoring.

I think the real trick here, and Mark Griffon alluded to it this morning, is to identify which types of workers -- which workers were the ones that were exposed to

these sort of minor sources of exposures.

And I'll go to the second bullet and talk about that a little bit. For example, there's a, you know, Mound has a very good compendium of historical program reports that we can review that document in fair detail what type of activities occurred at the site over time. And we feel that these historical program reports can be used to establish the level of activity associated with various sources that were in position at the site. And I throw out this example of a protactinium-231 extraction using a small ion exchange column in a ventilated hood.

I think I've heard that maybe three people were involved in this operation. So, yes, protactinium, as alpha emitters go, has a pretty short half-life. So, it's a high specific activity, it's an alpha emitter, a lot of potential for some high dose, particularly to the lung.

But if we can document that this

was all done in a hood, we knew the people and they were on an alpha bioassay program, I think we can go a long way towards establishing the dose associated with exposure to that type of operation with the proviso that we need to address the fact that there could have been other workers like custodial and maintenance staff involved in that operation, and to demonstrate that they did not have inadvertent exposures as well.

This next bullet is kind of simplistic, but a review of work activities that indicate no exposure potential for some sources.

I think there is one example at Mound where there was an onsite storage of drum material. There was a fair amount of material that was there. It was never opened or used. So, we would submit that that's a case where we probably wouldn't need to have much extra work involved in documenting the low levels of potential for exposure.

And my last example at Mound is these contamination surveys that can be used to bound exposures. Tritide exposures at Mound has been a subject of a lot of debate. But at one point, the tritide exposures, the sources that were used were actually no longer used and they were put in storage.

And there were very -- I hate to use the word robust again, but some pretty significant contamination surveys done to document what the levels were in the areas where the workers, you know, used the source.

And we feel that these contamination surveys, even though these service workers might not have had bioassay or infrequent -- we could use those to bound the level of exposure to them based on the level of surface contamination existing in the workplace. In fact, I think that's something that Brant Ulsh is working on right now.

And my final example, yes, is from Los Alamos where there is an SEC currently

being evaluated for obviously -- there is an SEC already in place for 1943 and `75, which was based on an inability to reconstruct internal exposures to mixed fission activation products, as well as some of the certain, quote-unquote, exotic radionuclides.

But after `75, we believe that there was an in vivo monitoring program that was -- that helped to establish the potential for exposure to certain workers in certain buildings coupled with the availability of health physics records that allow for the bounding exposure's internal estimates.

We have some fairly well documented health physics procedures that were there coupled with contamination surveys that we have agreed to go back.

I think this is where we fell short in our Evaluation Report at Los Alamos. We did not follow up and demonstrate that, even though there was this pretty well described radiation protection program, you

need to follow up and demonstrate that, yes, the surveys were taken and the contamination levels were, if they were, demonstrated to be low, or if not, what the potential would have been based on the levels found.

And finally, there was the existence of these worker monitoring checklists where workers, as they were assigned to different facilities, had a checklist completed that put them on various bioassay programs based on some type of an informed process.

The health physicist would look at it and make a determination whether or not there was a potential for exposure. We're going back and looking at those.

So, these are just some rough examples. There's a lot more to this, but I just want to throw a few on the table as maybe a basis for some discussion.

So, in summary, there's a variety of information out there that's codified in

our regulation that can be used to reconstruct doses when you don't have workplace monitoring or bioassay data. But I think the degree to which any of these can be used, needs to be evaluated on a case-by-case basis. There are so many permutations out there that I feel, at least in my mind, it's difficult to come up with sort of a cookbook formula that says, you know, here's what you look at for sources.

I do believe, though, it is incumbent upon NIOSH to quantitatively evaluate the exposures associated with these source terms. I mean, it says so in the regulation. One of the first slides I showed you said NIOSH needs to quantitatively evaluate.

But I do think the degree to which that quantitative evaluation considers available data certainly could be the subject of discussion among reasonable folks. For example, what constitutes a representative sampling of available contamination surveys,

nasal smears, radiation work permits, that sort of thing.

So, with that, I've concluded my introductory remarks.

CHAIRMAN MELIUS: I'm going to suggest that we let Joe present because I think he has some other examples, and then we'll ask questions of you both. We'll try that.

MR. FITZGERALD: Good afternoon. Thank you, and I appreciate Jim taking the time to walk through this with me and with the Board.

We've sat through a number of Work Groups together and I think he described it yesterday pretty adeptly, which is sometimes it's like Whac-A-Mole when you get into the exotics and the secondaries just because you have so many of them, on one hand. And when you have to actually disposition each of them in terms of exposure as well as dose reconstructability, it's a big job.

And some of the sites, I guess, you know, one question may be why is this issue -- is this on? I might need some -- oh, there it is.

Certainly one question is, why now. And pretty much I think it's because we're in the midst of a lot of national labs, a lot of multipurpose national labs. We're focusing on Los Alamos, we're focusing on Mounds, we're just getting into Brookhaven, Sandia is on the way, and we're talking about laboratories like Los Alamos that have handled just about everything on the periodic table.

And certainly with the, for example, the first SEC at Los Alamos dealing with some of these exotics and the secondaries, it's a very pertinent issue and how we disposition this is pretty important.

I think it's not only a question of basis, which I think Jim was getting into, but it's an efficiency issue, too.

I think one thing that we have

discovered as we waded into this, at least at Mound, but some of the other facilities as well, that you can quickly get lost in it in terms of resources and time.

If there's not a good idea of how you're going to perhaps -- it's not a formula, but how you're going to logically walk through this and know pretty much along the way what the basis for decision is going to be, I think we could spend a lot of time debating issues which may not need to be debated, but just need to be addressed as a quantitative issue much in the way Jim has discussed it.

So, some of this is just due process, I think, in terms of looking at the efficiencies.

And certainly in terms of resources, we certainly don't want to spend any more time on issues that can be dispatched more quickly. So, that certainly is another issue.

And certainly another thing, too,

is the question of coherency in the sense that we're trying to look across the different SEC sites not so much to make them uniform, each one is unique anyway, but the question is as far as the basis for walking through consideration for secondaries and exotics, I think we're looking for some kind of uniform logic process.

And in some cases -- and I'll walk through that a little bit more on some of the sites. It's not so much they're radically different. It's just that I think they have a different spin or different approach on it.

Anyway, in terms of general issues, I think Jim has covered pretty much the basis and certain exposure potential as cited in the regulations.

But what I think is concern for us is that in practice -- and this is a bottoms-up perspective. Jim is the top-down. I'm trying to give you the bottoms-up perspective from the Work Group experience.

In practice, we're having difficulties with exposure potential. Certainly it has surfaced in a big way at Mound, but it's coming up in Los Alamos and Pantex as well.

And the issue is, when you get down to the point, and this is common for, I think, exotics and secondaries, where you're dealing with small amounts maybe only used in campaigns, you're not going to have much data. In a lot of cases, you have no bioassay and workplace monitoring data.

And then the threshold question is not so much the completeness and availability of data. It's whether you actually have an exposure potential in the first place, you know.

Is it a trace quantity? Is it sealed, you know? Does it have characteristics where maybe you don't have any data because there's really no need to have bioassayed it in the first place.

And so we've been sort of getting into the issue of, is there a presumption of a rad control program that would not have generated bioassay data for some of these exotics because of the nature of their form or the quantity or whatever. But because that's a presumption, you start getting into exposure potential questions.

So, really, I think what we're saying is that exposure potential has become a threshold question in a number of the SECs and something that we hadn't foreseen. But as we got into the issue, it's not really laid out.

I threw this in, and in fact I inserted this Friday just to give some sense about, you know, when we talk about secondary sources or exotics -- I just wanted to give a thumbnail sketch.

And this is not a complete listing, but, you know, for the different sites when we talk about secondaries and exotics, this is kind of the menu of what

we're referring to.

And some of these are, you know, admittedly probably pretty much trace quantities. Others are probably more substantial, may represent some significant campaigns at some of the labs.

But in every case, I think we've established there's a source term. Meaning that there's a source term actual exposure source that needs to be dispositioned and addressed and is not simply a question that it hasn't been identified as a potential pathway. So, certainly that's the case.

Now, I put the but on the end here because in Pantex, I wouldn't say, except for some trace quantity, there's any real secondaries. But the going-in composition, some of which Jim has addressed, is looking at what would be described as an environment where you would not have any potential for uptake except for maybe incidental uptakes which would be event bioassayed.

And in this case, certainly the issue will become how do you actually demonstrate this lack of exposure potential. So, the dynamic is the same even though I think for Pantex we wouldn't say there's any significant secondaries involved there.

This was a very imperfect graphical illustration of something that I kind of struggled with. Because, you know, when we're talking about availability and completeness of data, the right-hand side of this graph is pretty much where we've been on for quite a length of time: four or five years.

We've focused on, is it complete. Is it adequate? And what we're finding with the exotics and secondaries is that almost by definition, the data is lacking. You don't really have, in most cases, bioassay information. You often don't have workplace information. And I would go so far as to say in some cases, there's very little source term

information.

I mean, you know it was there -- it may have been listed -- but there's very little other than, you know, you might know the half-life, you might know it was used a certain time period. But the terms of the chemical form, what the process might have been in some detail; that's often lacking.

And I think what happens is when you get down to the lower right-hand side of this completeness and availability bar, this question of exposure potential becomes more and more important.

And so what we're finding is that when you don't have any data, the next question is, well, is it because you essentially did not have any exposure, and how do you know you didn't have any exposure. How do you prove that?

So, we quickly go into this question of how do you actually disposition a situation where you don't have any

quantitative data or have little quantitative data, and how do you judge what the exposure potential is.

And having lived through the tritide debates, it's a tough question. And I think both NIOSH and SC&A and the Board and some of the work groups have struggled with that question.

How do you prove or how do you validate an exposure pathway when you really don't have very much data to go by?

You might have radiological control program information, you know. Maybe they had a program description.

You might even have some contamination survey information, but you're really operating at the very fringe, you know.

Think about the program. You're operating at the very fringe of what can be quantified, and you're almost in the realm of what I would call professional judgment or, you know, an estimation of what might be the

case.

And I think that's one reason we wanted to put it before the Board because I think there's some real question about how you make decisions in that kind of environment and where do you cross the line and maybe go too far in terms of what the data would provide for you.

I'm not going to lay on this very much, because Jim just covered this in pretty much detail. But I would say on source term evaluation, and we're certainly in the middle of a lot of source term evaluation, it's almost where you end up if there's no bioassay and no air monitoring information, it's a menu of things which, you know, you choose what you think provides some parameters and you combine it with perhaps process descriptions, perhaps some sense of how rigorous the program was, how contamination control was handled.

And somehow with that combination -- call it weight of evidence, call it

professional judgment -- you come up with some sense of whether or not there might have been an exposure and to what extent the exposure is a problem.

And I think the difficulty here is not so much that you do that. It's just how is that weighed and how is that made transparent to a body like the Board, because it is sort of a conglomeration.

Each situation is unique. And I think as Jim has pointed out, you're going to need a lot of flexibility and judgment to decide how you're going to make that judgment.

Now, these examples are just examples. I certainly don't want to redo the debates in the work group that are ongoing.

But I think just to illustrate that, you know, this sort of glass half full/glass half empty situation we're in, I think you saw Jim's description of where NIOSH is, and this is sort of maybe the SC&A view of the world and, you know, using the same

information -- and for Mound, you know, what we looked at is that, yes, like the other laboratories, they had a long history of handling exotics, lot of research applications, certainly some documentation which actually, unlike some sites, actually pegged what nuclides were present in the workplace. It didn't get into any details about how much or how it was used, but just the fact that it was in the workplace.

And the difficulty that we had, I think, with Mound, is the question of exposure potential being a threshold and how we actually address that as a basis for knowing if an exotic or secondary is going to be considered or not.

And how we actually deal with situations where you're going to give credit to the RadCon program, the operational program, contamination survey program, but in a lot of cases all you have is the documentation. It was done comprehensively.

But, you know, I think as Jim also pointed out, how you deal with the validation of that program description.

I've sort of sat in these meetings where, you know, the particular nuclide or source term is not an issue because the description of the program, you have a good contamination control program, you have a good event bioassay program -- event-based bioassay program, and you've got the world's best internal dosimetrist running the program. So, what's the issue?

And I think that's where, when we get down to the point where we're trying to combine programmatic considerations to source term considerations, you know, how we do that is going to really determine whether or not you have an SEC potential issue or not. Which, you know, makes me a little nervous because sometimes we get to a situation where we're really dealing with a lot of these things subjectively at this point.

Just a little bit more on the Mound SEC. Not dwelling on it too much, but where we came out after about a year and a half of debate, were some criteria that were sort of positive in a response a few months ago and that's kind of where we left it.

Because at that point, I think we had some concerns that we didn't quite know where we were as far as what the basis for determining exposure might be and how that would be actually implemented. And so we kind of left it at that.

I know it's being worked on, but, you know, some of the questions that we had is, you know, this is in fact the criteria that we're going to have to address. The criteria themselves have terms that are pretty vague and not defined yet.

It's kind of difficult to know how you would satisfy those terms and how is the judgment going to be used in terms of weight of evidence. We've heard that term, too.

And how are we going to bring this to the Board in terms of showing the basis for either recommending or denying some of these particular nuclides or source terms if it's difficult to even lay that out? So, I think these are some of the considerations we certainly came out with Mound.

Los Alamos we talked about, I think, earlier. But again, I think the biggest issue with Los Alamos, and this gets into the same question with exposure potential, is trying to rationalize the basis for dose reconstructability before the SEC period and after the SEC period, and deciding how does one establish the quantitative basis for, you know, the latter period at Los Alamos, using the same kind of thinking that went into establishing why one could not dose-reconstruct against the mixed activation and these fission products.

I think that gets into the same question of how do you actually validate the

same considerations that we have been talking about relative to the other exotics, and it's not too clear to me right now.

I think, you know, some of the things that we've been batting around in the latest work group meetings are helpful, but we're not, you know, to me, we're just not quite there yet as far as knowing how to rationalize that.

And this question of how historic operational and design controls should be given credit in an analysis for an SEC is, to me, very troublesome.

Maybe it's because of my own history with doing audits at DOE, is that, you know, certainly what's written down in terms of operational descriptions and health physics, program procedures and whatnot, limits, I guess, in my experience, has never been so much the problem that the policies or the procedures were wanting; it's typically the execution and the implementation of those

procedures were either incomplete or not adequate.

So, when we start leaning on the program descriptions and procedures and begin to cite those as a basis for, you know, resolving either exposure potential or even advancing an SEC, I think I have a healthy skepticism and would want to be very, I guess, sure about, you know, what we were relying on, the document, the audit, whatever it is. Because I think again from experience, that's a tough one.

I think I'd be -- I think the program should be pretty skeptical about leaning on historic site documentation, unless we're pretty sure that it's rigorous and it's valid.

And I guess I would argue that that might be more true in the later era than the earlier era. And I guess that would mean later era being post-Tiger Teams, post-RadCon Manual, post-Price-Anderson Act regulations.

Before that, I think you really do have some questions on implementation.

Like I said earlier, Pantex is a slightly different issue. But, again, I think this issue of when you bank on site program descriptions and the rigor of the rad control program, I think it's very pertinent to Pantex.

And this again gets into the issue of the exposure potential and can you rely on descriptions like that and what do you need to validate -- how you need to validate those descriptions.

This is sort of in closing for the examples. I wanted to sort of flip it a little bit and say, you know, we had a sort of positive experience with Y-12.

This goes back probably for a lot of folks around the table. But, you know, one of the earlier SECs was Y-12. And, you know, we had a similar debate on some of the secondaries that existed at the Y-12 associate

-- I think it was the Calutron. I think it was Calutron.

And -- was it cyclotron? Okay. Calutron was somewhere else; wasn't it?

And there was some question about, you know, whether or not there was an exposure potential. There was some thinking that it was probably sealed sources. But in any case, we had incident files that could shed light on what the exposures might have been.

And this got kicked around back and forth. But in the end, I think to give Jim credit, I think he went back and actually validated whether or not, in fact, the incident file was available, whether the data was actually there and whether or not one could pin down this question of whether the secondaries were a potential exposure source.

And in the end, it was, you know, there wasn't -- the data wasn't in fact there and ended up being, I think, an added Class on the SEC.

And this sort of gets to the original question. And I know the title of this thing is something like, you know, how do you disposition nuclides that are small quantities or small usage or something like that. And it sort of gives you the sense these are rather diminishingly small and insignificant source terms.

But I would, I guess, remind the group that we actually have worked on this thing and the Board has addressed SECs for a number of these, a number of sites. So, actually they do play a significant role.

Now, we think exposure potential is the critical threshold question. And I think it's one that is generic, but I think we're seeing it in secondaries and exotics.

We don't think it's defined as well as it could be in terms of overall program implementation and basis to determination.

We're picking out inconsistencies.

I don't think it's on a different page. But depending on the SEC site, you know, taking into consideration the uniqueness of the site, we're still seeing a bit of a disparity depending on the SEC and the individual that's across the table in terms of the discussion, which gives us some pause.

And this question of transparency is not a minor one. I think we have to disposition these issues so that they are transparent to the Board and transparent to the public as far as what the basis of the decision is, and not just a prejudgment that, you know, they were trace quantities or insignificant to begin with.

And in the absence of this kind of data, how do you actually weigh the credibility and reliability of information?

One concern I would have is that, as I said earlier, when you get into situations where you lack quantitative data, there's a tendency -- and I think this is

natural. We do the same thing. You start relying on worker interviews, site expert interviews. You start relying on documentation, different pieces of paper. You don't have the quantitative data. You start relying on more qualitative sources of information.

And I think incumbent upon that, you have to consider very closely what the credibility and reliability of that source is.

There's been several instances where, you know, what was put on the table were interviews with the program manager of the very operation that was handling these nuclides, and I guess the thought that was going through my head was, you know, certainly this person knew this operation, but he was also responsible for that operation.

So, you know, whatever he said, I always took, you know, with a grain of salt, you know. Is he truly independent from the standpoint of how that operation and how the

exposure was portrayed or not?

And I think that's something that one has to consider along with, you know, DOE documents and all the rest of it. And I think that's another issue to get into when you don't have as much quantitative data as you'd like to have.

And I think you've seen this already. So, I won't spend a lot of time, but I think Jim said it in his last slide, as well. In several instances, we were sort of challenged to prove the negative in a sense, meaning that if we felt there was an exposure potential, show us the data or show us why.

And I think really the issue is, I think, for these nuclides for which an exposure -- or I'm sorry -- for which the presence of that source term exists in the workplace, it's incumbent upon NIOSH to demonstrate in some fashion, quantitative or otherwise, whether an exposure potential exists.

And that should be defined in practical terms and normalized against some determinations that exist at other sites. There is some kind of coherency.

And as I said earlier, the credibility and reliability of the sources should be as much a part of the consideration as anything else.

This is kind of playing around. Because in practice, I was trying to think of how we actually, in some of the work group deliberations, how we sort of go through some of this, and this is not actually too inconsistent with what Jim put up.

We go through, you know, bioassay data, workplace monitoring data. In a lot of cases for the exotics and the secondaries, there isn't any.

So, the next question tends to be, okay, for these exotics or secondaries, is there any exposure potential. And this is where I think there's a breakdown of sorts.

Certainly a source term evaluation along the lines that Jim suggests is probably where we need to be, but I don't think that's where we are right now.

We tend to roam around with pulling in different pieces of information to justify a position, and I think the Work Group has struggled in several different venues on how one does that.

I think if there's sufficient quantitative information to put together a sound source term evaluation, then you're going to know, you know, is there enough there to justify Joe's dose reconstruction or not?

And if it turns out that's a sealed source, there's no dose reconstruction necessary. It's a sealed source.

If there's information, sufficient information as we've discussed earlier today on radon, then of course you would go ahead and look for a method that could be used to dose-reconstruct.

Where I get nervous is, okay, there's not enough quantitative information to really support a good source-term evaluation. Then I think you really do get into a melding of both the subjective and quantitative information. And how you do that and what weight you give, you know, some of the more subjective information whether it's rad controls or process information, I think is going to be pretty darn important.

And that's pretty much, I think, what I wanted to close with.

Any questions for either one of us?

CHAIRMAN MELIUS: Jim, if you want to step up also to the -- so we can ask you both whatever.

I'll just start off with one comment, and it's back to one of Jim's initial comments that we don't need a -- I forget exactly what you said, but, you know, a strict cookbook sort of approach to this is not

possible because each site is different.

And I think I probably agree with that, but I think we need to have some understanding among the Board and NIOSH about how we're going to approach these.

I think Joe mentioned one, sort of, transparency. Both of you mentioned, I think, the consistency in how we're doing it. And then, third, I'll just say sort of operationally, I mean, to judge that control program, there's just a lot of detailed review.

It's going to be very hard for -- I mean, it's hard enough for the Work Group to do it. But then to bring it to the Board and expect the Board to be able to then repeat that process or whatever, I think is going to be difficult.

But if we have a set of sort of guidelines or a process that we all understand, then at least I think we can know what the Work Group and SC&A and NIOSH went

through in looking at this issue and, you know, we can rely on that.

I mean, I think that's worked out on the SEC evaluations. I think it's working out on, I think, on surrogate data. We'll see. It's early.

But, I mean, at least to know what's being considered and that it's consistent from site to site and that we know that the Work Group and SC&A and NIOSH went into greater detail than we'll ever be able to do in a Board meeting. It's just not going to be practical, I think, at each site. So, coming to some understanding.

How to do that, I'm not sure. I agree. I don't think setting up a work group to develop guidelines is, at this point, is going to be useful. There may be some other ways, but let's get some other input.

So, Brad, I see you had --

MEMBER CLAWSON: Jim, I was looking at your presentation here. In the very first

bullet you put there that the pits were all clad. In the early years, they were not.

DR. NETON: Right. And I think I indicated that this was after this 1967 survey. So, I was trying to indicate that, you know, at some point in time, and maybe `67 is not the right date, but, you know, whenever they were clad, then I think that there would be some reasonable -- that it would be a reasonable approach to what I have outlined there.

MEMBER CLAWSON: Well, one of the things that bothers me is that we're using the 1963 self-audit report to justify what they're actually doing, where actually you could go to the 1990 Tiger Team report that brings into question every bit of their RadCon program. Anywhere -- I believe it was over 450 pages of different findings.

One of my things is, is that we're using a self-audit of yourself. You're performing your own self-audit. This program

right here is proof that a lot of this can't work, and I don't understand how we can use something like this to -- and especially with Pantex because you -- you've shied away from the word exotics, but there were numerous exotics with them.

Now, they were sealed and so forth like this. But even with the bioassay event-driven response, the interviews that we had, the question that I asked numerous ones, what is event-driven.

Well, before -- and it's like all of our sites -- 1985 to 1990 when the DOE orders started coming out, they interpreted what they wanted.

One of the things was -- my question to them was, what's event-driven. Well, if we can't clean it up before we go home.

Until Cell One, there was no cleaning it up. And when we asked even the Health Physics Department, the Cell One

instance, they admitted we did not know what we were dealing with, period.

To this day, they still -- a lot of their people do their own survey as we did in our tour and so forth like that. They checked each one of the pits, a vacuum test, a very specialized vacuum test to be able to check these things.

The loose contamination; there's no data for that. We had guards that used to do this. Until 1989 at Pantex, there were three RadCon. And for several years, there were only two, until 1989 when they shut the entire plant down because they could not implement the DOE orders that were coming out to them. They knew that they were responsible for this.

We see this at numerous sites that earlier years, the information is very sketchy, the quantities, and it's very hard for us to be able to rely on this especially when we're relying on a self-audit.

This is why the Tiger Teams were built is because they found the flaws. And I look at this and this is part of our frustration as a Board Member and also a Work Group chair to see this, and then to be able to see other reports that totally contradict them that they're not taking into consideration. Especially when these -- when these contradict what the actual workers -- and I'm not just saying -- I'm meaning all the workers from security to whatever. They question this.

Then we get into LANL, and one of the things that bothered me was after 1975, in vivo counting -- well, we heard yesterday that a lot of them if you didn't make it into the -- it wasn't a real problem, but well-documented health physics procedures. That brings into the question as we've seen at, I'd say, all of these sites, the procedures and how they're interpreted.

The contamination surveys, the

worker monitor checklists, all these things were fine and dandy until the pressure of production run over them.

DR. NETON: Can I just stop you right there?

MEMBER CLAWSON: Sure.

DR. NETON: I mean, I just want to point out that I think you've missed the point that I've made is that that's a starting point, but it's incumbent upon us to demonstrate that those programs actually did what they said they did.

So, when I talked about the Pantex, I was very clear to say evaluation of loose contamination monitoring data is critical. And if we can't establish that they did what that audit said, then I totally agree with you, Brad.

And I don't want to get into the details of answering all these SEC-specific issues. But I think you would agree that if we could go out and demonstrate at a site,

forget Pantex for now, but if you had a survey program, they surveyed it before, during and after and you've got a well documented paper trail and there was no contamination, wouldn't you at least admit that you could get some feel that the potential for exposure was very low?

I mean, are you willing to accept that?

MEMBER CLAWSON: And I understand what you're saying.

DR. NETON: Okay.

MEMBER CLAWSON: Let's talk about the black diamond because NIOSH has used that as if the components and everything were clean.

We don't have documentation of it. All we have is a procedure that it was supposed to be this, but we also have the interviews and the operational -- that they were not.

And I apologize because Pantex is

mine and so, it's very dear and near to me. But the thing is, is that the lack of data -- but we can take certain pieces and parts of it. That's what gets to me.

And it seems like so many times -- and you've said it to me many times, you know. You want us to prove a negative or whatever. Well, the same is with us.

We've got people's documentation telling us and, you know, we can revert back to a self-audit here that I don't really put too much trust in and we don't even look at the Tiger Team report and that's where we get into -- and, you know, and this is something that Joe really touched on was, we're starting to get to the sites, the major sites that dealt with all sorts of things, you know.

And when we talk exotics, many of them we can't even mention. And that's why it's real hard for us to be able to say that it wasn't there or it was there, you know, and in what quantities, because a lot of that

information is not there.

DR. NETON: I appreciate your input. I know you've worked long and hard on this Pantex issue and I'm not trying to belittle what you guys have done.

MEMBER CLAWSON: I realize --

DR. NETON: But I do think that I'm saying something that's slightly different here than we've been saying in the past. And that is it's incumbent upon us to demonstrate that the rad protection programs did what they said they were doing.

It's not, I don't believe, sufficient to point out a paper trail, robust program and say, okay, it's good to go. I totally don't think that's appropriate.

And so we need to demonstrate that they did what they said and follow-up. And I agree the DOE, you know, Tiger Team audits and stuff need to be considered.

CHAIRMAN MELIUS: Brad, we need to move on a little bit.

MEMBER CLAWSON: Okay.

CHAIRMAN MELIUS: Josie is waiting.

MEMBER BEACH: I actually have four questions, but I'm just going to give you one at a time.

DR. NETON: Okay.

MEMBER BEACH: Jim, your last slide indicates that NIOSH will use quantitatively -- they'll quantitatively evaluate exposures. But at Mound during our Work Group meetings, NIOSH has taken the position that if routine bioassay data or requests can't be found, it's not likely an exposure issue.

That's what we've experienced and that doesn't really jibe with your --

DR. NETON: Yes.

MEMBER BEACH: -- position.

DR. NETON: I think there's a little bit of a disconnect there and I may need to get involved a little more closely with the Mound situation.

But as I pointed out in the slide

here that comes from the regulation, it certainly says that we need to do a quantitative characterization of the radiation environment. It doesn't say qualitative. It says quantitative.

So, I think where it's been at Mound is there's been sort of this approach that says, you know, there's all these sources out there. And I think we've been saying, go ahead and prove to us that something happened. And I think that we need to do a little more than that.

I mean, I'm probably shifting gears here a little more than what you've been used to hearing, but we need to at least prove that the sources did not have a significant potential for exposure or no potential for exposure based on some quantitative information.

Now, that could be, and at Mound, many of these go away, in my opinion, because of the gross alpha monitoring program which

has been a point of contention for some time now.

How far does the gross alpha monitoring program go to dispense with a laundry list of these exotics?

I mean, many of the exotics at Mound were alpha emitters because, frankly, that's what their main interest was in developing high specific activity alpha sources for neutron generation, at least in my opinion.

And so a lot of those go away, and then you're left with these other, you know, fission product-type, you know, cesium-type sources that we can deal with and I think we can dispense with on an individual basis.

MEMBER BEACH: But they need to be step-by-step, walked through how they're going to be --

DR. NETON: Right.

MEMBER BEACH: - dispensed with or evaluated.

DR. NETON: And I can guarantee you that we're not going to have bioassay data for most of those sources, but I would really hope that we'd be able to demonstrate some type of contamination control measures, surveys, smears, you know, those type of quantitative pieces of information that can be used to at least put some type of a ceiling on the potential for exposure.

MEMBER BEACH: So, we should see something with the next Work Group meeting or --

DR. NETON: Yes, yes.

MEMBER BEACH: That's why I said yesterday we may push it out to February.

DR. NETON: Well, I need to talk to Brant. He and I have chatted a little bit about this, but hopefully we'll have something by the next Work Group meeting.

MEMBER BEACH: Okay. I got a couple more that are for Mound too.

It seems more ad hoc right now,

more dependant upon the individual health physics involvement and their professional judgment.

I know we've heard that at the Worker Outreach meetings, we've heard that at Mound meetings.

It's not institutional or based on the hierarchy of data approach that you've outlined in your fist slide, so how is NIOSH going to implement this in practice?

DR. NETON: What, this hierarchal approach? Is that what you're talking about?

MEMBER BEACH: Well, right now you use a lot of professional judgment. So -- but the hierarchy outlines how it's going to be spelled out.

So, I guess that, again, doesn't jibe for me.

DR. NETON: Well, the hierarchy, we're already down to source term, I think, is where we're at.

There's not a lot of professional

judgment involved when using bioassay data or coworker. There is some, but not to the extent when you get down to the source term.

I think we've been getting there at Mound and that's what's taking some time is demonstrating to the Working Group's satisfaction that we really can quantitatively evaluate those sources.

The tritide exposures is a good example where we said, okay, the source term has been put away. There's nothing there. How do you know that the maintenance workers that went in there and cleaned up weren't exposed?

And we said, well, we have a lot of contamination surveys. Let's go evaluate those contamination surveys and at least we can put an upper bound on potential exposure to a worker based on the levels that were existing in the areas they were working in.

So, we're doing that in that situation. I mean, again, it's kind of a

case-by-case basis. There really isn't, I don't think, a cookbook to this situation.

I think this King document is a little bit of an issue. I need to take a closer look at that. It's probably not a good answer to your question, but I don't think it's as professional judgment driven as it appears. That's the best I can say.

MEMBER BEACH: It's not transparent, I guess, is the problem.

DR. NETON: Yes, that's a problem.

CHAIRMAN MELIUS: Can I just interrupt a second?

MEMBER BEACH: Yes.

CHAIRMAN MELIUS: I think we should -- I'd like to avoid like very detailed questions about a specific site.

We have some conflict of interest issues here and I think we need to be -- let's talk about the general issues if we can.

MEMBER BEACH: Okay.

CHAIRMAN MELIUS: And I think

that's all we should expect for answers and not, you know, which document and things like that.

MEMBER BEACH: Okay. Well, my next one is Mound too. So, I'll skip that and maybe I'll bring it up in --

CHAIRMAN MELIUS: No, you can ask the generics at the site, but I think that we don't want to say what are you going to do at Mound or what are you doing at this or what are you doing at that?

I think we've heard in general what --

MEMBER BEACH: Right. Well, I guess this one's general.

As NIOSH moves further and further away from actual bioassay data and air sampling data, how is the reliability of that information going to be done?

And I was putting that right back towards the situation at Mound, but it's a general question for --

DR. NETON: Yes. And, again, I hate to be a broken record. It sort of depends. I mean, as you get closer and closer into contemporary time frames, the health physics programs grew stronger and stronger or more robust because of the regulations that were impinging upon them.

So, as Joe indicted after 10 CFR 835 came out, you had bioassay programs that had to be, at least on paper, well documented as to why people were or were not on bioassay monitoring programs, and those who had a potential to receive a hundred millirem were on a program. So, you'd have some very strong documentation.

As you go back in time, it becomes a little less certain, but we're still going to rely on an evaluation of the health physics programs that were in place and the follow-ups that were taken to demonstrate the contamination levels in the facilities, those type of things, air samples that were taken.

I mean, it really -- I don't think it's sufficient just to say that there was a good health physics program. I think I've said that a number of times already.

And, you know, it's incumbent upon us to demonstrate that the program did what it said it did and you should expect to see that from us.

And if we can't do that, then I would agree that there's issues.

MEMBER BEACH: Okay. My other one was a LANL question. So, I'll hold it.

CHAIRMAN MELIUS: Okay. Phil. Phil and then Paul.

MEMBER SCHOFIELD: Well, first thing, I got to make comment on the Pantex slide that says zero potential.

You get nuclear materials. There is no such thing as zero potential. Any time you're handling nuclear materials, there is potential for somebody to get contaminated externally or internally.

The other thing is bioassay. If there is no bioassay, some of these more exotics or even in cases where someone goes into a facility that has had an excursion of some kind, yes, people have been in there and cleaning. But a lot of times as we all know, there's loose contamination still resides within that facility.

Someone gets up on a ladder. Maybe just change a light bulb. Maybe you got an electrician there changing lights. He knocks that loose contamination loose. Now, it's in him.

He's not on a bioassay, because he's not expected to get anything. So, you've got that problem.

And then you listed things like sealed sources and glove boxes. We have problems with window leaks, gloves, valves, canisters leaking.

Here, again, you have all these different sources/potentials to people to be

contaminated, to get internal contamination.

And then you take a facility like INL. You've got 50-plus reactors. Now, you've got all kinds of exotics everywhere. A lot of these people aren't going to be monitored, quote, for the exotics necessarily, but they may be getting exposed to what's being discharged out that stack or what's even come loose into the room because they're in there doing a job that they aren't normally in that area. So, they're not on a program for that particular area.

And as we have heard from many, many sites, there is -- wasn't really a health physics checklist for many of the jobs or many of the things that were done.

And even to this day at a lot of the facilities, there are a lot of people protecting things like fire department, guards, crafts who worked nights, weekends. They're self-monitoring.

If they're doing a good job,

they're likely to catch it. If they're not, then the risk goes up.

So, I just have a real problem with that no potential.

CHAIRMAN MELIUS: Paul, then Wanda.

MEMBER ZIEMER: My comments, I think, are generic and perhaps will amplify on the point that Brad made. And he certainly put his finger on one of the issues in our sites particularly in the early days, and it is the issue of sort of self-auditing.

And since I was heavily involved with the Tiger Teams, as was Joe Fitzgerald -- and, Joe, if I say something wrong, you can steer me in the right direction, because Joe had more experience on deck with some of those.

But on the Tiger Teams, one of the big issues that we found at all of the sites, virtually, was not necessarily that their health physics programs were inadequate, but that the implementation of how that

information was utilized -- and the driving force of production and the possibility of health physics not being independent or having the clout to actually do what they needed to do with the information that was found, was frequently a problem.

So, often what you have in these sites, you may have very good data. You have survey data and bioassay data and personnel monitoring data, it may, in many cases, not have been acted on properly because of the dynamics that you have talked about, Brad, but the Tiger Teams always wanted the local facility to have a good internal monitoring program -- I mean, an internal audit program. They needed to be auditing themselves.

But you can only do that well if the group's that auditing that is independent enough for management to be able for that to occur. And that was typically the kind of problem you had.

So, in many of these cases, and,

Joe, you can correct me, but I don't remember any of the health physics programs ever getting a grade -- we actually graded them.

I don't remember any of them getting a grade above C. There may have been one or two, but most of them graded down. And typically it had to do with how things were implemented in terms of the interaction with management.

So, as I think about that, I think much of the data that you would find at these sites that we utilize, the data itself may be very useful, but we find that the sites didn't implement it in a way that helped protect those workers in the way that they should have been.

And this led eventually to the RadCon Manual and to Part 835 which we were heavily involved in developing. So, we had some consistency over the complex as to how you did this in a way that gave enough clout to the health and safety side to stand up

against pressures from production.

MR. FITZGERALD: Paul, I think that was well said.

The issue I have is more moving from a quantitative, you know. And I actually appreciate that may be necessary when you get to a point, as I pointed out earlier where, you know, you just don't have much in the way of quantitative information and you have to start looking at the program.

But for those very reasons, I have, you know, and I think you do too, have some great qualms, because what you read may not necessarily be an intentional malfeasance or anything. It just may be a blind spot in some programs that when they say they don't have contamination, they may very well be thinking of, we don't have any contamination at the primaries, you know.

We don't really worry about the secondaries. We're talking about the primaries.

So, when we're in this territory where we're trying to judge the adequacy or rigor of control for the exotics or secondaries, if we read a statement like that or an audit like that, we may actually misinterpret if we just go by that alone. And this is where the follow-up that Jim's talking about is highly important to validate that.

I went to Fernald in February `85 to do a health physics review, and literally they were running the plant as a heavy metals plant. I mean, you know, it was astonishing, and this was `85.

So, I think that's something to keep in mind when you're trying to judge the program descriptions, because they may very well think they're fine. But in essence, they're not.

CHAIRMAN MELIUS: Okay. Wanda.

MEMBER MUNN: This is, I think, a very broad question that touches on a great deal more than what we're talking about here.

Joe, you mentioned when you were giving us your presentation that some information had been taken at great length from an individual who was a program manager. And, therefore, had a personal interest in what was being said.

And, essentially, you said it in a nicer way than this, but essentially he said you couldn't trust it.

We talk a lot about what is and is not reliable information. And if we discard -- I was going to say if we discard information that's given to us from people that we consider experts, and my next thought was, I guess my real question to you is who do we consider expert. Who do we consider reliable?

Is there any human being that can give us any information that would meet whatever our standard of quality is in terms of reliability?

MR. FITZGERALD: Yes, I really appreciate that issue, Wanda. And I'm just

saying -- and that's why I think I chose to say it nicely.

I think, really, I think we all value that input. But at the same time, when you get to the point where you don't have much in the way of real hard data, you don't have much quantitative, and it looks like that, you know, that interview may become a fulcrum point to decide if there's an exposure to a nuclide in an SEC, I can't escape the perspective of, well, I have to consider the source and make, you know, to be mindful that, you know, the individual may have a stake.

And if he ran the program for 20 years, he may be expert in the program. But, again, in describing whether there was a significance to a source-term, maybe an exotic or something, I don't know, you know, whether I could put as much weight if that was the only piece of information that was going to determine the outcome.

I'd have to keep the other

consideration in mind and have maybe additional perspective, maybe additional interviews or maybe looking for more data or something, but that became, you know, the central argument.

I'd have a hard time bringing it to the Work Group or to the Board and say, you know, so and so said, you know, this was no big deal, but so and so is also the one that ran the program.

I mean, I think that just wouldn't be sufficient.

MEMBER MUNN: But you see, Joe, the point I'm trying to make is --

MR. FITZGERALD: Yes.

MEMBER MUNN: -- we, and by we I mean not only the Board, but all of you who are involved in the program in any way, are not likely to be interviewing anyone who does not have some kind of a personal stake in what, you know -- how do you get around that?

MR. FITZGERALD: No, I just think

it needs to be transparent. I think, you know, there's a piece of information, but you also ought to know, you know, there's a consideration to keep in mind. And we may very well bring it to you, but I think it becomes more important.

If it was just input amongst many and you had countervailing quantitative data as well and this corroborated the quantitative data, that would be not an issue to me.

But if it were the central deciding point, I'd want to bring it forward with that as a consideration for the Board.

I think the Board ought to know that, you know, this is really the central basis for the position.

So, it's not discounting it or not regarding that issue. It's just saying that I think that becomes more and more important to consider the source when it becomes the central basis for the finding.

MEMBER MUNN: I guess the real

point I'm trying to make is expert or not, human testimony has to be weighed against several criteria. And we spend a great deal of effort relying upon the reports of individuals who have been personally involved in all of the activities that we are interested in here. And it's incumbent, I think, upon us to, as you said, view what is reported in light of other concrete evidence.

MR. FITZGERALD: Yes, and I don't think this is really different than what we've considered before. But in the context of getting down to less quantitative data, I think it becomes more and more important to be aware of that kind of thing.

CHAIRMAN MELIUS: Well, we could revert to some medieval torture system --

(Laughter.)

CHAIRMAN MELIUS: -- to extract the truth from somebody, but -

MEMBER MUNN: Jack Bauer says that's not acceptable.

(Laughter.)

CHAIRMAN MELIUS: Okay. We need to wrap up because we have to move on to an SEC petition.

David, quickly.

MEMBER RICHARDSON: This is kind of a big picture question. There was a --

CHAIRMAN MELIUS: Henry, we're going to have to come back to you later. Okay.

MEMBER RICHARDSON: Joe, I think, was laying out an idea that there was a threshold for exposure potential. And I was taking what Jim was describing as an attempt to quantify exposures in a more continuous sense.

I mean, I think at some points it may be useful for us in thinking about this, also, as are we thinking about these as a binary issue when we say is there exposure potential or not.

And this is where there seemed to

be maybe a discrepancy between talking about potential for low exposures versus low potential exposures. And those are two different ideas.

And from an industrial hygiene perspective with something, is it a question about probability of exposure or intensity of exposure, and we're moving back and forth between those.

MR. FITZGERALD: Yes, when I say threshold, I never looked at it that way until we got into this with Mound in the sense where dealing with these, this list of -- relatively long list of exotics, it became clear that since there was very little data, the threshold for even these being on the table in an SEC context was whether or not there was an exposure potential in the first place.

And if you can think about it when you don't have data, that's a devilish thing to get involved with. And those who were on the Work Group can understand, you know, we

went through this a number of times. It was very difficult, you know. There's some data, but not enough data to dispatch some of these.

And, you know, of course there's always this sort of presumption that, well, there may not be any data because the site didn't see a need to collect data. And that very well may be the case. But, you know, it's sort of gotten to this do loop where how do you actually disposition that question.

And you're raising a question on sort of a dose-assessment standpoint, but we're not even there yet. I mean, this is sort of do we even consider dose reconstructability if in fact there's no exposure potential at all.

So, there is a threshold that we've been kicking around. And I think to be fair about it, I think NIOSH, Brant worked hard, came back with some criteria, but that was the point where I guess I realized that, you know, this is, you know, this was just

something that couldn't be resolved because there were so many touch points that had to be satisfied and a lot of this required data.

DR. NETON: Just to comment on that, Joe showed Brant's, I believe, four points or whatever they are -- four bullets, and I think those have been largely misinterpreted.

I mean, I don't think that Brant -- and I've talked to Brant about this -- was really trying to say that those are hard and fast criteria upon which one can evaluate exposure potential. Those are criteria upon which the source becomes smaller, but you still have to have some sort of quantitative description of the exposure.

I think in this program there is just no way we're going to get -- I don't want to say away with, but get around having to come up with some sort of quantitative number whether it's less than a hundred millirem or something of that nature.

Because if there is any exposure potential, we assign a dose. I mean, we don't truncate doses because the exposure was less than a hundred millirem or five millirem or anything. We always assign down to the millirem if we believe it to be there, and it's going to be difficult.

If you get into these very small sources where there is a very low exposure potential, I think we have to come up with some sort of a bounding way to put a cap on that low exposure potential, but I think it has to be quantitative in some way.

I just don't foresee us saying low exposure potentials don't count in a dose reconstruction, because one could argue that extra 10 millirem would put someone from 49.9 over to 50 percent, but it's difficult.

It's going to be difficult. I have no doubt about it. We're struggling with that.

MEMBER RICHARDSON: So, bounding is

--

CHAIRMAN MELIUS: Dave, we really need to move on. I'm sorry. We can come back and talk. And I agree with you actually that I think we need to spend more time talking about this particular issue because I think it's all so critical.

We've spent more time on how to deal with some of the programmatic issues and so forth, but I think this one is just as important.

We're sort of bound by what we do with our -- for our petitions and we have a petitioner that may very well be on the line and we can't -- we said we'd start at 2:30 and I think we owe it to them to try to start near the time.

I think Joe and Jim will be here maybe during our Board work time period. We can come back and talk about this in sort of the follow-up on this also.

So, I apologize, but -- so, now

another SEC petition on BWXT.

MR. RUTHERFORD: All right. Let me find it here. And there's truly another petition for BWXT. We had one previously to that.

Also, I wanted to -- this is LaVon Rutherford, but I wanted to say that some of the points that just came up will be discussed in this petition evaluation. So, I think it's actually kind of fitting.

A little background. We actually sent a -- informed the BWXT claimant that we were unable to reconstruct their radiation dose for the claim on September 28th of 2010.

We received an 83.14 SEC petition on October 5th. We qualified the petition on that date and we issued our Evaluation Report on November 3rd, 2010.

A little background on BWXT. It's located in Lynchburg, Virginia. Actually had three different operating periods that were covered under the AEC.

January 1, 1959, through December 31, 1959, they were doing fuel fabrication for the AEC, oxide fuel pellets.

1968 through `72 was the period when they were actually doing some work with Fernald.

Those two periods were addressed in SEC-169. We recommended a Class for that, and the Board concurred with that.

The third period, January 1, 1985, through December 31st, 2001, is the focus of this presentation. That period, they were doing enriched uranium recovery from weapon scrap, as well as some highly enriched uranium blending, all under the AEC.

Again, our Class under SEC-169 was effective on August 12th. It addressed the first two covered periods.

The basis for that Class at that time was inability to reconstruct doses, internal doses for the Lynchburg Technology Center, and I'll get into that in a little

bit.

We didn't get into the third period at that time, because we had research ongoing for that third period, the `85 through 2001.

We had actually continued some data-capture efforts with Dow. We were looking -- actually, we were looking for additional program information about the radiologic control program for that period to try to address some of the issues, again, very similar issues to what were discussed earlier about the lack of bioassay data.

We did feel that it was possibly feasible at that time. So, we did not get into that. However, through our additional research, we did uncover some additional issues with the rad control program, as well as some other issues.

Again, the facility includes two separate facilities -- or two separate licensed locations. You have the Navy Nuclear

Fuel Division, and you have the Lynchburg Technology Center.

If you look at it, that's kind of like the NNFD is the main production facility. It was primarily involved in fuel fabrication and using enriched uranium most notably for the Navy.

And then the Lynchburg Technology Center was your laboratory. It did a lot of testing, pilot work, different reactor research. Hot cell work and other activities occurred in that facility.

Where we look for information, this is pretty typical. The Board has seen this. We look at Site Profiles, Technical Information Bulletins, Site Research Databases, data captures and worker interviews.

I do want to make one correction. There were actually 37 or 39, depending on how you want to define it, interviews. Thirty-six interviews were mostly conducted

for the first part of the SEC. The last two interviews -- or the last interview involved three different health physicists at BWXT with discussions on their rad control program.

We did data-capture efforts with BWXT, Legacy Management, DOE Germantown, NRC, ADAMS Database, all the pretty much typical ones that we would look at.

Virginia Department of Health, Westinghouse Site, Landauer who had done some of the badge work, early badge work, transuranium and uranium registries, Washington State University, OSTI. We did internet searches.

Recognizing that this is mainly -- this site is mainly a commercial site, you know, we did have to -nation we did do some additional internet searches for this site. Hanford DDRS, National Academy Press.

A little bit about the claims. We have 85 claims -- or 86 claims. And if you remember from Stu's presentation yesterday, a

number of these are Legacy claims that have been in the program for a while.

And we have 65 of those 86 meet the current recommended Class. And we've completed dose reconstruction for two claims.

You'll look and you'll see that there is internal monitoring data for 43, and external monitoring data for 61. However, I want to define that most of that internal monitoring data is associated with uranium, and I'll get into a little bit more of that.

The Lynchburg Technology Center, LTC, mainly during the `85 to present, if you look back, Building A, which was the Reactor Building, it actually decommissioned work in 1983.

The main work that continued from the `60s to present was focused on laboratory analysis, hot cell work, cask handling, liquid waste disposal and storage of highly activated contaminated materials, as well as fuel cell inspection.

The NNFD, as I mentioned, was mainly their production facility, fuel fabrication. In the later years, they did downblending of highly enriched uranium to fuel-grade enrichments.

NNFD, the primary radionuclide of concern was uranium. In the early years, there was thorium, in addition. However, in these later years, it was uranium typically enriched from four percent to over 90 percent.

LTC, the primary radionuclides of concern for both internal and external were fissile materials, transuranics, irradiated fuels and materials, as well as fission activation products.

So, we did have -- it was not a, you know, it was more into that exotic number of radionuclides to deal with.

What we have, if you'll notice the -- at the NNFD, we had uranium bioassay for -- these are for claims that are in the 1985 to 2001 period. And the only monitoring data

that we have are associated with what was given to us by BWXT for the claims.

We have a significant amount of uranium bioassay samples -- or a good amount, I should say, of uranium bioassay samples, as well as isotopic analysis for the NNFD.

For Lynchburg Technology Center, however, we had uranium bioassay, we have six results, and the whole body or lung counts at 21 results, and breathing zone samples of nine results.

I do want to point out it's actually -- I want to correct that. The 21 results are associated with positive whole body counts. We actually had 50 whole body counts for the period. I think that gets into Joe's exposure potential.

Available external monitoring data. We have film badge data that exists for both NNFD and the Lynchburg Technology Center.

NNFD did not address neutrons. They felt neutrons were not a significant

source of exposure. And so they were not addressed at NNFD.

They did address neutron exposure during the early years when reactors were in operation at LTC. However, those reactor operations ceased in 1983.

In available records, NIOSH found no radioactive material inventory data that would enable NIOSH to place an upper bound on potential exposures to the wide array of commercial and DOE radiological sources that could have been encountered at the BWXT facilities.

During our review, we found that there are insufficient monitoring and source-term data. And this is mostly associated, again, with the Lynchburg Technology Center that -- from which to draw conclusions of potential magnitude of internal dose from the period 1985 to 1994.

Again in our review of the -- this period, we went back to try to draw a

conclusion that they had a good, rigorous health physics program that would support the limited bioassay samples and incident-based sample, or, as Brad called it, event-based samples that occurred at Lynchburg Technology Center.

And we uncovered that there was from an NRC audit, that there was severe limitations of records, plans and procedures in the 1980s.

In addition, workers' records do not indicate that all workers with exposure potential were monitored and worker movement across the site was undocumented.

And really this is -- the last one was the kicker. We had CEP data. CEP, for those that remember, was a vendor who falsified bioassay data in the early `90s at Sandia. And they were the main bioassay vendor at BWXT at the time.

So, beginning in 1994, though, in December 1994, we do feel data is sufficient

to reconstruct internal doses. The NRC feedback, they had plans, procedures put in place. They put an NRC inspector on site. Increased health physics staff. And they also implemented 10 CFR 20 guidelines that were -- they were required to implement them by January 1, 1994. And CEP was replaced as bioassay vendor.

External exposures, we believe there are sufficient monitoring data and source term information to conclude the potential magnitude of external exposures, as well as medical dose. And we will use any personal monitoring data that comes available, with exception to CEP.

Again, for those that remember the worker interviews, we interviewed firefighters who indicated that they worked at both LTC and the NNFD. We interviewed other workers, the maintenance workers that were assigned at both NNFD and LTC.

And from their records, we could

not -- their monitoring records we could not distinguish between that to recognize an ability to separate the Lynchburg Technology Center from the NNFD.

So, therefore, we were unable to limit the Class to the LTC. We had to make it all workers.

So, our infeasibilities are focused on 1985 to 2001 -- or, actually, our infeasibilities focus 1985 to 1994. And from December 1st, 1994, to 2001, we feel it is feasible.

And, again, health endangerment, we could not reconstruct the dose. Evidence reviewed in this evaluation indicates some workers in the Class may have accumulated chronic exposures. So, there is health endangerment.

Our proposed Class is all atomic weapons employees for BWXT from January 1, 1985, through November 30th, 1994, for a number of workdays aggregating at least 250

days and so on.

Again, does reconstruction is not feasible from January 1, 1985, through November 30th of 1994.

Any questions?

CHAIRMAN MELIUS: Questions from Board Members?

Paul.

MEMBER ZIEMER: LaVon, were any of the personnel at this naval nuclear part of the facility actually Navy people versus --

MR. RUTHERFORD: You know, Dr. Ziemer, that's a good question. Of course we do not get any claims from that.

I imagine that there were Navy people that probably came in to inspect fuel, to inspect certain aspects of the program. However, I cannot be for sure of that.

MEMBER ZIEMER: Well, my follow-up question is, did you pursue records with the nuclear Navy for that site.

MR. RUTHERFORD: No, we did not

because the requirements or the implementation of the rad control program was the responsibility of the facility operator. So, we did associate that to get records from them solely.

If there were, you know, my understanding would be that the Navy would only keep personnel monitoring records or such associated for their own people. They would not keep personal monitoring records for contractor employees, and the Navy people would not be eligible under this program.

MEMBER ZIEMER: Yes, I understand that. But if there were personnel monitoring records for people who were co-working, those might be useful to you.

I know that, you know, the Nuclear Navy program, health physics program was actually attached to the Department of Energy. In a sense, it was my responsibility when I was there.

I can tell you that I could not

look at any Nuclear Navy information in health physics. And I only tell you that -- the Navy -- Nuclear Navy was very stringent in their recordkeeping.

And it may be that there are records, and it may be that you won't be able to get them either, but I'm just thinking of that as a data source.

MR. RUTHERFORD: I do want to point out that it was really not the infeasibility of reconstructing dose at the NNFD, which is where they produced the fuel. It was at the Lynchburg Technology Center that drove the recommended Class.

MEMBER ZIEMER: But -- well, okay. It would cover both sites, though.

MR. RUTHERFORD: And actually, though, if you also remember, there was a significant amount of commercial work that occurred at that site.

So, the Lynchburg Technology Center was not only analyzing Navy fuel. They

were analyzing the commercial activities that BWXT was doing at the time, too.

CHAIRMAN MELIUS: Other questions from Board Members?

(No response.)

Okay. I believe we may have a petitioner or petitioners on the line. So, if those petitioners would like to make any comments?

If you're on the line and don't wish to comment, that's fine also.

MR. RUTHERFORD: Can I add one more thing, Dr. Melius? I apologize.

CHAIRMAN MELIUS: Okay.

MR. RUTHERFORD: I do want to point out this is one case where we used worker interviews to not only support the Class recommendation, but also to support the boundaries around that Class.

It just -- I just wanted to bring that up. Just one instance. One instance.

CHAIRMAN MELIUS: Yes. Okay. Do

the petitioners wish to make any comments? As I said, you don't have to.

Okay. Assuming not then, do any other Board Members have questions or do I hear a recommendation or motion?

MEMBER RICHARDSON: You just may want to remind them to push * 6. They may be on the line, but --

CHAIRMAN MELIUS: Yes, if you've muted the phone and you have * 6 on to mute or you muted your own phone, if you wanted to hit * 6 again, that will unmute.

Okay. Any other Board Members?

Wanda. I'm sorry.

MEMBER MUNN: Are you ready for a motion?

CHAIRMAN MELIUS: I'm ready for whatever the Board may wish to do.

MEMBER MUNN: I would like to move that we accept the recommendation of NIOSH to grant an SEC for the period January 1, `85, through November 30, 1994, for BWXT.

MEMBER CLAWSON: I second it.

CHAIRMAN MELIUS: Okay. Any further discussion?

Okay. If not, could we do the roll call?

MR. KATZ: Let me note, before I do the roll call vote, that Dr. Poston had recused himself from this discussion from the beginning of it.

So, Dr. Ziemer.

MEMBER ZIEMER: Yes.

MR. KATZ: Mr. Schofield.

MEMBER SCHOFIELD: Yes.

MR. KATZ: Dr. Roessler.

MEMBER ROESSLER: Yes.

MR. KATZ: Dr. Richardson.

MEMBER RICHARDSON: Yes.

MR. KATZ: Mr. Presley.

MEMBER PRESLEY: Yes.

MR. KATZ: Ms. Munn.

MEMBER MUNN: Yes.

MR. KATZ: Dr. Melius.

CHAIRMAN MELIUS: Yes.

MR. KATZ: Dr. Lockey.

CHAIRMAN MELIUS: Yes.

MR. KATZ: Dr. Lemen.

MEMBER LEMEN: Yes.

MR. KATZ: Mr. Griffon -- oh, Mr. Griffon, I should note, has left the Board. He's not in attendance. So, he's absent and I'll collect his vote with normal procedure as soon as we can after this meeting.

Mr. Gibson.

MEMBER GIBSON: Yes.

MR. KATZ: Dr. Field.

MEMBER FIELD: Yes.

MR. KATZ: Mr. Clawson.

MEMBER CLAWSON: Yes.

MR. KATZ: Ms. Beach.

MEMBER BEACH: Yes.

MR. KATZ: Dr. Anderson.

MEMBER ANDERSON: Yes.

MR. KATZ: Did I leave anyone out?

I don't think so. Okay. So, then

it's unanimous with one absent member and one member recused. And I'll collect that vote afterwards, but the motion passes in any event.

CHAIRMAN MELIUS: Okay. We have a few minutes before the break. That will give you a full break, plus. So, don't fret, but we do need to really start at 3:30 sharp.

But maybe -- I had interrupted David Richardson in the midst of his questioning, and I think Henry had a question also on the exposure-potential issue. So, do you want to follow up?

I don't know if Joe Fitzgerald is in the room. Am I -- yes, Arjun is here. But he'll go get him and Jim's here. So, go ahead.

MEMBER ANDERSON: I didn't have so much of a question. Just a point that, you know, the biologic monitoring as well as air and badges, we tend to -- you get a quantitative value from that.

But I think we also have to keep in mind that especially in the earlier years, the variability in some of those and their -- a lot of the -- or a number of the facilities were actually, you know, implementing kind of state-of-the-art, new techniques that were not yet fully developed.

So, we have to remember that even though it appears to be quantitative, its representativeness as well as, you know, the reliability is something we also have to always keep in mind, but it clearly would be our number one choice of data. But in some instances, there may be more variability in that than in the memory of workers and things like that.

CHAIRMAN MELIUS: David, did you have -- or lost your train of thought now?

MEMBER RICHARDSON: Yes.

CHAIRMAN MELIUS: Okay. Okay. In terms of follow-up on this issue, my personal opinion is that it would be -- I think there

are obviously issues we could continue to discuss, but I think that what probably be most productive in the context of a specific site in, you know, keeping in mind.

So, I think both Jim Neton and Joe Fitzgerald's sort of presentations and their sort of not only raising issues, but sort of thinking about how we might approach these, I think, has been useful and will be helpful going forward on the Work Group.

So, I mean, I think it puts sort of the onus back on the work groups and I don't want to pressure you, Josie, but -- or whichever Work Group is ready. And if it's not ready for the next meeting, that's fine, but I think it would be to come back and have a discussion about a specific site.

We'll try to leave a little extra time on the agenda so that we can maybe discuss some of the general issues and give a full discussion to it because I think it will -- it may take time. It's always hard to

predict.

So, whoever is ready to come back, but I think -- again, I think we're seeing some potential changes in NIOSH's approach to this. And I think Joe sort of clarified how SC&A would look at it or how it should be looked at.

So, I think we can make progress and let's see where we go. Let's not try to put a time table on it, but at some point we -- whenever someone, one of the work groups is ready, let's bring that issue back and have a full discussion of the Board.

Does that make sense to people?

MEMBER BEACH: Well, Jim, on that I believe that Mound is probably the closest, but it will depend on what NIOSH comes back with --

CHAIRMAN MELIUS: Right, right.

MEMBER BEACH: -- prior to the next meeting.

CHAIRMAN MELIUS: Yeah, I'm not --

again, I'm not sure if for our next Board meeting, you will be ready.

MEMBER BEACH: Right.

CHAIRMAN MELIUS: And I don't want to, you know, push the process along until - because it really isn't going to do us any good until we've had a full evaluation, what the Work Group and NIOSH and SC&A feel is a full evaluation of the issue.

And, again, it may not resolve it, but at least that will probably bring back at least some more complete information to the Board about the site and this issue.

MEMBER BEACH: Well, the other side of that if it's not resolved, we may not come to a resolution in the Work Group either. So, it's --

CHAIRMAN MELIUS: Well, and I think in that case I think we would want to bring -- I think it should be brought back to the Board.

And, you know, one of my

observations -- and maybe we can talk more about it with Linde. And again I'm not faulting the Work Group or -- and you can pick a bunch of other sites and so forth, is that I think one of the difficulties we have is with sites where we're having trouble resolving -- we keep making -- everybody is making good faith efforts to resolve them, but that takes time and repeated, you know, document development and review and so forth.

And so then by the time it comes to the Board, we've all forgotten about it. We haven't heard about the site for so long. So, it's very hard for the Board to resolve the issue.

I think the briefing today on Linde has been very, very helpful and I certainly understand it better. But for me, it was -- it identified issues that I needed to -- I wanted to look into or understand better, and I think other Board Members may have had the same. So, it's hard.

And, again, we've got to try to find the balance, you know. Some of these issues take time to resolve. But how we keep sort of the Board engaged in it, too, so the Work Group isn't out there floundering or trying to reach consensus, maybe it can.

I mean, a small group can't. It's -- a full Board can't with some issues, as we've experienced. So, it's not -- you can't expect a group of four to do so, either.

Brad, you had a thought?

MEMBER CLAWSON: I just wanted to also express, you know, as Dr. Neton had mentioned, we can't get a cookie cutter for every one of them. Each one of these sites is unique, and we haven't even started playing into the classification issues either when we're talking transparency.

And this is where we're getting into a lot of them with a lot of these sites. And it's very difficult for us as a Work Group, to be able to bring this back and to be

able to give it a fair airing in front of the public and also the Board.

CHAIRMAN MELIUS: Yes, but I think that's going to be harder. And I don't know how we'll resolve the classification issue. I'm concerned about it and we're all concerned about it, but it's going to be even more difficult if we don't understand how the Work Group or the people on the Work Group that, you know, with Q clearance that may have been involved in some of these issues, how they evaluated something.

If you come back and can't tell us even how you evaluated, you know, so what do you say? We went in a room and we talked about it and this is what we concluded about something. And we're not going to tell you what it was and we can't tell you how we did it, but, I mean, that's very hard for us to reach judgment on that.

Now, it's hard if you don't know what it is. But at least if we also know how

you evaluate it and how you reach your conclusion on it, I think we can, you know, have more trust and maybe work that issue out.

Let's see. I'm not real optimistic, but let's see what we can do. And we have some -- there's constraints on that obviously with -- we have very real security issues that need to be addressed.

Okay. With that, let's take a break for a half hour or so. Reconvene at 3:30. We'll start with Texas City and then talk about Linde.

(Whereupon, the above-entitled matter went off the record at 3:01 p.m. and resumed at 3:35 p.m.)

CHAIRMAN MELIUS: Okay. We want to start again with Texas City. I'm trying to remember who I cut off now.

Wanda, do you have comments?

MEMBER MUNN: I was going to ask if you were ready for a motion, but I think you should ask for more comments.

CHAIRMAN MELIUS: Anybody else have comments or questions?

There's one other person that wanted to --

MEMBER MUNN: Someone else had their --

MEMBER ROESSLER: Speak up, Wanda.

MEMBER MUNN: Someone else was going to make a comment before --

CHAIRMAN MELIUS: Jim, that was right. Yes.

MEMBER LOCKEY: I was going to say I appreciate both the comment that both Jim and Paul made reflecting around the modeling issue and size of the building and exchange.

Where's Jim?

Jim, how much effort was spent going back and trying to look at those particular parameters in this situation?

DR. NETON: It's been a couple years. So, I don't recall. I know we had a Worker Outreach meeting in Texas, and we

interviewed one claimant, but I don't remember.

One of the particular problems at Texas City Chemicals was a lot of the workers that did sort of the labor there are not eligible for compensation of this program. They were contractors.

And that was my recollection from the town meeting we did, was that many of the people there were disgruntled because they were the laborers that did the work that were contractors, and they aren't eligible to be compensated in this program because it's an AWE and only the AWE-direct employees are covered.

But to answer your question, I don't recall what we --

MEMBER LOCKEY: Is the building still there?

DR. NETON: No, I don't think the building is there anymore.

CHAIRMAN MELIUS: I mean, my

comment that came up in the Work Group, also, is that without information on the building, it's very hard to model.

I'm uncomfortable in some ways with this, but at the same time I just can't figure out how to model it in a fair way or plausible way without enough information about the building to have some confidence in the model.

If we had the information on the building, I think that would help. And I think that's really what Jim Neton concluded also at the time.

Paul, yes.

MEMBER ZIEMER: I believe there actually were photographs of the building, but -- and you could argue that you might estimate the size of the building from the photographs. But even if you do that, then the issue is one that Jim talked about, and that is of partitioning, which is what led me to think about saying okay, let's make a small volume

and put the thing there.

There is a little information on the building, but not enough to do what we would like to do.

CHAIRMAN MELIUS: Okay. No further comments. Then, Wanda, your turn.

MEMBER MUNN: Yes, and actually I do have a comment.

CHAIRMAN MELIUS: Okay.

MEMBER MUNN: Given the information that we have with respect to the source-term and to the period of operation that was involved in this, the simple use of common sense would lead one to believe that there is no way that an SEC should be provided to this particular site.

The concerns with respect to bounding are very interesting. When people say they don't understand what bounding means, it puzzles because bounding is clearly not only allowable, but mentioned specifically in the regulations.

And we can certainly create an upper bound regardless of what other circumstances exist when we know what the source term is.

The key words in Dr. Neton's presentation were sufficient accuracy, and that is the problem that is often faced.

I cannot believe that objective individuals could look at the information we do have and say that it's impossible to bound this; we certainly can bound it.

It is unfortunate that we are in a position where we must approve this kind of SEC, because as I've mentioned in the past and will continue to say again, this misleads people with respect to their concerns over whether or not they were injured not by their work, but by the radiation involved in their work.

One certainly cannot look at an environment like this one and say that it doesn't create a hazard. For some workers

under some circumstances, of course it does, but our job is to look at the radiation hazard.

And given the source term that we have, the radiation hazard can easily be shown to be small enough to not be of concern for virtually anything other than potentially respiratory cancers, but we don't have the latitude of saying this type of cancer and only this type of cancer. We're faced with the decision concerning all cancers or none.

And for that reason, I can see that we have no alternative other than to accept NIOSH's proposal for an SEC for this site even though there is every reason to believe that that's not a reasonable or truly an appropriate thing to do under any circumstances other than those imposed by the law.

CHAIRMAN MELIUS: Is that a motion?

MEMBER MUNN: I move we accept the NIOSH recommendation for an SEC.

CHAIRMAN MELIUS: Okay. Thank you.

MEMBER PRESLEY: Second.

CHAIRMAN MELIUS: Second from Bob Presley.

Any Board Members have comments?

Brad, you're -- no? Okay.

Jim Lockey, are you --

MEMBER ZIEMER: Well, I would -- this is Ziemer. I was going to ask if the mover was arguing against her own motion.

(Laughter.)

MEMBER ZIEMER: You don't have -- that's a facetious comment.

MEMBER MUNN: Yes.

MEMBER ZIEMER: I understand where you're coming from. I would make a similar motion with a similar prelude probably.

CHAIRMAN MELIUS: I think, again, I think we all know this. I mean, the issues are plausible upper bounds. And it's also that, you know, the two-step way it's established in the regulations, the two steps,

it's -- and if there are -- if we can't reconstruct doses with sufficient accuracy, et cetera, then the threshold for health endangerment is relatively low.

And it is met, I think, in this case and again, one -- I wouldn't disagree with some of Wanda's conclusions. But in the context of the regulation, I think we have to move ahead.

So, any further comments?

If not, Ted, do the roll call.

MEMBER CLAWSON: Jim, I just want to make sure that the comment at the very beginning, exactly what we are voting on because it kind of went around.

Do we have that NIOSH cannot perform dose reconstruction?

CHAIRMAN MELIUS: The motion is --

MEMBER MUNN: With sufficient accuracy.

CHAIRMAN MELIUS: Actually, I think the motion was to accept the NIOSH

recommendation. So, it's to accept the Class Definition from NIOSH that all atomic employer employees who worked at Texas City Chemicals October 5th, 1953, through September 30th, 1955, for a number of workdays, et cetera.

So, that's what we're voting to accept.

MEMBER LEMEN: As an SEC.

CHAIRMAN MELIUS: As an SEC Class, correct.

So, now that we've clarified that, Ted.

MR. KATZ: Dr. Anderson.

MEMBER ANDERSON: Yes.

MR. KATZ: Ms. Beach.

MEMBER BEACH: Yes.

MR. KATZ: Mr. Clawson.

MEMBER CLAWSON: Yes.

MR. KATZ: Dr. Field.

MEMBER FIELD: Yes.

MR. KATZ: Mr. Gibson.

MEMBER GIBSON: Yes.

MR. KATZ: Mr. Griffon is absent. I will collect his vote after this meeting.

Dr. Lemen.

MEMBER LEMEN: Yes.

MR. KATZ: Dr. Lockey.

MEMBER LOCKEY: Yes.

MR. KATZ: Dr. Melius.

CHAIRMAN MELIUS: Yes.

MR. KATZ: Ms. Munn.

MEMBER MUNN: Yes.

MR. KATZ: Dr. Poston.

MEMBER POSTON: Yes.

MR. KATZ: Mr. Presley.

MEMBER PRESLEY: Yes.

MR. KATZ: Dr. Richardson.

MEMBER RICHARDSON: Yes.

MR. KATZ: Dr. Roessler.

MEMBER ROESSLER: Yes.

MR. KATZ: Mr. Schofield.

MEMBER SCHOFIELD: Yes.

MR. KATZ: Dr. Ziemer.

MEMBER ZIEMER: Yes.

MR. KATZ: So, it's unanimous. No abstentions. One member absent, and the motion passes.

CHAIRMAN MELIUS: Okay. Good. Okay.

The next topic to go back to is Linde, and do people have further questions, comments, suggestions?

Go ahead, Wanda.

MEMBER MUNN: As most of you know, when we start talking about radon and its effects and what we can and can't do with it, some of us have had quite a history with these issues.

It is of great concern that radon as an element, seems to have moved to the forefront of a great many things that we're doing and has become an issue just short of demonic status in terms of potential hazard to the environment and to the people who live and work near radon, which turns out to constitute a large portion of the United States,

actually.

But this particular amount of concern over the radon at Linde especially in light of the agreement that has gone forward between NIOSH and our contractor on other items, is a considerable concern, I think.

There is no guarantee any precise information over and beyond what we already have pursued with Petition 107, and I would like to move that we accept the NIOSH recommendation that they can in fact provide the kind of dose reconstructions that are necessary given the information that they have and reject the petition for SEC Number 107.

CHAIRMAN MELIUS: 107, yes.

Is there a second to that?

MEMBER ROESSLER: Second.

CHAIRMAN MELIUS: Okay. Comments from the Board?

Jim lost his pen, but go ahead, Jim.

MEMBER LOCKEY: When I go -- when I

was looking at this whole process in relationship to radon and bounding the radon issue, even though it's not part of the legislation as a physician when somebody gets involved with exposure-effect relationships, the outcome here in relationship to radon exposure is primary respiratory cancer.

So, when I look at, are we being claimant-friendly in relationship to this particular bounding issue in relationship to this particular material, radon, and the outcome of interest which is respiratory cancer, the answer is yes, in my mind.

That really takes -- that really has a lot of force with me because I'm saying, you know, I look at it and say, if we have claimants, are they going to get financial compensation for the cancer that really is of interest in relationship with radon exposure in this circumstance. And the answer is yes.

So, that's reassuring to me that we are in this situation, being claimant-

friendly.

CHAIRMAN MELIUS: I don't want to try to generalize from a sample of one, but I think somebody made the same comment about Blockson. And just in the process of reviewing a lung cancer from Blockson, it's not -- didn't make it.

So, I mean, I guess I'd like a little more evidence there. But for doing that, it was just sort of odd that that's the one that came forward.

But anyway, other comments. Henry, and then Josie.

MEMBER ANDERSON: Yes, I'm just wondering do we want to split these two and deal with 107 separate from --

CHAIRMAN MELIUS: We are dealing -- right now we're dealing with 107.

MEMBER ANDERSON: Okay.

CHAIRMAN MELIUS: We're not talking about 154.

MEMBER ANDERSON: Okay.

CHAIRMAN MELIUS: Josie.

MEMBER BEACH: My comment was just to remind the Board that this was not just simply a radon issue. One of my concerns was also the particulate. And I know Wanda strictly was talking about the radon and there was actually -- it was twofold.

CHAIRMAN MELIUS: Yes, my particular concern, let me echo that, is I'm not sure about the radon yet because I think I'm actually confused and there's some factual things that we've been hit with today. I'm not sure what needs to be done next.

I was not enamored with John Mauro's proposal, but maybe it's something that would work. And I'm not sure it's something that's necessary to that.

But I am concerned about the exposures during the renovation period and whether, based on source term information and no sampling data, as I understand it, it's really realistic to be able to reconstruct

those.

Now, I have not had time to read the reports. And my understanding is that SC&A found that it was. And that was the conclusion of at least some members of the Work Group.

But, you know, frankly, personally, I would like some more time to review that information and understand it. Because certainly one of the options I saw, aside from the radon, was to separate this into two time periods: the renovation period, a lot of demolition and so forth going on, as I understand it, and then, secondly, a more traditional, residual exposure period.

And I think that's sort of the suggestion that Josie made early on when we had our discussions, but I personally would really need to read more and understand it better.

I'm not sure what I'll conclude. I don't want to say I would, you know, for

example, I'm not sure I would support an SEC at this point from what I know, but I would certainly -- I certainly still have questions.

This is a lot of information to be presented to the Board in a short period of time. And for us to understand, I understand how the -- well, along the Work Group. But for the rest of us to sort of understand it and feel comfortable agreeing with a Work Group that's split on something is a little bit difficult in a short period.

Yes.

MEMBER ANDERSON: Just one more back on this. I'm wondering, I mean, because part of it is sending it back to the Work Group when they've really thrashed out a lot of the issues.

But saying one thing we might be -- looking at it, I would tend to agree that, you know, our traditional residual period when it's basically just a decrement over time is quite different than when they're chopping up

and breaking up cement floors and things like that --

CHAIRMAN MELIUS: Yes.

MEMBER ANDERSON: - that we could ask the group to look at would they come to agreement if you could split the renovation period out and how, you know, can that be done?

I mean, was the renovation done mostly at one point in time and then ended, and now we're just pushing forward with the rest of the residual time?

That might be something that the Work Group in fairly short order could decide, well, is that feasible to split it, how would you split it, and then would there be agreement?

Because the latter period is kind of the -- the residual would be more of the radon issue, perhaps, than the dust issue. And early on it's a different source term, I would think.

So, that might be one thing that at least I would be interested in hearing from the Committee is to if that's feasible, could that be done.

CHAIRMAN MELIUS: Josie, then Paul, then Jim.

MEMBER BEACH: So, I actually had a point to make before Dr. Anderson. But to answer him, I did -- Mike and I talked and recommended that the SEC be granted for the residual period -- or the renovation period, excuse me, from 1954 to 1969.

We did not think that after that it would be acceptable to have an SEC period. So, that was something I talked about this morning.

The other thing is not to put Bill on the spot, but he -- just speaking strictly on the radon, his recommendation, he was invited because he was an expert in the field of radiation -- radon. Excuse me.

What NIOSH proposed was to use the

samples from 1946. And I'm pretty sure I heard Bill say that he didn't feel that could be bounding, but I'll let him speak to that, if he would.

MEMBER FIELD: One thing I'm sure about is I don't think the samples can be bound, from my perspective, based on the quality of the measurements, that being unknown, and how well it reflected long-term average exposures.

And I think what you were saying, Jim, is sort of my feelings as well, is that it would be very helpful to have more time to digest some of this.

So, it would be interesting to know where the contamination was on the surface, if there was gamma measurements performed on the surface, where the bore measurements were in relationship to the various tunnels.

I've heard conflicting information just this morning about different

concentrations in the various bore holes.

So, I did think John's suggestion, I thought that was -- it was a logical suggestion. It would be helpful to see that in writing, because he went through it pretty quickly this morning, and just to digest that a bit more also, but I thought that was something that had merit.

CHAIRMAN MELIUS: Paul.

MEMBER ZIEMER: Well, of course one of the reasons this has come to this level of discussion with the Board is because the Work Group was split on this, but it appeared to me that there's a lot of new information that arose over the weekend relative to the tunnels. And it wasn't clear to me to the extent to which the Work Group actually has dealt with that part of it or even the musings of Dr. Mauro and others over the weekend and how that plays into it.

I was certainly prepared to support the NIOSH recommendation, except when

the tunnel information came into the picture. And actually in writing, what we have from SC&A is that they don't really have a strong position on that, but we heard some conflicting things. And I do not have a good feel for the extent to which those tunnels are important or not.

Jim, I didn't fully -- it appeared that you said you were going to have to consider all radon, not just fractionate it out.

And there were some other issues that I didn't get a good grasp on, but I guess personally I would feel uncomfortable voting on this today.

And with all respect to the petitioners' concerns about dragging this out, and I do recognize that, but I think in a certain sense it's unfair if we have new information, just to say, well, time is up, we're going to vote and not consider this.

It is some information that is

perhaps important, but I don't know if it's important at this point.

DR. NETON: The only radon that is required to be considered is AEC-derived --

MEMBER ZIEMER: Yes, I understand that part, but can we do that?

DR. NETON: If the analysis was based on an in situ measurement in the tunnel, there's nowhere we could differentiate between the AEC radon and the natural radon. So, we would automatically assume it was all AEC-derived as opposed to a model that could --

MEMBER ZIEMER: Yes, which changes the final number.

DR. NETON: Actually, interestingly enough, the model we originally proposed was about 40 picocuries per liter before we found this radon in the tunnel issue.

I think it was sort of, well, coincidental. Fortuitous, I guess. I don't know that we expected that sort of agreement from a model versus a measured value.

CHAIRMAN MELIUS: Gen, then Dick Lemen.

MEMBER ROESSLER: It seems like there are several reasons to put this off a bit. And I think that we should only maybe consider doing it for a short time, but I have a list of papers, references -- well, actually Steve Ostrow put together in the anticipation that some of the Board Members would want more information.

I realize that in a short presentation, we couldn't go over all of the methodology that NIOSH had proposed, which I think convinced some of us in the Work Group. But certainly in a short period of time, you couldn't fully comprehend that. So, I can provide that list of references.

The second thing is, as Paul said, we were rushed since the Work Group meeting the other day. We ended sort of uncertain. As a Work Group, we didn't have time to pull together all of this.

We do have some new information. So, my suggestion would be that I think the Work Group would be willing to do these things to send out the material to the Board Members and then to have another meeting and discuss the new issues, but I don't think we should delay it beyond the Board's next teleconference call.

I think we should commit to try and -- if we did delay the vote, to plan to make the decision then.

CHAIRMAN MELIUS: I just asked Ted to look up the next meeting, because I don't recall when it is.

MEMBER LEMEN: Are you ready for me?

CHAIRMAN MELIUS: Yes.

MEMBER LEMEN: I really feel that we have enough information to go ahead. I'm not in favor of accepting NIOSH's proposal. I am -- from what I've heard this morning, I think we should go ahead and make a vote and

go ahead with Wanda's vote.

But then if it passes, I guess there's no need to go to the second one, but I'm in favor of an SEC for this and I don't think that additional time is going to change that information.

I'm still concerned about the way several things have been treated in the dose-response area. So, I'm just speaking in favor of going ahead and designating this as an SEC.

CHAIRMAN MELIUS: Anybody else while Ted struggles to find out when we're meeting next?

MR. KATZ: I've found it. It's January 12th.

CHAIRMAN MELIUS: Okay.

MEMBER LEMEN: That's a telephone one, though, right?

CHAIRMAN MELIUS: Yes, I think it may be possible. I think it's difficult if there's lots of questions about technical material, to deal with something like this in

a conference.

I'm willing to try, but I personally would be reluctant to say that I would, you know, absolutely not want to go beyond that teleconference.

I just think the nature of a teleconference and getting everybody and listening to everybody makes it difficult, but it may be.

It may be that after reviewing the information -- I do think there's time between now and January 12th. So, I'm willing to give it a try.

The other concern I would have would be the question of does the Work Group need to get together or how are we going to resolve some of these issues about -- well, I guess is SC&A going to figure out what they're proposing?

Does the Work Group want to feel the need to review that or is there some way of reviewing that information and some of

these factual issues and getting clarification on it?

There will be a conference call. I don't think it's insurmountable, but I do think that would be a prerequisite also.

Josie.

MEMBER BEACH: Well, out last Work Group meeting dealt with the radon. The start of the meeting, we had a proposal from NIOSH and SC&A. From the paper that we received prior to the meeting, they were not in agreement to that proposal.

During the Work Group meeting, they had changed -- well, part of the group had changed their focus or opinion on it.

So, when we left the Work Group, there was no recommendation that was strictly on the radon. And then of course John came up with a new proposal which Bill -- well, I shouldn't stick it on Bill, but would like to be explored further.

I have to agree with Dr. Lemen

that I think we should go ahead and go for this vote. And then if it fails, I'd like to make another recommendation or proposal.

CHAIRMAN MELIUS: Mike.

MEMBER GIBSON: I guess I'd just like to comment, too, that, you know, we're two years into this process now in this SEC. And we keep going out and getting this information to try to verify some of these plausible bounds that's been put on this petition since, I think, November of `08. And, you know, if we go out and find more information, are we going to come to an agreement on it? Do we know that that information is good?

I know the regulations allow for bounding doses and things like that, but the regulation also requires for timeliness. And so when do we -- when do we give just dues to these claimants and look at the timeliness issue and weigh that just as heavily as some of this other data that may or may not be out

there somewhere?

CHAIRMAN MELIUS: I would just add aside from that, I think what at least some of the Board Members are saying is that, yes, you've been working through this issue for quite a while. The rest of us are unfamiliar with it. And it's very hard in a short period of time, to become familiar enough to reach a judgment, and especially when the Work Group is split on this.

And I think what we're talking about is not to delay this forever, but to our January conference call. And maybe we can settle then, maybe we'd have to go to another meeting, but certainly no -- every intent to try to finish it up in January or at the following meeting, I guess.

I don't want to predict how we'll do it, but, I mean, it is hard to do that and I'm personally confused in trying to reach that.

And I don't think that -- I think

we also have to owe the claimants and the petitioners the right to give our best judgment. And that's an informed judgment. It's not a reflex judgment.

And I think we, you know, some of us at least feel we need more time.

Paul.

MEMBER ZIEMER: Maybe a good way to proceed would be for a motion to table to the next meeting. A non-debatable motion, if it's seconded.

CHAIRMAN MELIUS: Are you making that motion?

MEMBER ZIEMER: Yes, and I'm making that motion.

MEMBER ANDERSON: I'll second.

MEMBER LEMEN: Wait a second. Point of order. I don't think we can do that. We already have a motion.

MEMBER ZIEMER: A motion to table over -- supersedes an existing motion. It has the priority and it's a non-debatable motion.

CHAIRMAN MELIUS: Okay. So, we have a motion to table until the next meeting, and we have a second to that.

Ted, do you want to do roll call on that?

MR. KATZ: Yes. Okay. I'll just start at the top of the alphabet for this.

Dr. Anderson.

MEMBER ANDERSON: Yes.

MR. KATZ: Ms. Beach.

MEMBER BEACH: No.

MR. KATZ: Mr. Clawson.

MEMBER CLAWSON: Yes.

MR. KATZ: Dr. Field.

MEMBER FIELD: Yes.

MR. KATZ: Mr. Gibson.

MEMBER GIBSON: Yes.

MR. KATZ: Mr. Griffon is absent, which is okay in this case.

Dr. Lemen.

MEMBER LEMEN: No.

MR. KATZ: Dr. Lockey.

MEMBER LOCKEY: Yes.

MR. KATZ: Dr. Melius.

CHAIRMAN MELIUS: Yes.

MR. KATZ: Ms. Munn.

MEMBER MUNN: Yes.

MR. KATZ: Dr. Poston.

MEMBER POSTON: Yes.

MR. KATZ: Mr. Presley.

MEMBER PRESLEY: Yes.

MR. KATZ: Dr. Richardson.

MEMBER RICHARDSON: Yes.

MR. KATZ: Dr. Roessler.

MEMBER ROESSLER: Yes.

MR. KATZ: Mr. Schofield.

MEMBER SCHOFIELD: Yes.

MR. KATZ: Dr. Ziemer.

MEMBER ZIEMER: Yes.

MR. KATZ: Okay. The motion passes with 13 votes in favor, two opposed and one member is absent.

CHAIRMAN MELIUS: Okay. Before we move on to the other petition, let's try to

decide what we need to do informationally or otherwise to get ready for the next meeting.

I think most of it is we get the information to all the Board Members so we have reference and access to all of the various reports in this area and the SC&A reviews and so forth.

I'll leave it up to the Work Group to deal with the factual issues that have come up.

I mean, I really think that can be done with a conference call. Is that fair?

MEMBER ROESSLER: I think so.

CHAIRMAN MELIUS: Yes, yes, and do that. And I'll really leave it up to the Work Group. At least, personally, what I would say is just decide whether you want to or not pursue Dr. Mauro's proposal or task him with -- but I'm a little bit -- you'll have it, but I would also just add that I think we've had problems before with that kind of a task.

If we're going to be bounding,

that's something that, frankly, that NIOSH should be doing, not our contractor to do that and, I think, as it was proposed.

So, I would leave it more for something, you know, maybe John described something, it's something the Work Group and NIOSH can talk about.

I'm not -- as I said, I have problems with it, but I was hearing it very quickly and so forth and I'm not even sure if it's necessary, but that's really up to the Work Group to decide and so forth.

And then if it did, obviously it would delay things and I personally have concerns about that also. I'm not sure of that, but I'll really leave it up to you.

Bob, and then Josie.

MEMBER PRESLEY: You don't hear me talk a whole lot, but is it too much to ask -- we've got a Work Group that's split. We've got a Board that's got some questions. John came up with some very good thoughts. NIOSH

has got some good thoughts.

Is it too much to ask that NIOSH and SC&A get together and see if they can iron out some of these problems as experts and then come back to the Working Group with a proposal?

CHAIRMAN MELIUS: That's a possibility. I think we want to do it under the Work Group's --

MEMBER PRESLEY: Auspice.

CHAIRMAN MELIUS: -- auspices. I'm just not even sure the Work Group wants to do it.

And if we -- this is not something you can do overnight, I don't think. And so we're talking about doing this, put kind of an effort, then we're saying we're going to put this off for dealing with this.

If that's what's necessary for radon, then I think we're talking about months. And, really, I think the Work Group is most familiar with it and I'd almost rather

see the technical discussion take place with the Work Group.

Josie, you were --

MEMBER BEACH: I think I'll just get with Gen on -- I was hoping that we could come up with a timeline on the documents also, but I'll just speak with Gen offline.

CHAIRMAN MELIUS: Oh, okay. Yes, Gen and then Jim and then Paul.

MEMBER ROESSLER: As far as the timeline on the documents, that's ready to go.

MEMBER BEACH: Is it?

MEMBER ROESSLER: Yes. I mean, almost ready to go. I can get that out right away, and I can preface it with a little guideline as to read this one first, and then if you need more information.

CHAIRMAN MELIUS: Yes.

MEMBER ROESSLER: With regard to putting this altogether, I kind of don't like this idea of a two-step process. It seems like the Work Group almost has to meet two

times to tell SC&A and NIOSH what to do and then get together and make a decision.

Is that what was being suggested?

CHAIRMAN MELIUS: Well, I mean, do you want to entertain that suggestion, I guess, is --

MEMBER ROESSLER: Oh, no, no. I don't think we should.

CHAIRMAN MELIUS: Okay.

MEMBER ROESSLER: I was going to suggest, if we follow through on Bob's idea that SC&A and NIOSH get together and consider this new idea, isn't that a technical meeting and the Work Group can listen in? And after that, then we have a Work Group meeting.

CHAIRMAN MELIUS: That's fine. However you want to do it is fine with me. I just -- Paul. Paul has a better idea.

MEMBER ZIEMER: Not a better idea. But in the SC&A report, they indicated they didn't have a position on the tunnels -- or in the report, the written report. Today, we

heard that they do have a position.

My suggestion is SC&A, if you now have a position, tell the group what it is. I'm not asking you to do -- not now, John. Not now.

But if SC&A has an official position on the tunnels, then that should be in writing; should it not? And that -- not that they are suggesting a methodology necessarily. Although, that might be part of it or an approach.

But it was just the way I understood what John was saying, we didn't have a position on the tunnels. Now, we do and sort of here it is. And then maybe NIOSH is in a position to respond to that.

That's just an idea.

CHAIRMAN MELIUS: Okay. Jim Lockey.

MEMBER LOCKEY: (Speaking off mic.)

MR. KATZ: Sorry, Jim. Can you speak into the mic, please?

MEMBER LOCKEY: (Speaking off mic.)

MR. KATZ: The mic's not on.

MEMBER LOCKEY: -- formally join our Work Group because, you know, he's the expert in this area. And I can rely on his expertise in relationship to what SC&A and NIOSH may be proposing in relationship to the tunnels.

CHAIRMAN MELIUS: Are you ready and willing?

MEMBER FIELD: I defer to the Chair.

(Laughter.)

MEMBER ROESSLER: I had thought of suggesting that earlier and thought that it might be perceived as a way of breaking the vote.

But I think since Dr. Lockey mentioned it, I've known Bill for a long time. He's a very good scientist. And I think he would make the best scientific decisions. And I don't think it would be moving in the

direction -- I mean it would probably break the tie, but I think it would be based on the -- a very objective evaluation.

CHAIRMAN MELIUS: He'll probably abstain.

(Laughter.)

CHAIRMAN MELIUS: I also don't think we should put too much, you know, emphasis on, you know, a three-two versus a two-two. I mean, it's really getting the views out and I think that -- that's not -- shouldn't be a consideration.

It's more you're willing to put the time in at least for that one conference call and --

MEMBER FIELD: Yes.

CHAIRMAN MELIUS: Okay. Thank you. Consider that done and so forth.

Anybody else?

MEMBER BEACH: I've got to say one more thing. Is that on -- I honestly think that we should go with the documents in hand

without having SC&A present us another position on radon. That's just my opinion.

And I think that there's enough been put out to give the Board food for thought without adding more to it.

We went from a model to the -- to the tunnel, the conveyor tunnel, and now I just don't think we need to have another process put in. That's just my opinion.

CHAIRMAN MELIUS: Well, I think I'd leave that really to the Work Group to decide what -- again, I think SC&A provides technical input. They don't vote on something and like what you -- at least what I always consider is not what -- not read their summary or their bottom line. I read what the reasoning is and the information. So, to the extent that's helpful, but it's really for the Work Group to decide.

Okay. And, again, if you are -- anybody on the Board who's not on that Work Group who has questions as they read documents

and so forth, I'd sort of encourage you to reach out and -- so, make sure that by the time we're ready to deal with this again, that we are fully informed and we're not -- we're not coming in with a list of another ten or 20 things that need to be done.

Maybe that will be it. Maybe that will be the way people feel. But if it can be settled between now and the January 12th call, all to the better.

We have another Linde petition. 154. Now, this Evaluation Report has just been presented, very recently published, and SC&A has not looked at it.

The Work Group has not reviewed it; is that correct?

Have you discussed this at all, Gen, this report at the Work Group level?

MEMBER ROESSLER: No.

CHAIRMAN MELIUS: Okay. Henry.

MEMBER ANDERSON: And I would move we send it to the Committee.

(Laughter.)

MEMBER ROESSLER: Thanks, Henry.

MEMBER ANDERSON: Well, that's usually what the SC&A review would be unless it's --

CHAIRMAN MELIUS: I leave it to the -- actually, I should let Wanda -- I think she wants to talk, too. But looking at it, a lot of the issues have been covered, I think. I can't quite tell.

And I think we have things called focused reviews and maybe that's in order, maybe it's not, but I think, you know, certainly the Work Group might want to look it over and decide what they need information on, does it need a complete review and is a more focused review more in order, but however you want to do it. I mean, I think it's --

MEMBER ROESSLER: What would you expect would be the timeline on it?

CHAIRMAN MELIUS: You tell us.

MEMBER ROESSLER: Well, not by --

not by the January teleconference.

CHAIRMAN MELIUS: No, no. No, I don't think that's feasible or necessarily appropriate. If you're going to review it, it's going to take time. But then, again, I don't -- it may or may not be. I'm not --

MEMBER ROESSLER: Why don't we --

CHAIRMAN MELIUS: It's a complicated site. And then --

MEMBER ROESSLER: Why don't we have the Work Group discuss what we think we can do when we're on our teleconference.

CHAIRMAN MELIUS: Yes.

MEMBER ROESSLER: And then we'll report in January.

CHAIRMAN MELIUS: Okay. Good.

Is that agreeable to everybody?

Wanda, you had your --

MEMBER MUNN: Yes, sure.

CHAIRMAN MELIUS: Okay.

MEMBER MUNN: Why not?

CHAIRMAN MELIUS: Another ringing

endorsement.

MEMBER MUNN: Go right ahead. Whatever you say.

(Laughter.)

CHAIRMAN MELIUS: Okay. We have about a few minutes before our discussions on Hangar 481, but I believe -- is Michele Ortiz here from Senator Udall's office?

Not yet. Okay. I saw her leave earlier. I don't know if she's coming back. She wanted to make some comments on a number of sites.

MEMBER BEACH: Jim?

CHAIRMAN MELIUS: Yes.

MEMBER BEACH: I have another on Simonds Saw.

Is it appropriate to discuss tasking of the ER report to SC&A? We kind of talked about it yesterday for this -- for the later period. We voted on the early period.

CHAIRMAN MELIUS: You mean for the residual period?

MEMBER BEACH: Yes.

CHAIRMAN MELIUS: Yes. Okay. Michele is here. Why don't we take that up in our Work Group session?

MEMBER BEACH: Okay.

CHAIRMAN MELIUS: Actually, let me make a suggestion for you all to think about. Other than Linde and maybe a few other sites, I guess recently with Dow we spent time, but we've not talked in general about the residual periods. And we've tended not to follow up on them when we approve an SEC.

And I think with our surrogate data criteria there's some issues that have come up with those, and I think it may be worthwhile having -- at least considering having a general discussion on the residual period, because I'm not sure it's the most efficient way is to have SC&A review each one or Work Group follow up on each one.

If we had a sort of better understanding how NIOSH was approaching them

in general at sites and where there might be issues with that, I think it might be helpful in terms of deciding when to, you know, review those in more detail or not.

I think, I mean, Josie and I talked yesterday. Certainly the -- some of the pictures that at least we saw of that facility and the residual uranium up to the present time at least in small quantities throughout the facility, it raises some issues.

Now, it may very well have been taken into account in the Evaluation Report and NIOSH's follow-up, but I think we tend not to necessarily review those in detail. So, again, I don't think it's always necessary.

I think the other issue that, frankly, comes up with these, is we've tended to focus on a -- when we grant an SEC, we don't do a very detailed review on the NIOSH proposal for handling some of the other exposures at the site.

I don't have particular problems with them, but again it's sort of for the people with the non-SEC cancers that, you know, it helps them be able to do it.

And I think we really just wanted -- we focus on for the SEC, the exposure that, you know, leads to the SEC and so forth.

And so, sometimes that method carries over into the residual period. So, I think it would be helpful for NIOSH to sort of present how they're approaching these and then let us think how we could do that.

And so one of the meetings coming up -- but before I commit more time or anything, let the people think about it and see what you think.

Michele, you've got your thoughts together?

Okay. I'm sorry. We were running a little ahead of time. So, we were -- I didn't mean to put you on the spot or drag you from your --

MS. ORTIZ: That's fine. I'm ready to go.

CHAIRMAN MELIUS: Okay. This is Michele Ortiz from Senator Udall's office who is someone who has worked on this program for quite some time. You've been very helpful and very interested. So, go ahead.

MS. ORTIZ: Thank you so much, Dr. Melius and member of the Advisory Board, for allowing me to read a statement into the record.

My name is Michele Jacquez-Ortiz, and I am speaking today as a representative of United States Senator Tom Udall.

As some of you may know, Senator Udall has a long history with this program. While serving as a member of the United States House of Representatives, Tom Udall, along with his New Mexico colleague Senator Jeff Bingaman, hosted the first public hearings in New Mexico on this issue and worked to ensure that his constituents would be covered as part

of the Energy Employees Occupational Illness Program Act.

Senator Udall and his staff have spent years since the program's inception, trying to realize justice for these claimants.

First, Senator Udall would like to express his gratitude to the Board for its decision to host this week's meeting here in New Mexico so that local claimants have an opportunity to be here in person and share public comment.

There are three specific SECs that affect New Mexico claimants that Senator Udall would like to see addressed.

First, yesterday you received a Work Group report on the SEC petition filed by [Identifying information redacted]. [Identifying information redacted] post-1975 LANL SEC petition is of particular interest to the Senator because it includes many of the same issues raised in [Identifying information redacted]'s LANL pre-1975 SEC petition, but

obviously has the potential to help a larger number of deserving workers.

The Senator felt it was important to present a statement to the Advisory Board to stress his strong support of an SEC for the proposed class of LANL workers in whole or in part.

Second, the Senator would like to express his support for the Kirtland Air Force Base Hangar 481 SEC petition that you will hear about next.

You will be hearing the message from Congressman Martin Heinrich in a few minutes, but Senator Udall joins Congressman Heinrich in expressing support for the Kirtland petition on behalf of the Senator's Albuquerque constituents.

Third, Senator Udall is closely watching the Sandia National Laboratory SEC petition that we understand is on hold awaiting completion of the NIOSH Evaluation Report. It's this latter issue that the

Senator would like to flag as a concern.

As you know, the law states that NIOSH has 180 days in which to issue an Evaluation Report after an SEC petition is filed.

Although the SEC for Sandia National Lab qualified well past 180 days ago, NIOSH still has not issued its Evaluation Report.

NIOSH has also missed this deadline with other SEC petitions, including LANL's SEC-00109, the [Identifying information redacted] petition, which was about 60 days late.

In fact, a number of SEC petitions have been dragging on for several years. Namely, Savannah River, Fernald, Mound, Pantex and others with which the Board is certainly very familiar. At least a couple of these have been lingering for over five years.

The Senator would strongly encourage the Advisory Board to closely

examine the issue of deadlines and timelines.

The Board should consider the possibility of developing a policy that provides for reasonable timelines which would work to ensure that petitioner's right to a timely evaluation of their SEC is respected.

Several of these petitions, including LANL's petition, have been unreasonably drawn out to the point that the petitioner's right to a timely evaluation has been compromised.

That's certainly not what Congress intended, and Congress is relying on the Advisory Board to honor the spirit of the law.

Senator Udall would like to respectfully request that the Advisory Board consider developing reasonable and objective timelines that are standardized for all of the stakeholders involved in the SEC process.

This would better prepare stakeholders and, most importantly, SEC petitioners so that they know what to expect

during the process.

It was not the intent of Congress for NIOSH to be allowed to keep re-approaching the Board with a multitude of creative explanations and justifications for why an SEC petition is not necessary.

At a point, the discussion must end and a decision reached based on all the relevant facts presented by the parties involved.

This is what Congress intended. And it's not fair for petitioners to face seemingly arbitrary sets of circumstances and timelines to complete this process.

Senator Udall would also like to flag the issue of surrogate and substitute data.

There have been many concerns shared with him about NIOSH's increasingly frequent use of surrogate and substitute data and how appropriate these data points are for this program.

Congress placed within the Advisory Board's purview the tough job of evaluating the scientific validity of such dose-reconstruction practices and methodologies.

The Senator urges the Board to carefully examine this issue keeping in mind the spirit of the law and to ask, does the use of surrogate and substitute data favor individual dose reconstruction over SEC approval. How objective or subjective is surrogate and substitute data? To what extent is surrogate and substitute data a claimant-friendly evaluation tool?

NIOSH can provide the most creative, compelling justifications for their use of substitute and surrogate data in dose reconstruction. However, it's the Advisory Board's ultimate responsibility to evaluate it and decide whether or not it passes the smell test for each of you.

Senator Udall realizes the

difficult task the Advisory Board has in considering the complex issues associated with this program.

He understands the hard work and long hours each of you commit as members of this important Board, and he thanks you for your service, for your thoughtful consideration of these issues that he's raised, and of course for allowing time on the agenda for his statement. Thank you.

CHAIRMAN MELIUS: Thank you.

Okay. We'll now move on to the 481 presentation. I'll remind the Board that this was initially presented several meetings ago. Not too long ago, but in the past.

At that time, the petitioners had just received the report and requested more time so they could gather more information. They had submitted or were about to submit a Freedom of Information request for additional information.

So, that was provided to them and

so we then -- we postponed the -- so, the re-presentation and further discussion until we -- until they had had time and Ted and others have been in contact with them.

So, that's why we're doing it at this meeting. And since we're out in Santa Fe, it was -- thought it was more convenient also.

So, Sam, go ahead.

DR. GLOVER: Thank you very much, Dr. Melius.

I realize it's a long presentation because it was recommended to be denial. I want to make sure we've covered all the facts.

So, I will go through these fairly quickly. These are slides we have seen before. So, this is for Hangar 481.

Site history. Hangar 481 is located at Kirtland Air Force Base in Albuquerque, New Mexico. Ross Aviation, with operations based at Hangar 481 was under contractual agreement with the DOE to provide

air transport of personnel and equipment associated with DOE operations at the Sandia National Laboratory in Albuquerque. And also facilities such as Los Alamos, they certainly transported other materials.

Ross Aviation maintained air transport services for government-owned aircraft at government-owned facilities which included Kirtland Air Force Base, Las Vegas, Tonopah, Los Alamos and Desert Rock, Nevada.

Transported equipment including packages containing radioactive materials associated with the atomic bombs program.

This is a diagram of Kirtland Air Force Base. Let's see where we -- I had a picture of Hangar 481. I don't think it came through very well. I had it circled on the original, but it is in the -- it's shown a little bit better in the list. This is an updated picture.

Anyway, February 27, 2009, 83.13 petition was received. September 8, 2009,

petition qualified for evaluation. December 18th, 2009, Evaluation Report was issued.

In February 2010, Evaluation Report presented at the Advisory Board meeting. Delay was requested by the petitioner, as Dr. Melius said, until the Freedom of Information Act material could be provided.

In July 2010, the FOIA was completed by both parties, both Department of Energy and NIOSH.

On September 23rd, 2010, a revised Evaluation Report was issued with an updated photo of Hangar 481.

The petitioner concerns were lack of personnel monitoring for certain individuals who were employed at Hangar 481; a deceased, former Ross Aviation employee at the Hangar 481 did not wear dose monitoring badges, and to the best of his knowledge, there was no monitoring of any kind at Hangar 481 or adjacent to there; and also shipments

of substances and items were delivered to the hangar in guarded shipments from Sandia National Laboratory and loaded into planes at Hangar 481 for further delivery by personnel wearing badges.

Submitted a statement from another Hangar 481 employee who said, I recall that pilots, flight engineers and flight mechanics who were present at the time of loading on the ramps would be wearing radiation dose badges. I was not required to wear radiation badges during times that I assisted in loading cargo into the planes or while cleaning the planes.

Evaluated employee, name redacted, but this person would have been working in the offices in the hangar building, and, on occasion, when the cargo would have been loaded into the planes parked on the ramp that was located near to Ross Aviation hangar.

So, the qualification summary, based on Hangar 481 research and data-capture efforts, this was a very new site when we

received this. Essentially, as soon as the site came in, we received a petition.

NIOSH determined that it had access to summary reports containing personnel monitoring data for Hangar 481 workers during the time period under evaluation, as well as area monitoring, radiological surveys for radioactive material shipments by planes based at Hangar 481.

NIOSH has identified a lack of individual dosimetry results for the evaluated period so that we have summary results, but not necessarily the individual results.

And NIOSH found support for the petition basis regarding lost or otherwise unavailable personnel monitoring data.

So, the petitioner proposed the Class, all employees who worked at Hangar 481, Kirtland Air Force Base from March 1, 1989, through February 29th, 1996, which is the covered period.

The petitioner-proposed Class was

evaluated by NIOSH. As I said, the evaluated Class represents the entire covered period as determined by the Department of Labor for this Department of Energy facility.

So, available sources of information. Conducted extensive searches of DOE databases and internet resources, ORAU Technical Information Bulletins, procedures and technical basis documents, Site Profiles, as well as, of course, Technical Information Bulletins, TIB-6.

We have 194 documents in the NIOSH research database, case files in the NIOSH OCAS tracking system, summaries of personnel radiation exposure during the covered period by the Nuclear Regulatory Commission, and also the DOE Occupational Radiation Exposure Report for 1996.

NIOSH also reviewed a DOE document that provided part of the basis for exempting Ross Aviation for performing worker internal exposure monitoring for Hangar 481 activities.

We reviewed documentation provided by the petitioner.

We interviewed seven individuals. Some of them more than once. Two current or former DOE Albuquerque employees, two individuals with NNSA, three former Ross Aviation employees, including the former director of safety and security and the former general manager and personnel director.

When I put these slides together, we had one claim. We now have two. So, a second claim was received since I put these in.

So, dose reconstruction completed, zero. As you can see, it's a very short slide.

So, activities at Hangar 481. Radioactive materials were transported in sealed containers in accordance with DOT requirements.

From former Ross employee accounts, radioactive shipments, loading

activities took place at specific loading areas called hot pads that were located at least 6,000 feet from Hangar 481. Hot pads are not part of the facility definition. Cleaning and servicing of unloaded aircraft took place in Hangar 481.

Based on Ross Aviation shipment records, radioactive material shipments predominantly consist of tritium, depleted uranium and mixed fission products.

During the majority of the covered period at the site, aircraft nondestructive testing was performed in Hangar 481 via x-ray analysis. This work was documented as being performed for short durations at night during off-shift hours. That was confirmed in interviews.

Health Protection Division appraisal document dated April 1994 states that the x-ray operations at Hangar 481 had been curtailed.

So, information gained through the

personal interviews of the former Ross Aviation safety director sometimes indicated x-ray testing was outsourced around 1992 or `93, but he was unsure of the exact date.

After that time, x-ray testing was no longer performed at Hangar 481, but they were taken to Arizona for testing it off-site.

Obviously, only operations performed at the facility are addressed in this evaluation.

On December 2nd, 1992, Occupational Safety and Health inspection report stated, Ross Aviation does not handle, store or use radioactive materials in the Albuquerque facilities. There is an x-ray machine used in one building. Most people wear external dosimetry support other Ross Aviation activities including involving loading and unloading aircraft, as well as flight operations.

December 2nd, 1992 report also states they used a Baltograph IV x-ray unit

and control console. This unit is operated for nondestructive testing approximately ten minutes per month. There are only two qualified operators who are the only current radiological workers at Ross Aviation.

Inspection records, operator training records and device records were inspected and no discrepancies noted.

Ross external dosimetry program is contracted through Eberline as a DOE laboratory-accredited program. The highest recorded exposure for 1999 was approximately 45 millirem. No discrepancies were identified in the dosimetry records from Eberline to Ross.

Furthermore, on August 7th, 1997, the Transportation Safety Division of the DOE's Albuquerque Operations Office issued the technical basis for radioactive material intake potential regarding activities performed by Ross Aviation at Hangar 481.

They concluded based on the TSD

Special Agent tasks, no contact with package contents, operational history with confirmatory surveys showing no package breach or leakage and the DOT-compliant shipping packages and programs, the document concluded there was no credible path for an intake of radioactive materials during normal operations.

Because Kirtland Air Force Base and Hangar 481 are directly adjacent to the Sandia National Laboratory, it is conceivable internal dose to individuals working at Hangar 481 could have occurred from ambient environmental sources at Sandia-Albuquerque moving across the site boundary.

Based on available information on the radiological program and potential for internal exposure sources, NIOSH concludes that internal radiological exposures to Ross Aviation employees resulting from services rendered for the DOE at Hangar 481 are unlikely to have occurred.

Radioactive materials handled by workers at Hangar 481 were in sealed DOT-compliant containers monitored in accordance with DOT regulations that verify radiation contamination on package exteriors. Results of available radiological surveys performed on the packages and in the transport aircraft support this.

So, we did review documents from NTS, I looked at documents from Sandia, so that they do support that they were surveyed and it did support this premise.

External radiological exposures to employees at Hangar 481 occurred as a result of handling packages containing radioactive materials. Those radioactive materials emit photons and particle radiation, gamma and beta.

However, since the materials were in a sealed package, photon radiation would be the dominant external source.

Nondestructive testing was

performed at Hangar 481. And this work was details being performed at night for approximately ten minutes per month. And those individuals were badged.

In a personal interview, a former Ross Aviation safety director stated the names of two individuals involved in x-ray activities at Hangar 481. The names provided are listed in the personnel monitoring summary data available to NIOSH.

Therefore, NIOSH concludes that the personal dose from these operations would be accounted for in the personnel exposure summary data available to NIOSH.

According to available radioactive material shipping documents associated with Hangar 481, the principal photon-emitting radioactive materials were predominantly depleted uranium and mixed fission products.

Photon exposure from depleted uranium are primarily from thorium-234 daughter of uranium-238.

Photon exposures were also possible from radioactive shipments containing mixed fission products. Shipping documents indicate that such shipments consist of samples taken from the weapons test tunnels.

Nondestructive x-ray testing was performed. So, therefore, of course, serves as potential external source of exposure. This work was performed during the evening shifts by trained radiological workers.

Bremsstrahlung effects could also be considered as a photon source, but are accounted for in the exposure summary data.

Due to the fact that the radioactive materials were transported in sealed DOT-compliant containers, beta exposure was not likely.

However, as recorded in the personnel dosimetry data, some shallow exposures to either beta or non-penetrating photon did occur. So, we'll account for those in the exposure assessments.

Neutron generators were frequently transported by aircraft in Hangar 481. These devices emit neutron radiation only when powered and energized.

Since these devices were only being transported, neutron exposure was not feasible.

This statement is backed up by neutron monitoring data which indicated no positive neutron doses were ever recorded for any individual at Hangar 481. Based on this information, neutron exposure was not considered as a factor.

Incidents. The petitioner did not file a claim on the basis of exposure incidents and did not indicate knowledge of any having occurred at Hangar 481.

The former director of Safety and Security at Ross stated there were no incidents involved radioactive material shipments at Ross that he was aware of.

A NIOSH review of all Ross

Aviation/Hangar 481 documents contained in the SRDB has found no information regarding any radiological incidents.

Therefore, incidents were not considered -- were not considered a factor for this site. They were obviously considered, but not considered a factor.

External dosimetry monitoring practices. Interviews indicated that those with the highest exposure potential were monitored. Mechanics, pilots, those involved with handling or securing packages.

Nondestructive x-ray testing on night shift was also a source of external dose, and they were badged.

TLDs were issued and exchanged quarterly with shallow and deep dose. In 1996, activities had ceased. So, no monitoring was required.

Area monitoring surveys for contamination, area monitoring focused on surveys for contamination areas where it was

possible for contamination to spread.

The available area monitoring data support that there was no spread of contamination.

These data also provide information about the program and plane conditions.

The annual summary data for Ross Aviation, you can see for the period from `89 to `96, you have about a little under a hundred being monitored. It dips down `92, `93. It was higher `89 and `90.

You see the highest of maximum doses is somewhere in the 70, 80, 90 dose. 90 millirem. Actually, that's the maximum individual shallow dose.

Maximum individual deep dose, 172 in 1994. You see the total person, you know, we're talking about 200 millirem for all the people who were monitored.

Eberline provided external badge services. Records of external dose for

individuals have not been obtained. Annual summaries of external dose are available and will be used to bound dose when individual records are not available.

NIOSH will use the highest recorded annual dose for all years during the covered period for all individuals. It's a deep dose of 172 millirem per year, and a shallow dose of 89 millirem per year, including for the partial year 1996.

This measured dose would include ambient dose. No additional environmental external dose would be assigned.

The dose estimate will be used to evaluate the partial year 1996 even though the activity had ended and no exposure to radioactive material was expected.

Dose would be bounded by assuming the medical dose, annual x-ray examinations using standard NIOSH methods, TIB-6.

Internal dose. Based on the findings provided in the Evaluation Report,

NIOSH has concluded there is no potential for internal dose from the facility.

Proximity to Sandia National Laboratory suggests that ambient internal dose be evaluated using the information in Sandia Site Profile for environmental.

So, this is just a brief sample dose reconstruction for a nondestructive testing technician who worked the entire time frame. Again, this is just a hypothetical case and claimant-favorable assumptions using the assumptions that we've provided: hundred percent anterior to posterior, the claimant-favorable energy distribution on the photons -- let's see.

So, this is what we came up with: External dose of 1.8 rem. Skin BCC would have about 2.7 because of the shallow dose. Probability of Causation for the lung cancer would be ten percent. Three percent for prostate. And the BCC was 14 percent. And if you had all three cancers, the total PoC for

all three would be about 26 percent.

So, NIOSH evaluated the petition using the guidelines of 83.13 and submits its findings that was issued on December 18th, 2009.

Of course the two-prong test, is it feasible to estimate the level of dose to individuals of the Class with sufficient accuracy?

NIOSH found that the available monitoring records, process descriptions and source-term data are adequate to complete dose reconstructions with sufficient accuracy for the evaluated Class of employees. Therefore, health endangerment is not required.

This is the summary of our feasibility. For internal dose reconstruction, only environmental. External, gamma/photon, beta. Neutron is not applicable. And occupational-medical x-rays all as feasible.

Thank you.

CHAIRMAN MELIUS: Okay. Board Members have questions for Sam?

Don't run away, Sam.

Paul.

MEMBER ZIEMER: Sam, the medical x-rays were actually done in Hangar 481?

DR. GLOVER: As I reread that, that sort of flies in the face of what we just said for science.

MEMBER ZIEMER: That was the reason for my question.

DR. GLOVER: Yes, I would have to discuss that with my -- but that was when we wrote that --

MEMBER ZIEMER: So --

DR. GLOVER: Unfortunately, I did use -- presented essentially the same what I had before. This is what the ER said.

MEMBER ZIEMER: It wouldn't change your conclusion.

DR. GLOVER: No.

MEMBER ZIEMER: I was just

questioning whether you would actually include medical x-ray in this case.

DR. GLOVER: We certainly don't have documentation that -- we have -- we didn't go out of our way to evaluate that, but, yes.

CHAIRMAN MELIUS: Okay. Other Board Members with -- yeah, Bob.

MEMBER PRESLEY: Do you have records showing the dose of medical x-rays?

DR. GLOVER: No, I think what his -- regarding the medical x-rays that he was talking about, that Paul was mentioning, are the x-rays from the x-ray unit that was -- it was used for nondestructive testing on the planes.

MEMBER PRESLEY: That's exactly what I mean. It was not used for medical x-rays. It was used for nondestructive testing --

MR. KATZ: Bob, please use the microphone.

MEMBER PRESLEY: What?

MR. KATZ: Please use the microphone when you speak, because it can't be picked up by the transcription.

MEMBER PRESLEY: Because it was used for nondestructive testing on certain weld areas on that airplane and other airplanes that Ross used.

DR. GLOVER: Yes, sir. I think Paul caught me on a thing that -- a new change in our program about x-rays being conducted on-site. And I said we would use TIB-6.

In the event that an x-ray was conducted at a different facility outside of the covered facility, I would have to talk to my colleague, Jim Neton, and verify, but I don't believe that would be a covered exposure.

So, my use of TIB-6 is what --

MEMBER ZIEMER: Right. And it would be surprising for them to use the radiographs for -- I wasn't even thinking

about that. I just wondered if they had a medical x-ray on the site.

CHAIRMAN MELIUS: Yes, David.

MEMBER RICHARDSON: Thank you. It was a nice presentation. It's a nice write-up of the report. I just have two questions for clarification.

One is I was wondering why the shallow dose exceeds the deep dose here.

MEMBER MUNN: Exceeds what? I didn't hear the question.

DR. GLOVER: In an exposure assessment, that deep dose is going to be attenuated. So, for BCC you get a higher -- based on our assumptions where we use the organ factor, the actual depth within -- how much dose is actually received by the organ.

MEMBER RICHARDSON: So, the values of these tables you take the maximum value.

DR. GLOVER: So, that's your exposure. But as it penetrates the body, you know, it would be attenuated and you would see

-- you may not get, you know, the rem -- here's the entrance dose. But as you get into different parts of your organ, you're actually -- that organ is going to see a different dose.

MEMBER RICHARDSON: And the other one was you described - I mean, it made sense to me you were describing that you confirmed that there was no neutron dose based on dosimetry information.

I was wondering, I mean, they weren't routinely badging people for neutrons. So, what was the basis for that?

DR. GLOVER: We reported in the base year that there was a TLD exchange. I have to -- it's been a while. So, I re-reviewed that part.

There was no credible real source as a neutron. The neutron generators weren't on.

MEMBER RICHARDSON: Yes, right.

DR. GLOVER: I have to -- let's

see. We cite that the dosimetry information didn't support -- I'd have to review that again, but I don't think there's any credible mechanism for neutron dose.

CHAIRMAN MELIUS: Okay. Anybody else with Board Members?

If not, we'd like to hear from the petitioners that are here. Welcome. Want to step up to the mic and however you want to -- or to the lectern. Either one is fine.

MR. ARMIJO: It will take me a few minutes to get my things out, if that's all right. I don't have an actual PowerPoint presentation. However, I have some talking points and some things that I think we need to bring to the attention of this Board.

CHAIRMAN MELIUS: Okay. Go ahead.

MR. ARMIJO: My name is Robert Armijo. I'm an attorney here in the State of New Mexico.

Standing beside me is my client [Identifying information redacted] whose

[Identifying information redacted] worked for nine years at Ross Aviation at the Hangar 481 building. He is the petitioner for the SEC petition in this case.

Also standing beside me is a former pilot with Ross Aviation, [Identifying information redacted]. She has provided us with a great deal of information that I think would be most pertinent to the considerations of this Board.

We very much appreciate this Board being here in New Mexico and giving us an opportunity to present our information to you.

We're not here really to attack the science of the dose reconstruction. Rather, we're here to attack some of the underlying data that has been relied upon for the development of the scientific data, and we believe that the evidence that we have located would demonstrate that there are some flaws.

With all due respect and not to disparage anyone on this Commission, but there

are some flaws in the reasoning that have cropped in here.

We would wholeheartedly support the position stated by the congressional staff as far as the use of secondary or alternative means of evidence.

And one of the points in this case that I'll get to in just a bit, is that it appears that the actual data of what these TLD badges showed has never come to light.

One of the unsworn interviews conducted by Mr. Glover, who has conducted a good investigation in this case, reports that the Ross Aviation or personnel who came later, shredded information concerning the dose data.

So, although we might have summaries, unaudited, unsworn secondary evidence, that direct evidence is no longer available.

Also, Mr. Glover learned and pointed out to this Board that the actual TLD data that was supposed to be maintained by

Eberline, has never been produced in spite of the length of time that this petition has been pending.

And because of that failure to produce that information, Mr. Glover and those that conducted the scientific evaluation had to use unaudited, unsworn, secondary evidence instead of looking at the best evidence of whatever that data may have been.

At this point, it appears that for the 481 hangar, we simply don't have -- we just don't have the data information that may have existed from those that were badged.

Personnel in the hangar were not badged. Flight personnel were badged. The lady standing beside me who was a pilot, was badged, and she has prepared an affidavit stating that she was never told what those badges showed.

Now, we have the secondary, unsworn, unaudited information suggesting everything is fine. But as of today, we do

not have those TLD badges to know what they actually showed.

[Identifying information redacted], the petitioner, contends that his SEC petition should be approved because it is not feasible to estimate with sufficient accuracy radiation doses for employees of Ross Aviation, including his late wife [Identifying information redacted] who worked at its facilities, including Hangar 481.

[Identifying information redacted] contends that NIOSH must determine that there is a reasonable likelihood that radiation doses of Ross Aviation personnel who fit the definition of the Class in this case, may have endangered the health of members of the Class.

[Identifying information redacted] recognizes that NIOSH dose reconstructions under the EEOICPA, that's the Energy Employees Occupational Illness Compensation Program Act, are performed using methods promulgated under the federal regulations, specifically 42 CFR

Part 82, and the detailed implementation guidelines that are available online.

However, he contends that there is not sufficient data available to allow NIOSH to perform dose reconstructions under those provisions.

Now, the regulations 42 CFR Section 83.13(c)(1) states that radiation doses can be estimated with sufficient accuracy if NIOSH has established that it has access to sufficient information to estimate the maximum radiation dose for every type of cancer for which radiation doses are constructed that should have been incurred in plausible circumstances by any member of the Class, or if NIOSH has established that it has access to sufficient information to estimate the radiation doses of members of the Class more precisely than an estimate of the maximum radiation dose. That's basically, as I understand it, what the law requires.

The flaw in this case is we don't

have the raw data. It is not available. It has not been produced. And we're using unaudited information which is not the best evidence. And that evidence is then being presented as a reason to deny the SEC Class certification.

[Identifying information redacted] bases his position on the following circumstances: number 1, Mr. Glover who has been very helpful to us as we have continued this matter -- and I might add if I can digress for a moment, right now this petition covers the period of 1989 through 1994.

Mr. Glover discovered the existence of contracts all the way back to 1970 that I'm holding in my hand here.

Interestingly, when Mr. Glover sent this information to the U.S. Department of Labor with the suggestion that the term of coverage for Ross Aviation's Hangar 481 facility be extended back to 1970, he was told that it wasn't his job to do that and that the

Labor Department wouldn't do that.

That's my job, as I've learned. And we are going to turn this information in to the Labor Department with the express hope that we will be able to extend this period from 1989 back to 1970.

But even without that, we would contend that this petition should be approved in the present manner because of the other circumstances I'm going to present.

Mr. Glover reported to me as early as late summer, that approximately 4,000 pages of additional documents in the possession of Sandia National Labs have been recently located and have yet to be analyzed.

Petitioner has requested these materials. We have requested them by a Freedom of Information request most recently submitted to NIOSH. And at this date, the information has not been analyzed by NIOSH. And, furthermore, has not been produced.

We don't like the idea of having

to continue to delay this process because we believe the petition should be granted, but there simply is more data that has not yet been brought to bear. And without that data, I don't see how the science can come to an adequate conclusion.

Number 2, petitioner has learned as more fully addressed in an affidavit -- now, this is an affidavit that we have from the former worker that I'll be talking about in just a moment.

It's not just unsworn telephone interview information. This is an affidavit from a former worker.

And one of the things that is going to be presented in that affidavit, and I would plan to give it to Mr. Glover, turn it in so that this can be evaluated appropriately and subjected to a litmus test of accuracy, is that the radioactive shipments from Sandia Labs were regularly delivered to Ross Aviation's Hangar 481 premises to be loaded

and stored on airplanes.

This is specifically contrary to the unsworn telephone information given to Mr. Glover that the radiation materials were instead loaded on the airplanes at these hot pad locations at some great distance from the hangar and away from other things.

In fact, the hot pads were used for loading of Class C and Class A explosives, as they should have been, but the affidavit indicates that the Class B radioactive materials were instead delivered to the hangar building just as was pointed out from one of the people that expressed where those loadings took place in our initial petition.

And that was the regular practice for the loading of these materials that came from Sandia National Labs, many times with guarded shipments, many times with personnel who were suited in delivering these containers to the Hangar 481 facility to be loaded.

So, if the premise upon which the

science is based is that the loadings and deliveries of these things took place at the hot pads, we would dispute that fact.

And that's a fundamental fact. It's mentioned in the report. And we would submit that that is something that needs to be looked at more deeply and subjected to a litmus test of accuracy rather than a telephone interview of a former worker.

Number 3, the petitioner has learned as more fully addressed in this affidavit, that radioactive shipments from Sandia National Labs were regularly delivered to Ross Aviation Hangar 481 in containers identified as AL-R8 containers.

Now, the documents we have discovered would suggest that these AL-R8 containers were discovered in approximately 1991 not to be adequate to shield the contents, and yet these containers were apparently, in the belief of [Identifying information redacted], regularly delivered.

And she has in her affidavit, indicated that she believes in looking at the photos of these, that they indeed were the containers that were used up to that time and continued to be used after that time.

So, I think there is a second serious flaw in the evidence that would need to be looked at.

One of the premises for this petition is that the materials were shielded in containers. Well, and we're not disputing that the shielding might have stopped the particles, the alpha and beta-type stuff, but apparently the gammas and other types of radiations were not adequately shielded and that these materials then would have been in containers.

And if there's assumption that the containers were protective, our position is that that would not be the case.

Now, I realize there may be secondary sources that a person can consult,

but it also comes back to the question that we don't have the actual badges.

The next point and the next reason we offer is that to date, NIOSH, and I've mentioned this before, has not been able to obtain primary source data of dosimetry readings, because the raw data collected by Eberline has yet to be produced. Yet to be produced.

About a year and a half this has been going on. Perhaps longer. It's yet to be produced, and all we have is summary data, secondary data.

So, I would submit that the -- it's not the science that we're challenging. It's the evidence. It's the data upon which that science is being applied.

Next, since radioactive material was regularly delivered to Hangar 481 site to be loaded on planes at that location and since containers holding such materials may have been inadequate to shield against leaks of

radiation, the methodology assigning ambient external dose data to Ross Aviation personnel, including [Identifying information redacted], cannot be viewed as sufficient to appropriately bound any potential internal dose for Hangar 481 Class as contemplated by Section 2.7.2.2 of the Evaluation Summary Report.

Basically as I understand it, the bounding is done by looking at generally Sandia National Labs located some distance away from Hangar 481, and figuring out what that ambient dosage would be, and then trying to apply that dosage of what a person at Hangar 481 might have been expected to receive.

Well, if the containers that were delivered to the Hangar, in fact, were delivered there, if those containers were, in fact, inadequate to provide appropriate shielding, then I would challenge the use of the ambient data from Sandia and would instead

urge that we should have the raw data, the actual badges of those people who were badged around that Hangar 481, as the basis to determine if you can truly bound the radiation of the people working at that location.

Next, additional personnel of Ross Aviation have been located having relevant data that undermines the reliability of the fundamental assumptions on which the Evaluation Report was based.

We have interviewed additional people. These are unsworn statements. However, one of the statements has indicated that these barrels at times, and it may have been nuclear waste, were actually stacked when she would arrive at work. And those barrels would be waiting there to be loaded on the planes.

Now, I'm not aware of any sweeps that were done of the Hangar building or the adjacent areas where these barrels may have been stacked. And, again, we've got to

subject that evidence to the litmus test of accuracy.

Another piece of information we have and the person that indicated this information to me, indicated he would be willing to be interviewed, and I would encourage him to be interviewed again to respect the accuracy of the information, was that he -- I won't use gender -- but that this person as a pilot, was rather cavalier in his beliefs as far as what radiation may be as far as being harmful. And on occasion, would leave his dose badge in his locker in Hangar 481.

And this individual reports that on one of the occasions that he left his dose badge in his locker inside Hangar 481 for the quarter of when it was supposed to be turned in, that he was told later that it was surprisingly high in its reading.

And his response was, well, I wasn't even wearing it and I left it in my

locker.

Now, that may or may not be accurate information, but I certainly think, and we have the information to provide an interview of that person to again determine the accuracy, that is another piece of information that needs to be evaluated before the science can be looked at.

So, we believe that there is indeed additional evidence that needs to be brought to bear. We believe that the evidence developed to date simply is not the core best evidence to use to suggest that this petition be denied.

And true enough there may be secondary sources of information, those may be very scientifically good, but they're not the best evidence. And in this instance, we would contend that this petition should not be denied.

The recommendation should not be for denial. If anything, it should be for

approval. And if it can't be approved, there is a wealth of additional information that has not been tapped that should be tapped quickly.

And on behalf of the Class, we would urge this petition be carried forward with additional investigations if it cannot be approved right now.

Now, I have in my possession the affidavit. I can deliver it to Mr. Glover today.

Attached to it are documents to support many of the things I've said which again can be reviewed to make sure that I'm not exaggerating or misstating anything.

I'm an attorney; I'm not a scientist. I don't claim to have the answers, but I do know that there are people that had cancer who worked at this location. And I do know that there were radioactive materials that this outfit processed through transportation, and this outfit had contracts that bring it within the scope of coverage

under the EEOICPA.

I stand ready for questions and ready to deliver the materials I have to Mr. Glover.

CHAIRMAN MELIUS: Okay. Thank you.

Paul, I believe, has some questions.

MEMBER ZIEMER: Yes, thank you very much for your presentation.

MR. ARMIJO: Yes.

MEMBER ZIEMER: I'm trying to understand a little more about the Eberline TLD data, and maybe either you or Sam can answer.

The dose summary that is in the report, what's the basis for that?

It sounded like we're saying or that the concern was that the original Eberline data is not available or what was the point?

DR. GLOVER: That is correct. Those are summary tables that were reported to

the Department of Energy or the NRC. And so, they summarized the total exposure at the facility. And what the highest dose was, we do not -- and that was the basis that we approved review of the Evaluation Report to be conducted was that the original data was not there.

So, we have summary information, but the actual records, the individual records are not present.

MEMBER ZIEMER: And Eberline does not have an archive of -- they're obviously not going to have the TLD badges. You don't save those like you would a film badge.

So, what are we looking for at Eberline?

DR. GLOVER: That would be the summary --

MEMBER ZIEMER: The readouts from the TLDs?

DR. GLOVER: We have had no luck in getting any additional records for the actual

individual personnel. That's why we're using the maximum at the site. That's why we've had to go to that, because we don't know who that -- the maximum person is.

CHAIRMAN MELIUS: But what do you mean by no luck? I guess I don't understand.

DR. GLOVER: I'm sorry.

CHAIRMAN MELIUS: What do you mean by no luck?

DR. GLOVER: Well, we haven't -- we have tried to find the original records. We have not had any success in getting the individual readings for these personnel.

CHAIRMAN MELIUS: So, Eberline says that they don't have them or are they not cooperating?

I guess I'm not -- I mean, if you don't --

DR. GLOVER: I just -- maybe Stu can recall.

CHAIRMAN MELIUS: I think we talked about this a little bit the last --

MR. HINNEFELD: I don't actually -- I don't recall ever asking Landauer, to be honest with you.

MEMBER ZIEMER: No, this is Eberline.

MR. HINNEFELD: Eberline. That's what I meant. Eberline.

MEMBER ZIEMER: Okay.

MR. HINNEFELD: Oh, Eberline. I don't recall ever asking Eberline, no, if they had them.

MEMBER ZIEMER: Okay.

MEMBER BEACH: Jim, can I add something?

If you look at Page 21 of 51 of the Evaluation Report, it says NIOSH is working with Landauer to obtain from Eberline the raw data represented in the summary reports.

So, that's why you remember Landauer.

CHAIRMAN MELIUS: Yes, okay. Okay.

Paul has some other --

MEMBER ZIEMER: Well, I was just trying to get a handle on that because there's some related things.

Was this a licensed facility or is this just a transportation thing where you don't need a license for transportation transfers like FedEx can handle radioactive shipments.

Was there a license and then inspections at this Ross Aviation -- or at this facility, this Hangar?

They were obviously submitting reports to NRC annually. That's where these numbers come from, as I understand it.

DR. GLOVER: Right. That is correct.

MEMBER ZIEMER: So, if they're doing that, they must be a licensee?

DR. GLOVER: I'd have to go back to the report, Paul.

MEMBER ZIEMER: Because what I'm

wondering is typically there would be, independent of this, annual inspections that -- the real dose of record, legally, is not what is at Eberline or Landauer.

The dose of record that the NRC recognizes is the number that is provided to the licensee. That's what the NRC uses.

So, I'm just trying to get a feel for what it is we need to look for here if this is a real issue and, you know, there's no reason to think the NRC thought that these were fictitious numbers, I gather.

I mean, the NRC or the -- yes, the NRC apparently has accepted these numbers as their dose of record, which has a certain legal foundation.

MEMBER POSTON: But, Paul, remember that during this period they were only required to submit the summary data. They were not required to submit the individual data.

MEMBER ZIEMER: Yes, that's why I

was asking you about inspections, because an inspector would typically look at the annual readings and they would have to match up with what was being submitted.

MEMBER POSTON: Didn't change until about 1994.

DR. GLOVER: As you saw, there were some reports about the inspections about how they looked at the Eberline data and compared it with what the summary was.

They didn't find any discrepancies between what Eberline had and the -- so, there were inspections. In some of those reports that I've listed there, we have some of that back and forth that they evaluated the records and didn't find any discrepancies.

MEMBER ZIEMER: Okay. See, I think that's important --

DR. GLOVER: Yes.

MEMBER ZIEMER: -- from a legal point of view. If the NRC has audited those numbers, I just simply make that point.

CHAIRMAN MELIUS: Okay. Brad.

MEMBER CLAWSON: Sam, I guess I'm looking for a little history of what these planes were for.

Are these the same planes that were supposed to be going to Pantex?

DR. GLOVER: These would be like going to NTS, taking the shot samples back and forth. That would be correct.

MEMBER CLAWSON: And also Pantex?

DR. GLOVER: Yes, they'd go to Pantex. I believe it was discussed at the Pantex. They'd also transport personnel to different facilities. That's correct.

MEMBER CLAWSON: Okay. Because of our interviews that we had here a couple weeks ago that the individual explained about traveling with -- I just wanted you to remember what he had told us about that and what they had to start doing.

I just --

DR. GLOVER: I would point out that

things that occur on an airplane aren't part of the covered facility. It's only while they're at Hangar 481 that that's a covered exposure. And we are including the badged pilots as part of this.

And so even though their exposure likely occurred off-site, we're including that within the --

MEMBER CLAWSON: So, this is kind of a traveling --

CHAIRMAN MELIUS: Yes, it's tricky. That's for sure.

DR. GLOVER: Yes.

CHAIRMAN MELIUS: Okay. We also have Miguel Negrete from Representative Heinrich's office who I believe is on the phone.

MR. NEGRETE: Yes.

CHAIRMAN MELIUS: Okay, Miguel. Go ahead and make some comments.

MR. NEGRETE: Well, my name is Miguel Negrete and I'm a constituent liaison

for Congressman Martin Heinrich. And the Congressman asked me just to make a brief statement on his behalf since I could not attend the event or -- and he is in Washington.

But on behalf of Congressman Heinrich, I just wanted to say I would like to take this opportunity to express my support for the Hangar 481 petition.

I feel that it is important that the Advisory Board take into consideration the information being presented and the stories that are being shared.

I'd also like to thank the Board for hosting this meeting here in New Mexico so that the affected claimants have an opportunity to personally interact and participate in the meeting.

I understand and recognize the hard work it takes the members of this Board to fully consider each petition presented. This is not an easy task but one I know you

take seriously.

I am hopeful for a positive outcome on behalf of the petitioners, and again I thank you for your time and consideration.

Martin Heinrich, member of Congress, First Congressional District of New Mexico.

CHAIRMAN MELIUS: Okay. Thank you very much.

MR. NEGRETE: You're welcome. Thank you.

CHAIRMAN MELIUS: Board Members have questions or comments?

You can sit down now. You don't need to stand there. Do others want to make comments? I'm sorry.

MR. ARMIJO: I believe that Ms. Torza might wish to make a comment.

CHAIRMAN MELIUS: Oh, yes, you're welcome to. I'm sorry. I didn't -

MS. GALLAGHER TORZA: Yes, I

wouldn't even really know where to begin. I have so many comments.

But one thing that just struck me that somebody mentioned, was the fact that the airplanes are not covered under the covered facility.

However, I have had cancer and a thyroid tumor removed just a couple of months ago, and so I'm in the process.

And Department of Labor stated to me after I sent all kinds of information to them in Seattle of what we actually did, you know, what Ross Aviation was all about.

We had a hangar for the Department of Energy. We had Department of Energy-owned aircraft that we devoted a hundred percent to the Department of Energy and transportation of weapons and weapon components, nuclear materials and personnel as well.

Why the airplanes would not be under that covered facility, what is the purpose of having a hangar, you know?

We had that hangar for DOE, and we had those airplanes for DOE, and we transported whatever they needed to wherever we needed to go.

So, I am concerned when I hear that the airplanes aren't part of the covered facility.

CHAIRMAN MELIUS: I believe that's a legal determination. I don't know if anybody can shed light on it that -- or wants to. Okay.

MS. GALLAGHER TORZA: And I guess it's in he process of Department of Labor.

MR. HINNEFELD: It's an outcome of the specific language in the statute. Specific language in the statute is to reconstruct the dose that occurred at the covered facility.

And the covered facilities are defined not as, you know, there are no mobile sources in the time that's covered.

CHAIRMAN MELIUS: Bob, then Brad.

MEMBER PRESLEY: As I remembered, probably 99 percent of the atoms moved by Ross Aviation were classified.

That meant that that stuff was brought on a special truck by special people to a special area, put on the planes, flown to their destination and were picked up by people, special people, special vehicles, taken wherever they needed to go.

We did not store that type of packages just anywhere overnight. And I don't -- I was never at Hangar 481, but you might be able to tell me if there was a secure storage site at that area.

MR. ARMIJO: Not to my knowledge.

MEMBER PRESLEY: Then that's -- go ahead.

CHAIRMAN MELIUS: Okay. Brad.

MEMBER CLAWSON: I understand that the -- I'm trying to really get my hands around this. Because to me, this had actually looked like an extension of the facility

because this was loaded.

And if it's not, then we really -- boy, we've screwed up looking at this because I really have -- I'm just really having a hard time getting my hands around it.

I understand that this Class is just for the Hangar, but that product and so forth was only in there for a little bit. And the rest of the time for this company, it was flying in the air.

And I understand what Stu's saying. I'm just really having a hard time getting my hands around that.

CHAIRMAN MELIUS: Wanda.

MEMBER MUNN: I was just going to comment that there were four planes minimum. Four planes indicated in the accounts that we have.

And the material that was indicated as being most common was tritium, depleted uranium and mixed fission products, all of which were in containers that were DOT-

approved.

It would be interesting to know the background of the information that the attorney just mentioned with respect to the 1991 findings on the container.

But this is a DOL issue, is it not, with respect to coverage of the facility and whether or not the planes -- is that not correct? It's DOL's purview?

CHAIRMAN MELIUS: Yes, it is.

So, our focus is on what is the covered facility and what is in the report and so forth.

Paul, you have comments or suggestions?

MEMBER ZIEMER: Well, my question was with relation to the AL-R8 containers.

Is this new information as far as NIOSH is concerned?

It seemed like there may have been a number of points that perhaps need additional look by NIOSH. I wasn't clear

whether this is new information to NIOSH or not.

DR. GLOVER: I don't think we ever tried to really look at, you know, his contention was that it didn't block all of the gamma, and we don't try to say that it does block all the external dosimetry, you know.

People did get -- we're assigning external dose. These weren't necessarily heavily shielded packages. We're just contending that --

MEMBER ZIEMER: You're not actually modeling from the containers or the transportation index values. You're using the personnel monitoring data.

So, in principal, if the monitoring data is reliable, then it doesn't matter what the adequacy of the shielding is as far as the DOT regs are concerned.

DR. GLOVER: Yes, sir.

MEMBER ZIEMER: Is that correct?

DR. GLOVER: Yes.

CHAIRMAN MELIUS: I mean, my sense is that the petitioners had brought some new information forward. It's not been evaluated yet. It needs to be evaluated and that it appears to contradict some of the information that NIOSH relied on in their Evaluation Report.

To what extent it will do so, you know, ultimately after review we don't know, but I think -- again, personally I think the petitioners deserve some review of that information given that.

And, really, NIOSH hasn't had time to and I don't think we should -- it's difficult for us here to try to tell how important it is or not.

So, my recommendation was that we refer back to NIOSH for some follow-up on this information and presentation at the next Board meeting.

MEMBER CLAWSON: I second that.

CHAIRMAN MELIUS: What?

MEMBER CLAWSON: I second that. I'm just looking at maybe if this was put together wrong, if we found more information, which we're going to have to find out like that you've said that goes back further and may have to reevaluate how this was worded, I guess.

CHAIRMAN MELIUS: It could. And there's some covered-period issues, but that's really up to DOL. And they have a process for doing that and we don't know the timing on that. And I don't think we can -- should necessarily wait or -- but I think we have some new information. Let's have NIOSH evaluate it and do -- they may need to do further interviews and further data gathering.

I think they're just hearing this for the first time, if I'm correct, Sam?

DR. GLOVER: That's correct.

CHAIRMAN MELIUS: Yeah, and I think that's the fair thing to do.

MEMBER SCHOFIELD: I just have a

comment to make about the time period. I flew on the Ross a number of times and that was all before 1989.

So, you know, and everybody in town knew the schedule. You knew when it was going to land, you knew when it was going to take off. It was pretty much you could set your clock by it.

MR. HINNEFELD: Just one point of clarification on the additional years and additional contracts.

We provided at least some of those quite some time ago to the Department of Labor. And the determination is based in part on the nature of the contract whether it's an M&O contract, an integrating contract. That was sort of the basis for the determination that was made at the time.

I can't swear that we've sent all of these. So, we can certainly do that.

CHAIRMAN MELIUS: Okay. Yes, let's follow up and let's see how that process goes.

MR. ARMIJO: We have that letter from Labor and it appears to be -- I have a copy here. It doesn't seem to mention the type of contract, but rather just other issues.

CHAIRMAN MELIUS: Okay.

MR. ARMIJO: And I have a copy I can share with NIOSH.

CHAIRMAN MELIUS: Okay. Thank you.

Yes, Dave.

MEMBER RICHARDSON: Just a question.

If we are going to allow NIOSH to go back and take more time to consider this, do we want them to, if they haven't made a request to Eberline/Landauer for the data, is that something that would be useful at this point or, Paul, were you arguing that the NRC REIRS data would be in its aggregate form?

MEMBER ZIEMER: To me, if the NRC inspectors have compared the annual reports which they used against that data which was

present on the site, I would accept that as having strong legal foundation. But, again, I'm not an attorney either.

Obviously, if the Eberline data is available, that would be great. It seems to me it would be very difficult and you'd have to have a great scheme between the regulatory agency and these folks to falsify this and what would be the point?

These are not high doses to start with. So -- unless there were some and someone was covering it, you know.

CHAIRMAN MELIUS: Okay.

MEMBER CLAWSON: So, Jim, do we need to make a motion to have NIOSH -- or just --

CHAIRMAN MELIUS: I think we do it by consent and I think NIOSH agrees.

Is that a fair statement, Stu?

MR. HINNEFELD: Sorry. I got caught having a sidebar conversation.

What was the question?

CHAIRMAN MELIUS: You're comfortable with us referring it back to you?

MR. HINNEFELD: Yes.

CHAIRMAN MELIUS: Okay. For follow-up. Good. Thank you very much to the petitioners and everybody for coming here and for providing this information.

And if you can get the information to NIOSH, we appreciate it.

MR. ARMIJO: Thank you very much for having us out today.

CHAIRMAN MELIUS: Okay. We will obviously keep you informed about the process and what goes on from here.

MR. ARMIJO: Thank you, sir.

CHAIRMAN MELIUS: Thank you.

Since we're already into the public comment period and we have people waiting, it's hard to go back.

I will face all your wrath and comments and complaints and just charge ahead. You are all -- Board Members, others are

welcome to take a personal break during this process.

Our court reporter and I have an agreement that should a break be necessary, he will inform me.

If everyone can get seated now and we will get started. Board Members who stayed at the table are welcome to another cookie before anybody else gets back.

Okay. We have some people on the line. So, we need quiet in the room, please. That includes you, Dr. Wade and Dr. Neton.

No, you can leave. Just I was requesting quiet.

DR. KATZ: So, before we get started with public comments, let me just remind people in the room, as well as on the line who are prepared to give public comments, that this session, as all of the Board meeting, is transcribed verbatim.

So, your comments will be transcribed verbatim and will be published as

all of the Board meeting transcripts are published on the NIOSH website.

So, anything you say will be captured completely and reported there, your name and any personal information.

If you discuss, however, another party, a second party, that information that's private for that person will be redacted from the transcript.

So, the full instructions about this, the full rules about redactions from the transcript are out on the table outside. And for people remote from here, they're also on the NIOSH website under the Board section of the NIOSH website, but that captures it pretty simply.

CHAIRMAN MELIUS: Okay. Go ahead. And our first person, we actually -- my fault. We neglected to give time for one of the Linde petitioners earlier.

And so, I believe she's on the line.

MS. LUX: Yes, I am.

CHAIRMAN MELIUS: Okay.

MS. LUX: Okay. My name is Linda Lux. I am a petitioner for the SEC-00107 Linde Ceramics.

And what I wanted to say was in 2001 when my [Identifying information redacted] and I first submitted the Energy Employees Occupational Illness claim regarding my father's cancer and untimely death, we worked from very vague Union Carbide employment records.

We were only provided proof for 15 years of my father's work at a listed site although we knew he worked many more at the Linde site in Tonawanda, New York.

We were told by the Union Carbide retirees, which is now Dow Chemical, that the records had been destroyed. Apparently, they had been stored in a salt mine and over the years became unreadable.

It is hard to believe that records

placed in storage for self-keeping would be put in a salt mine, but we worked with what we had from employment records and submitted the claim.

Putting together a medical record history was time-consuming and very difficult. I naively thought someone was going to actually read through the medical records I had been asked to provide.

I thought the type of cancer my father had had which was a listed cancer, and the risk factors associated with it, would be looked at and compared to radiation and toxins that were associated with the Linde site.

I pointed out to NIOSH and Department of Labor that in my father's medical records from 1997, the doctor noted a statement my father had made that he worked in extreme dusty conditions for a two-year period of time.

My father worked as a computer programmer and a systems analyst in the

computer department. So, dusty conditions would not be normal for his type of work.

My father is not alive today to speak for himself and tell us what time period he was talking about, but I would think that supposedly claimant-favorable programs would have at least acknowledged this as a possible exposure my father may have had.

I also pointed out that in the descriptions of Linde buildings in SC&A's July 14th, 2006 report on Page 109, it says the southwest corner of the Linde site also referred to as the Tonawanda Laboratory, including Building 11. And it shows Building 11 was remodeled in the late 1960s to create an office area and computer room. And then later again to remove the computer room.

It has been stated by workers that very often they were required to work in the buildings while they were being renovated.

I do remember my father coming home from work very dirty and an odor on him

in the late 1960s. And I stated this to the Department of Labor phone interviewer back in 2001.

This would be the same interview NIOSH claims it listens to before they issue the recommended decision.

I later stated to NIOSH my concern over the imbedded toxins that would have been released into the air from the contaminated buildings being remodeled and how it made sense as to why my father was so dirty after working in that time period.

According to the workers who have given comments, many buildings were remodeled from the 1950s right through the 1990s. But my concerns over the construction seem to have fallen on deaf ears because the latest dose amounts given to my father equaled a less than five percent chance that his work location caused this cancer.

Less than five percent for a worker that had two listed cancers at 59 years

old and had worked more than 15 years at a listed site.

Both types of cancer my father had were in the bone marrow. Cancer research shows that bone marrow is one of the first places a radiation-induced cancer will show up.

Office workers are being ignored in these dose reconstructions by only giving them five percent as compared to a 95 percent for other positions.

Even with the new dose numbers that NIOSH is proposing, it would be impossible for an office worker to qualify for compensation. Yet, many officer workers did get cancer.

In the Worker Outreach meeting for the Linde workers, SC&A stated on Page 120 of 126, that eight office workers in Building Number 100 were all diagnosed with cancer at the same time.

Just like Building 11, Building

100 was also in the Tonawanda Laboratory on the southwest corner of the site. This could not be a coincidence.

Just simply assigning a worker a job category that ranges in dose amounts for five percent for office workers to 95 percent for production workers and how many years they worked at the site, does not give a true or fair estimate of what they were exposed to.

There are workers at the Linde site that have gotten sick in unnatural numbers in all job categories all over the site.

And with the amount of toxins that were stored in the properties, poured into the wells and the sewer systems, dumped and buried in the soil and then unearthed again during construction and demolition projects, has resulted in contamination and hot spots all over the Linde site, and even in the lake across the street and on land that I believe Union Carbide eventually purchased.

It is startlingly disturbing that the unique underground tunnel system that connected most of these buildings together and used by employees to get from building to building during inclement weather, was not only constructed in contaminated soil, but also allowed the contaminated drainage to seep into the tunnel itself.

Like other workers, I raised this issue about workers being exposed in the tunnels during a Department of Labor hearing in 2008.

Each and every Linde worker in all job categories were unknowingly put in harm's way every single day just by simply going to work, and many lost their lives because of it.

I hope you will consider my statement in your review of facts for the Linde SEC petition, and thank you for letting me make my statement.

CHAIRMAN MELIUS: Thank you, Linda. Appreciate that.

The next person I have listed, Antoinette.

MS. BONSIGNORE: Yes.

CHAIRMAN MELIUS: Do you wish to make another --

MS. BONSIGNORE: Can you hear me?

CHAIRMAN MELIUS: Yes, I can. Yes.

MS. BONSIGNORE: Okay. Thank you, Dr. Melius, and the Board.

I would just like to get a little clarification for myself and the other petitioners and Linda who just spoke, about what happened today regarding the Board's refusal to take a vote on Linde SEC-107.

Specifically, I feel as though all of the issues that I raised today in my presentation and all of the issues that Senator Schumer and Senator Gillibrand raised in their letter to the Board that was read into the record today, were essentially ignored.

And I would really appreciate it

right now that there be some clarification, explanation as to why the Board feels that this petition should be kicked down the road for another two months, another three months, another four months.

It just does not make any sense to me when the issue that's the sticking point here is the tunnel issue and NIOSH has known about the tunnel issue since July of 2006.

I don't understand why NIOSH is being given such leeway to continue to evaluate this issue when they've known about it since July of 2006.

The fact that they never took any -- made any efforts to address the issue in any of the Site Profiles that they revised after that point or in the Evaluation Report that they issued in November of 2008, should not be an excuse for their -- to further penalize the workers who deserve to have a vote on this petition.

And I'm just really very shocked

and disappointed that a decision was made so swiftly without any real explanation.

And when I asked for an explanation about an hour and a half ago, I really wasn't even -- I was barely acknowledged.

CHAIRMAN MELIUS: Well, I would think -- I don't recall you asking for an explanation, but we have your comments. And I think we discussed at length among the Board for a period of time, why we decided to put it off.

And I don't think we can repeat that all here, but -- so, we understand your comment and we have it now. Thank you.

MS. BONSIGNORE: Well, I'm sorry, Dr. Melius, but I did ask for an explanation and no one actually responded to me. And I think that Linda is on the line right now --

CHAIRMAN MELIUS: Well, this is a public comment period and we have your comment.

As I said, we gave a lengthy discussion and I really don't think it's appropriate when other people are waiting to make comments, to repeat all those reasons.

MS. BONSIGNORE: All right.

CHAIRMAN MELIUS: We made a determination and we record that you are disappointed with that.

MS. BONSIGNORE: All right. Thank you very much then.

CHAIRMAN MELIUS: Thank you.

Andrew. Andrew? Okay.

MR. EVASKOVICH: My name is Andrew Evaskovich. I'm the LANL petitioner. I spoke to you last night. I'd like to thank you for this opportunity to speak again tonight.

Really, I just signed up because I was wondering, you know, because occasionally issues come up that sometimes need to be addressed. And that's what happened today.

And these are more overarching issues as opposed to dealing with LANL itself.

And it deals with this bioassay data, or the lack of it, and the procedures that NIOSH wants to implement in order to accomplish dose reconstruction.

Now, I understand today that currently the Board does not really wish to develop a process to evaluate or deal with issues, that you're going to let the individual Work Groups work on these issues and maybe use them as examples later on.

But I think as we were talking about or you were talking about transparency today dealing with these issues, it does affect the public's view of the issues.

And I think you do eventually do need to come up with some process to look at these for the way that you evaluate the information so that we, as the public, have some sort of a guideline as to what you are doing in your work procedures.

I don't know, you know. The thing that came to mind to me was, like, developing

a list of questions or a flow chart that you would follow so that we could look at this and have an idea what your work processes are going to be to understand your thought formations or anticipate questions that you might be asking in order to gain information in order to make the best decision that you could.

Another issue I have is with the actual data. We're going to be going back to LANL. This is LANL particular.

An individual that I talked to today, he was unable to speak tonight about this. It deals with the FMU system that was developed at LANL for dealing with maintenance projects. And he said that there was a work ticket that HPs, the health physicist had to sign off on. And he -- the data was disposed of because they changed the maintenance system at Los Alamos. And I guess it was centralized. And they decentralized it and assigned it to the individual technical areas.

And this data that he kept or was responsible for, the laboratory disposed of it. So, I think there is an issue of lost data.

And basically I have a question that is he wanted to submit his comments in writing. Will that need to be in an affidavit form or a letter to the Board?

CHAIRMAN MELIUS: It does not need to be an affidavit, but a letter submitting -- however he wants to submit them is fine. It doesn't need to be a formal affidavit.

A letter -- or some people just give us a typed page or a written page. Whatever is fine.

MR. EVASKOVICH: Well, I wasn't sure because we, you know, I submitted affidavits with the petition process and --

CHAIRMAN MELIUS: No, no, that's a good question. That's a fair question, but it does not need to be an affidavit. I don't believe we've ever required that.

MR. EVASKOVICH: And you guys of course would share that with NIOSH?

CHAIRMAN MELIUS: Yes, yes.

MR. EVASKOVICH: All right. Well, that's all I have right now. I appreciate this opportunity. And, like I said, thank you for coming to New Mexico and listening to us and our concerns.

We're very grateful that the Board did come to New Mexico, and we hope that the hospitality here at Santa Fe exceeded your expectations. Thank you.

CHAIRMAN MELIUS: One thought I had, and, I mean, I appreciate your point about the -- it's helpful for a petitioner to understand what the criteria are to be used.

And I don't think as we talked today, we're ready for that yet or ready to have something regarding that.

But one thing that might be useful to you and it is -- I think both Jim Neton and Joe Fitzgerald presented the types of things

that would be considered in there.

And I don't think there's any reason those PowerPoint slides and so forth couldn't be shared with you if that would be helpful to you.

I'm not sure to what extent they're usually available. I don't think we usually do, but --

MR. KATZ: Yes, those are on the table.

CHAIRMAN MELIUS: They're on the table. Okay. Then those might be helpful at least in the short term and so forth.

MR. EVASKOVICH: Oh, yeah. And that's why it was in my discussion with Joe trying to get some clarification, and that helped.

CHAIRMAN MELIUS: Okay.

MR. EVASKOVICH: And I'd also like to thank Jim Neton. I did talk to him this afternoon after that presentation and I got some clarification. And I believe that NIOSH

is -- well, the way he expressed himself, I believe that they re going to actively pursue the questions that I had and I've presented in the Work Group and here at the Board meeting.

So, I'd like to thank Jim Neton and NIOSH for their responsiveness to the issues that I have raised. And I am grateful for the work that NIOSH does.

I think I fail to thank them for the hard work that they put in, as you guys do. And I think people fail to recognize that sometimes because it's sometimes adversarial as far as the way this procedure works and unfortunately I guess debates devolve into that.

But I am grateful to the work that everybody does that's in this group and we are -- and I'd like to say thank you to everybody.

CHAIRMAN MELIUS: Okay. Thank you, Andrew.

Okay. William Wanger.

MR. WANGER: You'll have to excuse

me. Rigor mortis kind of sets in when I sit too long.

I'm William E. Wanger from Albuquerque, New Mexico. I'm a retired journeyman machinist from Sandia National Labs formerly of ACF Industries prior to that.

I have a little joke you might be interested in hearing since everybody had sort of a straight face here for a while.

The big animals and the little animals were having a football game. The little animals were getting shellacked in the first half.

The second half came up and the elephant had the ball and started running, and he was tackled.

And the squirrel who was the captain of the little animals says, who did that? Who did that? The centipede said, I did that.

And so the next one, the hippopotamus ran with the ball, and he got

nailed. And the little squirrel says who did that? Who did that? The centipede said, I did that.

And he says, well, he says, where were you during the first half? He says, putting on my shoes.

(Laughter.)

MR. WANGER: And I'm glad to see that all of you guys, all the Board Members, ladies and gentlemen, have your shoes on for the second half.

I have a little letter to read here, a statement. I'm also retired representative of the Local 1689 International Association of Machinists. None paid. I have two meetings a month. One in Berlin, one in Albuquerque. And I attempt to help retirees. And I'm not paid. I'm just passing on information to them and trying to help them out when they have concerns.

Okay. My letter states, to whom it may concern. Remember possible radiation

exposure that was undocumented. I worked for ACF Industries known as South Albuquerque Works, from October of `62 until April of `67.

At this plant, there was a lot of undocumented possible radiation exposure areas, as well as many other hazardous material exposures.

I worked for Sandia National Laboratory from April 1997 until October 3rd, 1999.

In the early years, I worked a lot of time, 1970 to `72, in four buildings north of 840 to include the plastic shop and three Quonset hut-type buildings.

In the middle 1990s, all these buildings were torn down, the earth removed to a depth of ten feet or so from where they stood and the area was blocked off with radiation signs.

It is said that one radioactive bolt was found, and I question whether that's the whole story.

The area remained so until about the year 2000 when some buildings in the area was allowed. Hence, it is possible that many workers were exposed unknowingly to radiation of some kind at some point. No documentation of radiation exists, as I am told.

Another instance was in 1967 when I was a newly hired machinist apprentice. Some old machinists kept uranium round bars in their toolboxes.

Now, whether it was depleted or enriched uranium, I couldn't tell you. They thought it was great fun to come up behind an apprentice and hit the bar with a hammer causing sparks and a loud noise and scare them.

This happened to me on several occasions during `67. This was also known to happen at the ACF Industries location. When it no longer bothered me, it stopped.

No one knew where they came to have the uranium bars in their toolboxes.

These machinists are long dead and gone. So, they were old in `67.

Over the years at Sandia, especially in the earlier years, I worked with and around radiation. Sometimes I had a radiation monitor badge, and sometimes not.

Uranium and other radioactive machining was done in various shops long before the toxic shop was established.

This shop, once established, was to machine toxic and radioactive material in one location.

It was eventually closed and the work sent to Los Alamos due to the hazards involved, as well as other problems.

Some areas had radioactive material in cabinets at various locations at Sandia. As to what kind of radioactive material, I really don't know, but I saw many of the signs and handled some of the material.

The ones I handled was depleted uranium, as far as I know. That's what they

told me anyway.

It is possible that there were a lot of workers exposed knowingly and unknowingly to radioactive material, as well as other hazardous material.

Monitoring for the most part, was not very good in the early years. I am sure that not many paper records can be found about much what happened in the early years.

Much of this could be attributed to workers not being properly informed of the hazards involved. Also, many hazards were unknown in the early years.

ES&H was not big at Sandia until the Tiger Team came to inspect sometime in the 1980s.

Some offices were installed in buildings that once held research labs where radioactive materials were handled, and undocumented various spills occurred.

One of the greatest problems with the Energy Employees Compensation Act is

survivors' claims. Widows and/or other survivors of deceased former employees have a very hard time to establish exposure to possible hazardous and radioactive materials of the deceased person. This is also true for living former workers.

In my own opinion, I saw many instances that are probably classified which I cannot relate in the material, throughout my 32 years there and five years almost at ACF.

The workers who died -- the survivors that are left, I have tried to get them to file claims for the survivors. I have tried to get the living workers to file claims with the Department of Labor. Some of them have. Some of them don't want to fool with it.

Widows have a terrible time especially when they're old and the workers never discussed their job at home.

In the old days, we done the job regardless -- or irregardless of any kind of

safety monitoring or anything like that that was in existence. That was always an afterthought.

Paul Ziemer over here hit the nail on the head when he said he had -- the implementation was a great problem. And I felt a bit inspired when he said that, because there were safety procedures in place had they been used and had data, been acted upon after that.

I do believe that many people from Sandia worked on Los Alamos projects with the radiation. I understand that Los Alamos has a cohort. I would ask for you guys to consider that perhaps Sandia workers that have radiation-induced sicknesses could be added to the cohort at Los Alamos since while I was there, Los Alamos people came down, had us do work, we had them do work at ACF. We had Sandia people, engineers come down and we did work for them unknowing what it was or anything like that.

In the old days, it was get the job done. It was our patriotic duty to do whatever it was that had to be done regardless of the cost.

Many of my friends over the years have died early deaths with horrible illnesses that may have been induced by hazardous exposure to material. Radiation could have been possible for many of the things.

In one area, all the grinders -- we had a separate grinding shop at Sandia. All of them died from cancer, and all had the same cancer. Lung cancer. Now, that's very strange for all of them to die from that, you have to admit.

And I'm glad to see that all you gentlemen are concerned over the current workers, as well as the past 20 years or so. Like I say, I've been retired for over 11 years now. I'm not in the game anymore, but I'm still fighting for the rights of the deceased, the dead, the sick and the ill.

And those have gone before me I have great respect for because I have known many of them and they were great heroes.

If anybody deserves the Medal of Valor, the Medal of Honor, it would be some of them because there are people I have interviewed -- I work part time for Johns Hopkins University interviewing retirees. And you might not be amazed, but you might be, of the sicknesses and illnesses that these old gentlemen who can barely walk and barely get around yet and are almost dead, what they have and what they have suffered in their life and the things they worked on.

It is amazing, and I take my hat off to all of them and to all of you. Thank you very much.

CHAIRMAN MELIUS: Thank you. Just for your information, there is a petition, SEC petition for Sandia that's qualified. There's an Evaluation Report that I think will be done after the first of the year on that, and so

the Board will be taking up that petition. So, thank you.

Okay. [Identifying information redacted], I believe it is, signed up. No. Okay. Fine. That's not required.

Marlene Miller.

MS. MILLER: Does this mic work?

CHAIRMAN MELIUS: Yes, it does. Yes. Either mic is fine.

MS. MILLER: Okay. Thanks.

CHAIRMAN MELIUS: Wherever you're most comfortable.

MS. MILLER: Thank you. Gives me a place to hide.

I'm Marlene Miller. I'm the widow and survivor of Charles M. Miller. And my comment is on the Los Alamos SEC. And I definitely believe that the dates for the Los Alamos SEC should be extended.

My husband, Charles Miller, who was a Ph.D. from Stanford, worked at Los Alamos National Laboratory continuously from

1980 until his death from a radiation-caused glioblastoma brain tumor in 2001.

And the reason I state that it's continuously, is I got a letter from the DOE and they had that he had worked at Los Alamos intermittently, which just simply isn't true.

And Charlie worked with Nick [Identifying information redacted], another young Ph.D., who died from stomach cancer at the age of 46. Charlie died two weeks after his 47th birthday, and I just don't believe that it's a coincidence that these two healthy young men worked together and both died at such a young age from cancer.

Charlie and Nick's careers began and continued in the very contaminated D Wing in the CMR building basement. They did extensive research, experiments and analysis with highly radioactive materials, isotopes, et cetera, with dangerous laser dyes benzene and DMSO, which both quickly exacerbate the absorption of radiation into the body, brain

and other tissue.

And this statement about the DMSO taking the radiation into the whole body, this was proven at Livermore national Laboratory. So, it's -- that's where I got my information.

And when Nick and Charlie had accidents in the room where they worked, I don't know if they were put into this contaminated room because of the type of work they were doing or because there was no other space available, but it's well known that the basement D Wing has always been very contaminated, and then of course the materials that they worked with.

And they even talked one time about an explosion and Nick came home from work with his lab coat just in shreds where they had -- one of these materials -- one of these experiments they were working on, exploded on them.

And they would just clean up these accidents and spills and things themselves.

And I don't know, you know, it just seems like things were different in the `80s.

But they worked in these conditions and circumstances for several years and were not monitored for radiation or any other type of exposure.

Monitoring was started in the CMR Building -- was not started in the CMR Building until the mid-`80s. So, they had worked in these conditions with these materials for five years.

And, therefore, it's impossible to know how much radiation and other nuclear exposures they received during these years. However, it was enough to cause both of them to die from cancer.

And I believe that an enormous amount of dangerous work was done at LANL in the late `70s and early `80s that was not monitored.

I also believe that when monitoring was done, it was not complete.

And, therefore, not accurate or adequate. There was also the factor of human error.

And NIOSH has done -- the first dose reconstruction they did, they included the data that I collected from Los Alamos. And apparently it was very incomplete because they thought he was an intermittent employee of Los Alamos, and he was a full-time continuous employee.

And then I also in the claim that I made, told them that Charlie worked at the Nevada Test Site. And he was the lead diagnostician for the weapons tests at Nevada.

And one of the -- when they were talking about the Ross, that brought back some memories to me because after there would be a test, Charlie would sleep in a -- he called it a shack. what it was, I don't know.

And then when the drillers would bring up samples from the tests, he would test those samples, decide if this is the material they needed to return to Los Alamos for

further analysis, and so he would package this material himself in these containers and fly back on the Ross from Los Alamos with them and take them to the lab. So, he had a lot of close contact with that type of stuff.

And, also, the work that Nick and Charlie did was classified. So, I don't know what materials he worked with.

I heard somebody speaking of gamma and different things, which I don't have any chemistry or physics background. So, I don't know what any of these things mean, but I do know that it took a toll on my family.

And so, you know, I really think it would be irresponsible for anyone not to extend the SEC, the Los Alamos SEC, because there is so much information that's incomplete or unavailable.

And I know Nick's [Identifying information redacted], [Identifying information redacted]. Nick and Charlie were best friends, and [Identifying information

redacted] and I are still very good friends. And one day [Identifying information redacted] and I went to the unclassified library there at Los Alamos trying to find some of the -- if there were papers that they had written that weren't classified, and we were promptly thrown out.

They said you have no business looking at any of this stuff. And so they wouldn't even let us look at anything that might have been unclassified.

Let's see. In my experience -- oh, okay. NIOSH has done three dose reconstructions. And the first one was, you know, I gave the information of when and where he had worked, but I don't know what they did with it.

But anyway, I then went to the health part of LANL and got his Los Alamos records that were available. And they did a dose reconstruction. And they said something like -- I don't know. Maybe it was 24 percent

likely that his cancer had come from his work at Los Alamos.

But then I found out that they had not included the data from NTS. And so, I wrote a letter to NTS and I got that data. And he had received a greater amount of radiation at NTS than was recorded at LANL.

And when they did another dose reconstruction, it was like a 12 percent likelihood that his cancer had been caused by his work at Los Alamos and NTS.

And so I talked to someone at the Department of Labor and they said, you know, how can this be.

So, they asked for another dose reconstruction. It came out that it was five percent likely that his cancer had been caused by his work.

And so I think -- I don't know if bunches of his information has been lost. I don't know if, you know, as it gets passed around to these different places, what happens

to it. I just simply don't know.

But I do know that his cancer, and also Nick's cancer, was caused from their work at Los Alamos. And, you know, for these guys to die at age 46 and 47 and both of their parents were all still living at the time and none of their parents died from cancer -- Nick's mother is still alive. Charlie's parents are now both dead. Neither died of cancer. And Nick's dad did not die of cancer.

So, there doesn't appear to be cancer in the families. And yet, this is what these two young men died from. So, I do really urge that you do extend the Los Alamos SEC.

Thank you so much. Does anybody -- do you have a question?

CHAIRMAN MELIUS: No. Thank you.

MS. MILLER: Okay.

CHAIRMAN MELIUS: I'll just say if you have questions about the dose reconstruction, I think you can talk to some

of the NIOSH staff.

MS. MILLER: Okay.

CHAIRMAN MELIUS: Thank you.

MEMBER SCHOFIELD: One quick question. Clarification.

Did you say in the basement of Wing 4 or Wing 7?

MS. MILLER: Wing D. I believe it was Wing D, CMR Building.

MEMBER SCHOFIELD: It has to be a number.

MS. MILLER: Seven does not sound right. Five could sound right.

Could it be Wing 5?

MEMBER SCHOFIELD: I'll talk to you in a few minutes. I think it's Wing 4, because of what you've said.

MS. MILLER: [Identifying information redacted] can tell me for sure, and I can give [Identifying information redacted] a call.

MEMBER SCHOFIELD: Okay. Yes,

because that information would be important.

MS. MILLER: Okay. I know that the lab was contaminated. And, like I said, I don't know whether they put them there because of the type of work they were doing or if it was the only space available.

But another interesting thing is they're not finding that Parkinson's Disease is being caused -- people with Parkinson's Disease have worked at LANL.

And [Identifying information redacted], who is the person that actually hired Charlie and Nick, is in the last stages of [Identifying information redacted] right now. And another man that Charlie worked with has Parkinson's Disease.

So, they definitely worked around dangerous things. But I can give [Identifying information redacted] a call and [Identifying information redacted]'ll know exactly what wing they were in.

MEMBER SCHOFIELD: Okay.

MS. MILLER: Okay. Thank you.

CHAIRMAN MELIUS: Thank you.

MS. MILLER: Thank you all.

CHAIRMAN MELIUS: Next person signed up is a Joseph Tapia, I believe.

Joe?

MR. TAPIA: My name is Joseph Tapia. I worked with the laboratory, Los Alamos National Laboratory, from 1953 to 1990 when I retired.

I have had prostate cancer. And I am in remission right now. And I worked at S-site for WX3. And my job, I was a technician for 30 -- well, I worked 37 years for the lab.

But I did technician work on nuclear assemblies and non-nuclear, both, all my life. My entire life at Los Alamos.

I worked on -- at Nevada Test Site also. We would assemble the nuclear bombs over there and they would test them. So, I was in that category of going back and forth from Los Alamos to the test site in Nevada.

I never did get -- I never did get any doses. I did get a letter about the same time that they were having a conference over here on New Mexico. They had it about this summer, I guess.

I did get a letter from Nevada telling me to attend the meeting at Nevada, which was almost -- probably about five days before the meeting or something over there.

But I never did get any exposures, to my knowledge, of what I got in Nevada because we were always working with nuclear over there.

And we did nuclear at the beginning of the year until about, I guess, from 1953 until about 19, maybe, 65.

We used to do all the work at Los Alamos, and then they stopped us because we couldn't fly a complete nuclear bomb across to the Nevada Test Site. So, we started to go make trips back and forth to Nevada test site.

There was a lot of situations --

not a lot, but there was a few that we had. One was in Los Alamos. We were working on a device and we had -- we did have a monitor. And we were opening a package from -- with tritium, which is used on nuclear bombs.

And we -- as we opened it, the monitor was there. And they opened -- it was very well wrapped in polyethylene and everything. We had to take it apart.

And all of a sudden I guess the monitor noticed there was a high reading and he said, run. So, everybody ran. I don't know. But it wasn't -- it was just, I guess, from the package that was contained some radiation came -- I don't know how much.

We went back and it was -- he said it was okay to work on it. So, we worked and we finished whatever we had to do that night. It was -- we were working overtime, as a matter of fact.

There was another instance, too, in Nevada. The same thing with another

tritium bottle over there.

And we had the same situation happen. And there was a monitor, always. We had monitors. And we had radiation badges, but that was it, you know.

And we -- and it happened the same way, but it was just, I guess, the pressure from flying it from Los Alamos to -- when they opened the package, it had some contamination that just flew up into the air.

And, also, we did a lot of radiographies over there. And it was all done with cobalt because we didn't have an x-ray like we do at Los Alamos and everything. We didn't have it over there. So, they'd do it with a cobalt source.

One time when we were taking radiography on the unit, they called it a worm that goes all the way up and that exposes the source onto the units that we're radiographing. We -- it got jammed and they couldn't bring the worm back in for a while.

Finally, I guess -- we weren't there. We were at the guard station. The building was -- and this was outside, I mean, before they built a new DAP. They have a new place now that was very concealed. Everything was real nice now, but it wasn't that nice then. We were working in buildings.

And anyway, they finally contained it for -- they rolled it back in and that was the end of that, you know. Everything was okay, they said.

But anyway, my -- what I'm here for is because I went -- I did NIOSH and all that by -- at first back in 2007, I guess, 2008 or something.

I got a letter back from NIOSH that I was denied compensation for the cancer. And that -- now I'm working with New Mexico workers and see what they can help me with.

But I would like to also present that I had a coworker with me that I worked all the -- that we worked together. He was

there for maybe ten years. I had been there for 34 years. Anyway, he got cancer of the prostate and they gave him compensation.

And we, as far as I know, we're the only two in the building which was about eight employees, eight technicians, that got -- that didn't have any cancer. Just he and I. But he got it way back -- it's been quite a while that he got his compensation. And I couldn't understand how he got it and I didn't, you know.

So -- and then also, you know, there's other things that I've had. I've lost my eyesight on one -- and there is -- we used to do a lot of -- lot of assemblies, non-assemblies and assemblies.

And also, like the lady said, testing units over there at NTS that were in tunnels, they were exposed to radiation.

They would package them up after they were -- they were concealed. They would pack them up and they would ship them to Los

Alamos.

And these samples that we would get, we would get the samples out and send them to the labs wherever they were supposed to go. We did that a lot.

And we did a lot of that down there because they had a lot of tunnel shots with radiation exposures.

And anyway, my main thing is that this fellow and I don't understand on what basis because I really helped him fill out his paperwork when he sent it over there, because he felt that I could help him.

And we came over and did all this paperwork, filled it all out and everything. And he was the type of guy that had everything in order, you know, from the day he started working. And he was pretty good, but -- and I don't want to say who or anything. It's kind of a, you know, I wouldn't -- unless it's in privacy.

But like I say, he was only there

like ten years doing the work that I did for 34 years. And I complete -- I got exposed all that time.

There was one instance where I was at -- doing an assembly with D38, plutonium -- not D38. That's uranium. Plutonium-138 and we had a really -- a dirty plutonium which only the lab had. It was only like maybe, I don't know, 15, 17 kilograms of it that existed in the world.

Anyway, they were just samples that they were putting in these pits. A small percentage. Grams, even. I don't know what exactly it was, but I knew it was grams. And it was this dirty plutonium that was very high toxicity and very highly -- anyway, we sent it to a test site here at Los Alamos to blow up.

But they put it in sealed vessels. And they put this unit into a sealed vessel that was contained. And they contained the explosion in that thing and then they make sure that everything -- and they went off all

right.

Well, anyway, to make a long story short, I was put -- they put me -- because I had reached a level of radiation and they put me that I couldn't work on any more radiation anymore for three months or something. I had reached my quota in a quarter.

So, they took me off of it and I did small stuff with D38, which is too glowy. It's not that bad, but it's bad for your eyes when you're -- and I have lost my right eye already.

What is was all about, I don't know. I have no -- and my folks, my -- I did have a daughter that died 40 years old. And she was -- she was -- I don't know. I kept thinking, you know, maybe I brought something home, you know.

Anyway, she had Ewing's sarcoma and she died at 40 years old. She was married with three children and it was really hard.

But, like I say, I can't prove

that or nothing like that, but, anyway, my case is why he got it and I didn't get it.

I have not -- I don't understand that at all because I know what he did, I know the -- where he worked and he didn't get any more doses than I.

In fact, with my 34 years and his ten years there, it was -- I had to get, you know. I was there longer to be exposed.

CHAIRMAN MELIUS: Excuse me, sir. Could you please try to wrap up soon?

MR. TAPIA: That's about it, you know.

CHAIRMAN MELIUS: Okay.

MR. TAPIA: I just felt like I needed to present it to the Board. And I am working with New Mexico. [Identifying information redacted] is helping me and I thank you for listening to me. And hopefully something can come of it.

Anyway, I have made an attempt. Thank you.

CHAIRMAN MELIUS: Thank you very much, sir.

The next person I have listed is, I believe, Paul Mantoya. Okay, Paul.

MR. MANTOYA: Yes, my name is Paul Mantoya and I worked 31 years for the National -- Los Alamos National Laboratory.

The first nine years I worked at Sigma from 1962 to 1971. I worked in the powder metallurgy group. And I worked with the beryllium. I used to make hot presses, cold presses on every daily base.

I operated extrusion presses. I used to extrude fuel elements that they used at the Nevada Test Site. They're all uranium beats. U-235. They're all loaded.

We didn't have -- we wouldn't use them in hoods. We would just blend them with work and so on and run them through the extrusion press.

We would run that press at 150 tons with a die on it. We would put on the

plenum or whatever part you wanted.

Okay. So, Los Alamos National Laboratory or this whole program, the U.S. Department of Labor have never recognized. In other words, we should be -- we should be recognized like with the uranium miners, because right now -- I used to work with more -- I worked with more uranium than what this uranium workers will ever see in their life because I worked with the pure, pure. It's all pure uranium.

I worked with a little bit D38, but the D38 was always kept separate. I operated hot presses of all sorts, ran all different presses. We used to use graphite dies and all kinds of dies. Tandem dies and everything.

And at several times we had some accidents. Especially running the isostatic press, because we used to run it rather with hot presses and cold presses also.

Okay. So, then in 1971, I moved

over to what is known as TA-21, DP West. That place was terrible. And actually I went out there and I started casting uranium shells -- or, well, I mean, uranium. And I started casting plutonium shells. Pu-239. I never done any 238, but I -- we used to cast -- I worked with plutonium-242 also. So, I done a lot of castings.

We had in 1976, we had a group leader that said that -- we were all reluctant to work with radiation and all this and that. And he said that we should -- we shouldn't do that. And he didn't call us crybabies, but he did call us something else.

Okay. So, about two months later he didn't -- we didn't see him for a few days and they said that he was a little bit sick.

Okay. So, he came back to work. Okay. Next two months he was out completely and they done surgery on him on his head. He had a tumor. And, okay, next month he was gone.

Okay. So, a lot of the people that did work at that time -- okay. So, then at the same time in 1976, we had a -- what they call a reduction vessel. It blew out and I picked up so many nanocuries of americium-241 in my lungs.

Okay. So, that went on. Okay. So, we moved on to the plutonium plant in 1977, TA-55. I worked out there 17 years doing the same thing. I was casting uranium and running beryllium plates through a rolling mill, you know. You would get a real fine -- okay.

And then I was also casting uranium shells. And we also had a lot of -- rather, we would get hot just about every day because they have the CAM alarms out there in the door.

And since they had negative pressure inside the -- inside the room, those CAM alarms won't go off even if there's some leakage of -- the CAM alarms won't go off

because until they open the door.

Whenever they would open the door, then of course you lose your negative pressure, you know, through the hallway. Then the CAM alarms will go off. By that time, it is too late.

And then also in 1987 in August, I had -- there was also one of those vessels ruptured and I picked up -- and I picked up like three nanocuries of americium-241 again. Not to mention the Pu-239 and everything that went along with it, you know.

And then also -- okay. So, they put me on -- they sent me on a prompt thing, you know, whatever they would call it.

Okay. So, then in February 1988, the same thing happened. So, I picked up more. So, I do have -- and so then, anyway, I would pick up -- in one of those years, I picked up -- by the time -- okay. They pulled me out of the plant in September, but there's two months outstanding and I already had 4.82

of radiation. 4.82.

And I know -- okay. So, they pulled me out, out of the plant like until December -- until January 1st. Okay. I came back on January 1st. That happened in two consecutive years: 1982, 1983.

Okay. So, I know -- so, they kept everything under the rug, but I know that the way that I was going, I know that I went pretty close to 6.0.

They won't say anything. They used to send me to the lung count out there that they had at the rad lab. What they called the rad lab, you know.

So, anyway, that went on for quite a while. And I know, okay, so then in 1989 I was pulled out of the -- I was pulled out of the plant like almost two years because I had -- okay. So, I worked at the target fab. I worked with the beryllium plates. Actually would take the hardness testers on them and run all kinds of tests on them and everything

else.

Okay. So, they brought me back to -- in 1991 they brought me back to the plant, TA-55. This time I was in casting, but I was working for this staff member and we would work on accountability.

What I was doing, I would take all -- myself and my boss would take every single -- that was after the Tiger Team came over. They had to account for everything.

So, my boss and I would take out everything out of the -- every single item that was inside the vault. We'd go out there and take out so many at a certain time -- at a time.

And I would run through the calorimeters and that would give you an accurate, true value of how many grams each thing -- and that would confirm everything, you know. So, I done all that.

Okay. So, then I retired in 1993. Okay. So, then, believe it or not, but as

soon as I retired in 1993, myself and another fellow, we got together with Congressman Bill Richardson at that time. That was in 1994. I knew that the lab wouldn't go after me then.

So, okay. So, we started this program that we're seeing today, believe it or not. Okay. So, we kept on. Then U.S. Senator Jeff Bingaman came on. And he took it on from then on.

We've been fighting. Unfortunately, I haven't gotten my compensation. My other coauthor got his already and good for him.

He feels bad because, you know, he tells me all the time that he feels bad that he got his and I didn't get -- I haven't gotten mine.

Okay. However, I still -- okay. So, I was diagnosed with beryllium sensitivity by Johns Hopkins in the year 2000.

Okay. So, I've been going to the National Jewish Hospital every year. Okay.

One of the doctors told me out there that I did have -- he was almost certain that I had the beryllium CBD. Beryllium -- chronic beryllium, but he wasn't sure.

He said that he would need to give me a biopsy. He said -- and I told him, no, I think what you see in my lungs, I think it's plutonium.

And he said, no, it's not plutonium. I know what plutonium looks like. You do have plutonium also in your lungs, but you do have beryllium, but I want to be sure.

Okay. So, he tried to talk me out into a biopsy, and I didn't do it. And I haven't done it either.

Okay. So, right now --

CHAIRMAN MELIUS: Mr. Mantoya. Excuse me, Mr. Mantoya. Could you try to sort of wrap up here?

MR. MANTOYA: Okay. Sure.

CHAIRMAN MELIUS: Yes.

MR. MANTOYA: Okay. So, then

anyway just in the last six months ago, they gave me $5,000 because I had beryllium sensitivity.

So, I would like to ask you people to consider Andrew's, you know -- and hopefully everything will get going, you know, and I sure thank you for giving me the time.

CHAIRMEN MELIUS: We thank you, sir. Thanks.

Next person I have is Celina MaiVigil, I believe it is. Celina -- yes, okay.

MS. MAIVIGIL: Hi.

CHAIRMAN MELIUS: Hi.

MS. MAIVIGIL: It's Celina MaiVigil.

CHAIRMAN MELIUS: Okay.

MS. MAIVIGIL: And I am still a lab employee. I've been working up there for 26 years. I am in procurement. I have basically always had an office job, but I've worked in different areas.

I mean, some of the examples where there was radiation even though, again, I've been considered an office employee, I've worked at TA-53, been down into the accelerator, out in the back where they had the containers. Supposedly they were all sealed, but yet some of the containers you could see had running liquids that had been either leaked or -- I don't know, but we just saw them.

There was -- I had worked at TA-54 for a while. I went into some of the sheds where -- the storage sheds where they had some of the containers that were being stored and held there for a while and eventually shipped out.

I also worked for the Zia Company and I worked right across the hall from the machine shop again in an office job, but in an office setting, but it was directly across the hall from the machine shop.

I also worked for DOE in Los

Alamos. I don't know that there was any contamination during the five-and-a-half years that I worked there, but I have been up in Los Alamos for most of my working life and I have been denied twice.

There has never been any cancer of any kind in my family up until I was diagnosed with cancer. And then my [Identifying information redacted] is also a retired lab employee, and he was diagnosed with [Identifying information redacted] about three or four years ago.

But there are two ladies that worked with me. In fact, one of them was the one that hired me when I started working at the laboratory. She also had breast cancer. She's retired now and she's still alive, but she has been approved and has gotten her compensation.

The other lady has retired probably four or five years ago. She had breast cancer within a year after she was

retired, has gone through treatment and was in remission. Two months ago she was diagnosed with a second breast cancer.

She is in the process of getting compensated and has been told that -- and, again, I don't know why, but her chances of being compensated are just as good as the other lady that worked with me. And we all worked in procurement directly together.

I am a few years younger than them. But other than that, I don't know why I've been denied and they have not. Thank you.

CHAIRMAN MELIUS: Thank you.

I believe we also have some commenter's on the line. And I believe Terrie Barrie is on the line as one.

MS. BARRIE: Yes, Dr. Melius. This is Terrie Barrie, and there's about, from what I understand, like two or three other people who are interested in making some public comments.

CHAIRMAN MELIUS: Okay.

MS. BARRIE: Okay. Well, good evening. And, Dr. Melius, and members of the Board, I want to thank you again for allowing me to call in to comment.

First, let me warn you that my comments will not come close to the powerful statement made today by Antoinette Bonsignore for the Linde Ceramics claimants.

I have to agree with her that I'm disappointed also that a decision was not made today and has been postponed.

What's really sad is that the same issues Antoinette and Andrew Evaskovich have raised to the Board, are the very same issues that faced the Rocky Flats petitioners three years ago. And those are the failure of NIOSH to comply with the 180-day requirement, ignoring evidence, and the seemingly endless scientific debates.

I would have hoped that by this time, and we're talking, what, seven, eight

years now, that some of these issues would have been resolved by now.

I know you won't be surprised by this, but I want to talk mainly about the Rocky Flats Site Profile and SEC petition.

I was very happy to learn that the Board's Work Group on Worker Outreach chose the Rocky Flats site to audit NIOSH's response to comments made by the public either during the Board meetings in Denver or by letters to the docket or emails to NIOSH officials.

This audit is so important. One reason is that the Rocky Flats SEC petition was the first large-scale petition, I believe, in terms of potential claimants to be considered by the Board.

Many workers, claimants and advocates from the Rocky Flats facility feel that their comments were summarily dismissed by NIOSH.

Some feel that their comments were rejected simply because they did not have a

degree in health physics, yet these commenters had years of practical experience on the production floor and related the reality of work practices at Rocky Flats as opposed to what was simply written in the procedure manual.

You heard last night from Andrew, the LANL petitioner, and Loretta Valerio, the director of the State of New Mexico's Advocacy Office that human error and the lack of following written procedures resulted in unmonitored exposures.

The workers from Rocky Flats explained the same thing to the Board back in 2007.

It will be interesting to learn how many of the oral histories NIOSH investigated and incorporated into the technical documents for Rocky Flats.

One particular comment that I'm interested in learning whether NIOSH considered was not made by a former worker,

but by a biologist, [Identifying information redacted], on May 2nd, 2007.

As a scientist, he disagreed with the dose-reconstruction process and offered some very convincing, at least in my opinion, arguments.

Has NIOSH considered [Identifying information redacted]'s views, entered into a discussion with him or did NIOSH simply ignore the entire testimony? This audit will answer that question.

Another comment I remember, and I don't know if a formal response or explanation was offered by NIOSH, is the conflict of interest issue with the neutron dose-reconstruction project.

The feelings of some claimants about this audit are ambivalent. They remember the two years it took for the SEC process. They remember the three years it has taken to get to the bottom of the Ruttenber Database which, unfortunately, is still not

fully resolved, and they worry about the administrative costs.

Hopefully this audit will not take long and the Work Group could present a preliminary finding at the February meeting.

I would also suggest that the SC&A report on Rocky Flats' Site Profile and NIOSH's SEC petition Evaluation Report be reviewed as part of this audit.

SC&A interviewed many former workers from the Rocky Flats site during that process.

Some of the interviewees may not have been present at the Board meetings or were reluctant to speak in public.

It would be interesting to learn again if any of the oral histories relayed to SC&A were incorporated into NIOSH's technical documents.

Regardless of the outcome of this audit, ANWAG endorses the Colorado congressional delegation's letter to Secretary

Sebelius requesting that she reverse the decision -- the SEC's decision and designate that all workers from Rocky Flats be covered by the SEC from 1952 through 2005.

Too many issues have come to light after the Board voted for the narrow Class of workers to become a member of the SEC.

I want to publicly thank the delegation for their continued support and their struggle to obtain justice for the Rocky Flats workers.

I would also like to publicly thank Senator Tom Udall, Senators Schumer, Gillibrand and all the other congressional people who constantly send letters to the Board and I hope you do seriously consider their input.

In closing, I want to ask the Board to take stock of the SEC petition process. I and other advocates believe that the process has strayed a long way from the congressional intent.

Thank you again for allowing me to address the Board.

CHAIRMAN MELIUS: Thank you, Terrie.

By the way, I don't know if you heard, but Rachel Leiton when she was doing the DOL presentation, indicated that the DOL policy or whatever, I forget what the document is called for implementing how they'll handle the -- bulletin should be out very shortly.

MS. BARRIE: Yes, I did hear that.

CHAIRMAN MELIUS: Okay.

MS. BARRIE: And we wait for it daily.

CHAIRMAN MELIUS: Okay.

MS. BARRIE: Thank you.

CHAIRMAN MELIUS: Check's in the mail.

(Laughter.)

MS. BARRIE: Yes, right.

CHAIRMAN MELIUS: Okay. Thanks.

Anybody else on the line that

would like to make comments? Could you please identify yourself?

MR. McDANIEL: Yes, my name is George McDaniel.

Do you hear me?

CHAIRMAN MELIUS: Yes, we can.

MR. McDANIEL: Okay. My [Identifying information redacted] worked at Linde Ceramics in Tonawada. She was employed there from 1952 to 1968, a period of 16 years.

At the current time, she does not fall under the SEC because that was for people that worked there during the active period of the uranium manufacturing or crushing.

However, she did work in Building 30 for her total 16 years at the facility, and Building 30 was the most contaminated plant in the -- most contaminated building in the facility.

It was demolished under FUSRAP because of its noncompliance with the -- oh, let's see. Because it didn't meet the safety

standards. So, they knocked it down.

So, they covered people that knocked it down, they covered people that worked there when it was milling uranium ore, but it didn't cover the people in between.

So, I don't understand how it can cover some people and not others. I mean, if it was so hazardous that it had to be taken down, how can the employees that work there not be covered? It just doesn't make sense.

In listening to some of the comments from people while I've been on the line, I find that there's -- I have a question.

Does the reconstruction matrix take into account that -- of cancers by all employees in a group in the same building, do they factor that into the percentage of causation or is it all individuals?

Because if six people work in an office and five of them die of cancer, how could it not be related to the building? That

just doesn't make any sense to me at all.

Again, I hope that you will review these petitions and grant SEC status to all employees there because obviously the site was just really contaminated.

If they had to knock it down, that should speak for itself, and I thank you for your time.

CHAIRMAN MELIUS: Thank you, sir.

Anybody else on the line who'd like to make comments?

PUBLIC PARTICIPANT: Yes, I'm here.

CHAIRMAN MELIUS: Well, who are you?

Can you identify yourself and --

PUBLIC PARTICIPANT: A former Los Alamos worker.

CHAIRMAN MELIUS: Can you give us your name?

PUBLIC PARTICIPANT: Not right now, no.

I was curious about yesterday's

meeting. There was some kind of facility tour that was conducted with the Department of Labor and some other individuals.

I was wondering what facilities they toured. They didn't mention what facilities.

They were pretty impressed on the Los Alamos facilities that they toured, but they didn't mention what facilities they toured.

CHAIRMAN MELIUS: I was not on the tour. A number of the Board Members took a tour of the facility. A riding tour of the facility and the museum.

PUBLIC PARTICIPANT: Yes, and the museum, but what facilities did they look at?

CHAIRMAN MELIUS: I can't tell you right offhand. And this is a public comment period, not sort of a question-and-answer period.

PUBLIC PARTICIPANT: Sorry. I was just curious as to --

CHAIRMAN MELIUS: No, I understand. It's not --

PUBLIC PARTICIPANT: And I was wondering about DOELAP certification on any of these dosimetry records and stuff. When was that done? Is that taken into account?

CHAIRMAN MELIUS: I'm sorry, sir, but this really isn't a question-and-answer period. We're here -- if you have a public comment regarding LANL or the SEC, that's fine, but we're not here to sort of answer questions.

PUBLIC PARTICIPANT: Oh, okay. Well, I just wanted to mention the DOELAP certification on Los Alamos.

CHAIRMAN MELIUS: Again, we're not here to answer questions and do that. If you have a comment -- if you don't, that's fine.

PUBLIC PARTICIPANT: Okay. Thank you.

CHAIRMAN MELIUS: Thank you.

Anybody else on the line that has

comments?

Okay. If not, I will bring this public comment session to a close and thank everybody for being here, and we will reconvene in the morning.

(Whereupon, the above-entitled matter went off the record at 6:55 p.m.)