THURSDAY
MAY 13, 2010

The Work Group convened telephonically at 1:00 p.m., James Melius, Chairman, presiding.

PRESENT:

JAMES M. MELIUS, Chairman
JOSIE BEACH, Member
MARK GRIFFON, Member
WANDA I. MUNN, Member
PAUL L. ZIEMER, Member

ALSO PRESENT:

TED KATZ, Designated Federal Official
HANS BEHLING, SC&A
KATHY BEHLING, SC&A
TERRIE BARRIE, ANWAG
SAMUEL GLOVER, DCAS
EMILY HOWELL, HHS
ANN HUPKOWICZ, Bethlehem Steel Action Group
JENNY LIN, HHS
ARJUN MAHIJANI, SC&A
JOHN MAURO, SC&A
DANIEL McKEEL, Texas City Petitioner
JAMES NETON, DCAS
WILLIAM THURBER, SC&A
ED WALKER JR., Bethlehem Steel Action Group
MR. KATZ: This is the Advisory Board on Radiation and Worker Health. This is the Surrogate Data Work Group. My name is Ted Katz, and I am the designated federal official for the Advisory Board.

We will begin, as always, with roll call. We are going to be speaking part of the time about Bethlehem Steel, so please, all agency-related members of -- participants of this call, also note whether you have a conflict of interest situation with respect to Bethlehem Steel when you give your name for roll call.

So, beginning with Board Members and the Chair.

CHAIRMAN MELIUS: Yes, Jim Melius, Chair of the Working Group, and I have no conflicts relative to Bethlehem Steel.

MEMBER MUNN: Wanda Munn, Board Member, Working Group Member, no conflicts.

MEMBER BEACH: Josie Beach,
Working Group Member. I have no conflicts with Bethlehem Steel.

MEMBER GRIFFON: Mark Griffon, Member of the Board. No conflicts.

CHAIRMAN MELIUS: Ted and other people, Dr. Lockey will not be able to join the Work Group meeting today. He's had a, he has a -- he's traveling today. He's going to be in a --

MR. KATZ: Okay, thanks. Thanks for letting me know that.

CHAIRMAN MELIUS: He notified me yesterday or the day before.

MR. KATZ: Okay. Thanks. And, I assume, no other Board Members, right?

(No response.)

MR. KATZ: Okay. But, going on to the NIOSH ORAU team.

DR. NETON: This is Jim Neton, of NIOSH. No conflict to Bethlehem Steel.

DR. GLOVER: This is Sam Glover, at NIOSH. No conflict to Bethlehem Steel.

MR. KATZ: Okay, that's quick.
And then SC&A team.

DR. MAURO: John Mauro, SC&A. No conflict with Bethlehem Steel.

DR. BEHLING: Hans Behling, no conflict.

MS. BEHLING: Kathy Behling, no conflict.

MR. THURBER: Bill Thurber, no conflicts.

MR. KATZ: Very good. Thanks, and welcome. Let's go to HHS and other agency officials, and contractors to government agencies.

MS. HOWELL: Emily Howell, HHS.

MS. LIN: Jenny Lin, HHS.

MR. KATZ: Okay. And finally, any members of the public on the line?

MS. HUPKOWICZ: Yes, Ann Hupkowicz, member of the Bethlehem Steel Action Group.

MR. KATZ: Ann Hupkowicz?

MS. HUPKOWICZ: Hupkowicz. H-U-P-K-O-W-I-C-Z. I'm representing [identifying
information redacted].

MR. KATZ: Very good. Thank you.

MS. HUPKOWICZ: You're welcome.

DR. MCKEEL: This is Dan McKeel.

I'm the Co-Petitioner on the Texas City, SEC.

MR. KATZ: Welcome, Dan.

MS. BARRIE: This is Terrie Barrie, with ANWAG.

MR. KATZ: Welcome, Terrie.

MS. BARRIE: Good morning.


MR. KATZ: Welcome, Mr. Walker.

MR. WALKER: Thank you.

MR. KATZ: Terrific. Then let me just remind all the folks on the phone-- all of us, to mute our phones when we are not speaking to the group. If you don't have a mute button, please just use *6 -- *, then 6 will mute your phone, and *, then 6 will unmute it, when you want to speak to the group.

And, please do not put the call on
hold at any point but hang up and dial back in. The hold will disrupt the call for everyone else.

Much thanks, and it's your agenda, Jim.

CHAIRMAN MELIUS: Okay. Thank you, Ted. We have two major items on the agenda for today. One is the discussion of the draft Work Group Board document on criteria for the use of surrogate data. The new draft I circulated earlier this week, and it is dated May 2010, so we'll spend some time discussing that, first.

There is an accompanying updated document from SC&A, I don't think we will necessarily spend time discussing it, though. It's useful background on this general issue, which is, they've updated their inventory on the use of surrogate data in the EEOICPA program, particularly looking at what documents from each site and where surrogate data might be used in dose reconstruction or for those sites.
I believe that was circulated either, I believe, late last week or early this week, from SC&A, but again, it's not something, I don't think, we'll discuss in detail.

And then, the second major item on the agenda will be the discussion of the use of surrogate data for dose reconstruction at Bethlehem Steel. It's called Revision 1, which is a draft paper that-- developed by SC&A, and the revision is, after reviewing the initial draft, I had asked, requested that SC&A address a few issues in greater detail because those issues had become, I think, somewhat more prominent in our review criteria, and I thought having some more detail on those issues, and sort of background, would be helpful to refresh the memory of those of us Board Members who've been around from the beginning, and are familiar with the site, and as well as for our newer Board Members who may not be as familiar, and so understanding that would be
helpful.

So, the -- there's no questions on the agenda. But, I will add, I noticed that Dan McKeel was on, we are not specifically going to talk about Texas City Chemicals today, though obviously some of the discussion we have is relevant because of the proposed use of surrogate data at that site, but really, until we get the criteria addressed, and, as well as, there's the sort of separate issue with radon. It's -- I don't think we can really come to any closure on Texas City, but obviously, the overall criteria have something to do with that.

So--

MEMBER ZIEMER: For the record, Paul Ziener is now on.

CHAIRMAN MELIUS: Okay.

DR. MAKHIJANI: And also, for the record, Arjun Makhijani, SC&A, is now on.

MR. KATZ: Welcome, and you might just want to note, also, that you have--

CHAIRMAN MELIUS: Ted, we sort of
lost you there.

MEMBER ZIEMER: I didn't hear what was said.

MR. KATZ: I'm sorry. I was just asking for Dr. Ziemer, and for Arjun, you should note your situation with respect to conflict of interest for Bethlehem Steel.

MEMBER ZIEMER: No conflict for Ziemer.

DR. MAKHIJANI: No conflict for Arjun.

MR. KATZ: Thank you.

CHAIRMAN MELIUS: So the draft document on the criteria for use of surrogate data. I've made a number of changes in response to our discussions at the last Board meeting, where we had presented an earlier draft of that and made changes.

I will briefly go through them. They are not, you know, huge changes, but I think they do add greater clarity to that, and I took out some of the, what proved to be, confusing statements.
I think the first change is related to the hierarchy of data, that's number 1 on the first page. And going back through past transcripts and comments on the draft, I think we were confusing ourselves or confusing me. We were, at some trouble talking about the hierarchy of data, and deciding whether something was going up higher or lower because some people it was -- we had different reference points for higher and lower.

So, it just didn't, I think we were -- not everyone was meaning the same thing when they meant higher and lower. And actually, David -- beyond that, David Richardson, I think, had some good comments that he made at the last Board meeting in response to this, where it's not just the hierarchy of data, but it's also the quality, relative quality of data within different parts of the hierarchy, so to speak.

So that, simply because you would have personal monitoring data, if you had bad
personal monitoring data, you might very well want to replace that or supplement that with, you know, processed data or coworker data, if that was much better, even though you were sort of, you know, using a lower quality, relative to how we normally deal with that.

So I think I've just clarified that the hierarchy of data is something that you look at, but it's not, sort of, an absolute rule. And obviously the quality of the data, different parts of the hierarchy are important.

MEMBER MUNN: Jim, may I say something about that, before we go further, or do you want to go through the entire document?

CHAIRMAN MELIUS: No, you are welcome to interrupt me at any point in time.

MEMBER MUNN: This first item, the hierarchy of data, is actually the only one in this particular draft that does not read well to me and does not really make sense.

For example, we're stating that
the usual hierarchy of data should apply to dose reconstructions for that site, but at no point in this document, unless I've missed it somehow in my reading and rereading of it, at no point do we state what that hierarchy is. And if this is going to be a standalone document, for example, the second sentence says, "individual worker monitoring data is preferable to workplace monitoring data, et cetera."

Well, I guess, the "et cetera" may be clear to everyone else reading it, but it's not fully clear to me. I suspect that there are a number of different concepts of what that hierarchy is out there, in both, on the Board and in the worker groups, and in the general public.

And it would appear logical that we state what that hierarchy is at some point in this document. Hierarchy of data seems to be the proper place for it, in my view.

CHAIRMAN MELIUS: I don't have any problem doing that. I assumed that we all
thought of it in the same way and that it 
wasn't necessary to do that, though you, if 
you think it would improve things to state it, 
it's, it's fine. I think the change I was 
making -- for clarity, there's no problem with 
that. Before we had a sort of absolute rule, 
or more of an absolute statement about when 
would, you know, data from one place -- the 
hierarchy, replace another data, or should be 
considered.

And again, I thought David 
captured that very well, that it's usually 
more complicated than just the issue of where 
is the data in the hierarchy. It's also the 
extent and the quality of that data, within, 
you know -- that is available, and --

MEMBER MUNN: A point which we 
cover well, I think, later in the document. 
But nowhere in the document is it clear what 
we're talking about when we talk about 
hierarchy. And the last, the last sentence 
says "it should only be used to replace data 
if the surrogate" -- I am assuming "it" means
"surrogate data"—should only be used to replace other data, if the surrogate data has some distinct advantages over available. But it was not crystal clear in the reading.

CHAIRMAN MELIUS: I will -- I can't promise crystal clarity, Wanda. But I will try to make it more robust, I don't want to use that word.

(Laughter.)

MEMBER MUNN: Well, thank you, Mr. Falstaff.

MEMBER ZIEMER: This is Ziemer, and I assumed on the hierarchy, where it said the usual hierarchy, I think we are talking to the stated NIOSH hierarchy, which is, the personnel monitoring data is the top of the hierarchy, and then you have the workplace monitoring, and then you have source term, and so on. Now, is that the list we're talking about?

MEMBER MUNN: That's what I was talking about, when I, when I see "et cetera," that's what that means to me, but I have no
idea what it means to other people. And as I
said, if this is going to be a standalone
document, we probably should make that
clearer.

MEMBER GRIFFON: Yes, this is Mark
Griffon. Might just consider cross
referencing the regulation on that, or pulling
the language right out -- you know.

CHAIRMAN MELIUS: Yes, I believe
it is in the regulation --

MEMBER GRIFFON: Yes, I mean, that
way, everyone is clear that, that you know,
that is the hierarchy we are talking about.

CHAIRMAN MELIUS: Yes. And I --
The confusion was, that actually we had
conflicting comments in various drafts from
Dr. Ziemer, from Wanda, about higher or lower
in the hierarchy, and in some cases it wasn't
-- one would say that, you know, individual
monitoring, personnel monitoring was the
highest. But then people would say they're
going higher. You would go -- but so, it was
also the first, and then they would go to the
second, well is that going higher or going lower?

MEMBER ZIEMER: Oh.

MEMBER MUNN: Lower.

CHAIRMAN MELIUS: If we were, well, we were saying it differently.

MEMBER MUNN: Exactly.

CHAIRMAN MELIUS: Yes. So I thought it was best to -- and again, as David Richardson pointed out, it's not an absolute criteria, it also has to do with the quality of the data toward different places in the hierarchy, when under consideration.

MEMBER ZIEMER: This is Ziemer again. In regard to Dr. Richardson's comment, which I think is a good one, I assume that one could, at least in principle, consider cases where you would go to a lower hierarchy item of better quality over a higher one of -- if I'm going in the right direction, of lesser quality. One could consider that.

CHAIRMAN MELIUS: Yes.

MEMBER MUNN: Which is what the
last sentence says, actually, as long as "it" means "surrogate data".

MEMBER ZIEMER: Yes.

CHAIRMAN MELIUS: But I will clarify hierarchy.

MR. KATZ: This is Ted Katz. I'm sorry to interrupt, but someone on the line is washing dishes while they're listening. If they would please mute their phone, use *6 if they don't have a mute button, that would be helpful for everyone else who is trying to listen. Thank you.

MEMBER MUNN: Or maybe they're in their workshop.

MEMBER ZIEMER: They may be sawing wood instead of washing dishes.

MEMBER MUNN: Yes, that's true.

CHAIRMAN MELIUS: The, let me find my place in the old draft. The other changes, though, and then we can go back and take comments on other parts of it, because -- is really in the last paragraph, starting, you know, "claimants will have significant
concerns about credibility," so forth.

I think that, using the earlier draft, some terms like "it should be rarely used," and something to that effect, and I changed that, and --

MEMBER MUNN: Reads better, now.

CHAIRMAN MELIUS: Used some other terminologies more consistent with how we've done it before. I think it's particularly in the last sentence of that paragraph.

MEMBER MUNN: Yes.

CHAIRMAN MELIUS: Of that --

MEMBER MUNN: Improved.

CHAIRMAN MELIUS: Yes. Those were the two sort of major changes. People had made a number of, some were grammatical, some were wording changes, and I've made all of those, I think. I believe Dr. Lockey had offered some and Wanda and others.

MEMBER ZIEMER: Dr. Melius, Ziemer again. Just for clarity, what is the date on the draft that you are looking at? I am wondering if I'm looking at the same draft.
CHAIRMAN MELIUS: May, 2010. It's a draft that I sent out on Monday.

MEMBER ZIEMER: Thank you.

CHAIRMAN MELIUS: Any other comments?

MEMBER MUNN: No, I think it reads well.

CHAIRMAN MELIUS: Mark, do you have any? Or Josie?

MEMBER BEACH: No, this is Josie. I think it does read well.

MEMBER GRIFFON: No, no additional comments.

CHAIRMAN MELIUS: Okay. So if it is okay with the Work Group, then what I will do, is either later today, or more likely, tomorrow morning, when I get back to my office, I will circulate this to the entire Board.

MEMBER MUNN: Are you going to play with number 1 first?

CHAIRMAN MELIUS: Yes.

MEMBER MUNN: Good.
CHAIRMAN MELIUS: Yes, good point, Wanda. I will do that and circulate to the, to the full Board, and we have a Board meeting, we have a time set up, I believe, on the first day of our meeting on Wednesday. Is that correct, Ted? For discussion of this -- of these criteria. And, I think, hopefully we will be able to adopt them.

MR. KATZ: That's right.

CHAIRMAN MELIUS: Now, Will, and I don't know, if Jim Neton or Ted want to say anything. My understand is also, it will, I think we tried to set it up in a way that we'll be able to consider this. NIOSH is also, I don't know whether it is changing, or elaborating on their criteria for the use of surrogate data, in, at least in the context of the discussion that will come up about the Hooker Chemical Plant.

Jim or Ted, could somebody elaborate on that, or am I --

DR. NETON: Yes, this is Jim Neton. I am not, I am not familiar with what
you are talking about. We have our IG-004 in place, and right now, it's not under revision.

MR. KATZ: Jim, this is Ted Katz. I know what Dr. Melius is talking about, which is because we had this discussion with Stu, and I think, Jim, Stu's point is that the presentation of Hooker, a discussion of that, I think, is good fodder for sort of coming to sort of consensus terms between Board thoughts and the Agency thoughts about surrogate data.

DR. NETON: Okay. Yes, I am familiar with that. That doesn't involve any revision to IG-004, it's just really our thoughts on how Hooker would apply, using our principles that are outlined there.

CHAIRMAN MELIUS: Yes, how the IG-004 would apply to Hooker, I guess.

DR. NETON: Exactly.

CHAIRMAN MELIUS: Yes, okay. That was -- but initially, we'll have, I believe we've set up so we initially have that discussion and then it will be followed by the discussion of more criteria. So, I think we
will -- again, I think that should help us to sort of reach some consensus and wrap up, at least this part of the issue. I think the next step is application.

Good. If there are no more points on that, the next issue is the Bethlehem Steel, again it's the second document, that I believe was circulated, maybe even yesterday, called Revision 1, on the Use of Surrogate Data for Dose Reconstruction at Bethlehem Steel.

And what we had asked SC&A to do was to -- in the context of the Bethlehem Steel SEC request, Petition, and the NIOSH evaluation thereof, is to then consider the, the application of -- I won't say they are the final criteria, but the, at least the draft criteria we had as the last meeting. Applying those -- review of Bethlehem Steel relative to those criteria. I think, not as much, I don't think the application of those, or does it, you know, fit or not fit, but as much as, the information that would be helpful in making
that, that evaluation.

And what I, when I had seen the first draft, I didn't think that there was enough information on the, the workplace plausibility issue. Were the, were the similar -- for Bethlehem Steel, they used data from Simonds Saw and the, you know, trying to basically summarize information on those two facilities in terms of, how would, you know, how did they compare, for the time periods involved.

And so, I believe most of the change that was made from the first draft to the Revision 1 draft of the SC&A document was an elaboration on that. I think, as you all know, and Josie, I don't know if you were -- I believe you were on the Board then, but we spent a lot of time on Bethlehem Steel very early. The, actually, most of the discussion of the Bethlehem Steel Site took place before the SEC regulations were in place.

And so we had spent time reviewing that. Then, after that point in time, the SEC
regulations were put in place. The Board, there was a Petition received and qualified from Bethlehem Steel, and because at the same time we had just started looking at this surrogate data issue, that, really was, in some ways, Bethlehem Steel was the impetus for us saying we needed to get criteria for how we would look at surrogate data in this, the use of surrogate data in this program for, you know, for primary dose reconstruction.

MEMBER BEACH: Jim, this is Josie. Thanks for that history review, I appreciate it.

CHAIRMAN MELIUS: Yes. Yes, I know, it's a long history, and a lot of time. And a lot of us were familiar, though as I said, this is SC&A sort of refreshing our memory, as well as people that weren't involved with that.

So, John, I don't know if you want to briefly go through the report?

DR. MAURO: Yes, I will give you the brief overview of what emerges from our
work and ask Bill Thurber to give a little bit more detail.

When we went through the process, basically providing the information that's necessary that you would use to judge the degree to which the use of surrogate data is consistent with the May 10th draft criteria document on surrogate data, what emerges from that in our comparison, I think, is that there is a favorable comparison in terms -- when I say favorable I mean there is lots of information provided that goes toward each of the issues.

The degree to which one concludes that it meets a threshold of acceptability, that's a better way to say it, is certainly a judgment call, especially with regard to plausibility.

So at the end of our analysis, I think there are two important things where a degree of judgment is called for. With regard to plausibility, in our mind, there is very little doubt that the concentrations -- oh, by
the way, the essence of, of the use of surrogate data at Bethlehem Steel really boils down to, in the early years at Bethlehem Steel, there was very little or no data on airborne dust loadings. And it was an important time, when they were very, when there was some uncertainty about how much actual machining of uranium took place, especially in 1949, whether any machining took place, and the degree to which it took place.

Nevertheless, it was necessary to -- it was determined that, yes, we will try to reconstruct the doses to workers that might have been there in 1949 when there was, there might have been some machining going on of uranium at Bethlehem Steel.

How we go in to place the plausible upper bound, that was the challenge to NIOSH. And what NIOSH did is drew from Simonds Saw at the source of air sampling data. And when we reviewed it then, at the time when it came up, and again now, from the new perspective of now having some criteria in
front of us, the -- it is very clear that the
dust loadings that were experienced by Simonds
Saw, in the early years especially, before
they instituted controls of any substance,
represents some very, very high concentrations
of dust, concentrations that certainly would
appear to be bounding, and for any conditions
that might have been encountered for rolling
operations at the place, at Bethlehem Steel in
the early years.

So we concluded that, yes, the air
dust loadings from Simonds Saw certainly
bound. Now, the question of plausibility
comes in. Are they so high, and were the
conditions so different, that it's really --
it could not have been that high, and it does
not meet the test of plausibility. And we
left at, we were not conclusionary regarding
that in our latest report. We just tried to
place all the information before you as best
we could.

I think we are conclusionary that
there is no doubt that the Bethlehem Steel --
that the Simonds Saw air dust loadings are high end values, and certainly bound any exposures that workers at Bethlehem Steel might have experienced in those early years. Whether or not those are plausible and you consider that to be over, now we are getting into a, very much a subjective judgment of degree of plausibility.

I would like to say, though, that when we sort of put other sites through a similar test, this is -- the use of the data in this capacity is not, does not stand out as being clearly implausible, as compared to other places where surrogate data were used.

In other words, in the past, surrogate data was used in many settings. And in each one of those settings where it was used, one could always raise the questions: was it bounding, and was it plausible. There was nothing about this that one would say it stood out as being some, you know, really off the charts in terms of plausibility. It was very much within what I would consider to be
the envelope that we have experienced in the past.

So that was the one place where, you know, an important, I guess, aspect of what our report has to say. The other part that is important that we felt, I guess, really did not pass the plausibility test as we -- not plausibility, the surrogate data criteria test that we now have before us, has to do with the way in which dust loadings were determined for when cutting the cobbles.

One of the steps that took place during Bethlehem Steel operations is, these rods got tangled up and they needed to be cut. And it is recognized that that cutting operation could result in airborne dust loadings. In the later years, let's say around 1952, that had a greater potential than the dust loadings from rolling operations. So you could almost envision that, no longer were the rolling operations the limiting process, because of improvements in the way in which the rolling operations took place.
And all of a sudden, it turns out there were other things going on at Bethlehem Steel that may have all of a sudden become more-- had a greater potential. And it was judged that these cutting of the cobbles might very well be a dust loading that could be even more severe than the dust loadings one would experience in the later years at Bethlehem Steel. And we found that that particular operation really did not meet the criteria, the full array of criteria.

So I would say the outcome of our investigation is that one aspect of the use of surrogate data was the one place where it did not fully meet or did not meet the array of five criteria that have been set forth now in the draft.

So, I mean, that's what I, that's what I walk away with, with our, the work we've done to date. We certainly can answer any questions, and Bill, please feel free to clarify or amplify anything that I just said.

MEMBER MUNN: This is Wanda. I
have question, first thing. As I was reading through the document, I kept trying to imagine why cutting the cobbles with a torch would be a major concern with respect to dust. Now I could imagine if you had a cutting or a grinding operation, but cutting with a torch, why is that seen as being a major dust concern?

DR. MAURO: I'll take the first cut at it. All torch cutting generates fumes --

MEMBER MUNN: Yes, yes, I know.

DR. MAURO: So it's really not a particle, it's more of a fume.

MEMBER MUNN: Right.

DR. MAURO: And these are very, very fine particles, and in the analysis, certain assumptions were made of the particle size, which I believe does have some basis in knowledge of what kinds of particles are generated when you cut, when you go through a, use an arc cutting, technique.

As far as the dust loading, that's
where -- or the fume loading, that's where, you know, there really is not very much development of the degree to which it meets the criteria. And where we said that, unlike the other places where surrogate data were used, where there was a great deal of development, why was reasonable, or if not bounding, to use the data from Simonds Saw, the assumptions that were used for that particular exposure scenario were not developed as well.

DR. MAKHIJANI: This is Arjun. Could I amplify on that, unless Bill Thurber wants to amplify on it first, since he was the author of this? Bill, are you on the line? (No response.)

DR. MAURO: Bill may have had to step away.

DR. MAKHIJANI: Okay.

DR. MAURO: Let me, can I, excuse me, let me just interrupt, when we -- before the call, Bill, before this call, Bill called that he would be on at 1:00, but he was going
to be calling from a doctor's appointment office, and he may have to stay away. So apparently he stepped away.

DR. MAKHIJANI: I was involved in working on this question when we were reviewing the Site Profile, and I think, I think there's some more work that was done than what's just been described. I mean, there were two aspects to coming up with the air concentration of this.

One was the work done by two consultants to SC&A as to how much dust loading can there be in a room and have people still work there for long periods of time, for the work day. And that was about thirty milligrams per cubic meter.

And the second thing was the number for cutting was derived from stainless steel cutting. There were no -- the hesitation about surrogate data is, there were actually no data for uranium cobble cutting of any kind that went into the calculations. So, you know, stainless steel and uranium are
different metals, and of course, their properties, presumably under circumstances of cutting, would be somewhat different. Uranium is pyrophoric, and so on.

There had been some discussion as to whether you would ever cut uranium with a torch, although workers testified to that effect. So it was kind of a fairly complicated discussion.

CHAIRMAN MELIUS: This is Jim Melius. Just to add, I mean, having spent some time in steel mills and sort of similar heavy industrial facilities, and I will say that, you know, this sort of flame cutting does generate a lot of fumes.

MEMBER MUNN: Yes, I understand fume. Fume, however, and -- doesn't translate directly to dust loading. Nor does, I am not sure, there must be data somewhere relative to the difference in what kind of protection one can expect in direct breathing zones that you get in other parts of metal handling, as opposed to cutting operations where one
certainly would anticipate that the individual doing the cutting would, at the very least, have a full face mask.

So how much of the, of the off gas would be a matter of concern, surely has been looked at, somewhere, sometime.

DR. MAKHJANI: When we -- this is Arjun. When we interviewed the workers, to my memory, and I would go back and actually look at those interviews, there was no indication, and I think that any respiratory protection was worn at Bethlehem Steel.

MEMBER MUNN: No, I am not saying respiratory protection, I am just saying full face masks for the welder.

DR. MAKHJANI: Eye protection, maybe, I don't know. The, the fume data are really dust data that appear as fume, because they're very fine dust particles. That's the main difference between the fumes and the dust loadings. So it did in effect, the dust loadings, where the mask is concerned, but you see it differently.
MEMBER BEACH: Well, a fume is a particulate.

DR. MAKHJANI: Yes.

DR. MAURO: In fact, I believe NIOSH, and certainly confirm this, used a much smaller particle size --

MEMBER MUNN: Sure --

DR. MAURO: In that particular part of the analysis. To reflect the fact that fumes generally are finer. But the -- as Arjun pointed out, information, as it applies specifically to cutting these cobbles, you know, the degree to which we have parity that is -- that we can justify that it works well as surrogate data, you know, that's where we found it weak. I mean, where we found that, unlike the other aspects of the use of surrogate data, where there was a great deal of technical development, of why it was appropriate to use the surrogate data, this particular aspect, this particular scenario, that's one of the places where we felt --

MEMBER MUNN: We do have clear
information, do we not, regarding the number
of cobbles? That would have been a major
production issue.

DR. MAKHIJANI: Yes, I think NIOSH
actually had a table in its --

MEMBER MUNN: I seem to recall
that at one time we discussed the fact that
the number of cobbles was relatively low,
which would mean that the number of
individuals who would be involved in disposing
of the cobbles would accordingly, be very low.
Okay.

DR. MAURO: I think it's important
to keep in mind, what happened was, as time
went on, and they used salt baths, and they
improved the techniques for the rolling
operation, and the dust loading, as actually
measured with real data, at Bethlehem Steel,
as the numbers came down, the possibility
emerged that, well, perhaps there were other
things that took place at that, those later
years, where the dust loading may have been
worse for those other activities.
And it was judged that it was possible that that cutting of cobbles might have been something important to look at. So that came into the picture as being, perhaps a limiting scenario, when the other scenarios became less important. And so, NIOSH made an attempt to explicitly address that, that aspect of the analysis. And, taking into consideration, I think, the number of cobbles that were cut.

But of course, the problem is, to say we've got surrogate data, you know in a perfect world we would have had air sampling measurements taken Simonds Saw of cobbling cutting with these settling torches, but we don't have that data.

MEMBER MUNN: Well, in a perfect world, we wouldn't have had cobbles.

DR. MAURO: Yes, yes.

DR. MAKHIJANI: Let me just say two things. I think, one is, there were no surrogate data of the Board at the time the analysis was done, so, in fairness to NIOSH,
and also to much of the interviewing and
development of -- you know, that we did during
the Work Groups, these numbers as claimant-
favorable, which we believe they are, as John
has said, were developed outside of the
criteria that the Board is working with on
surrogate data.

So this particular report, as Dr. Melius was explaining, was developed not so
much -- so we've reviewed the old claimant-
favorability and come out in the same place,
more or less come out in the same place. But,
there are these additional workplace
plausibility questions and in that regard, I
want to add one more thing that I think John
skipped over in regard to the `48-`49 period,
is that, you know, since there is no
documentation from the `49-`50 period, since
NIOSH just assumed that the claimant-favorable
matter from a later document, that rolling had
occurred there.

So we have no documentation from
the time, and so there is no direct comparison
possible. So the numbers that were used for assigning intakes in '49-'50 are very claimant-favorable with respect to the dust data from '51 and '52 for Bethlehem Steel. And that should be borne in mind.

And then there were some specific similarities between the Simonds process and the Bethlehem Steel process, they were both rolling uranium, they both had rolls, they were somewhat -- they both had poor to no ventilation, but there were some very specific differences, not as a judgment of whether the numbers were claimant-favorable, because we believed they were.

But there were some process differences. At Simonds Saw, there were mostly things going on that tended to generate more dust. It was an older mill, uranium was being dragged across the floor. And Bethlehem Steel was a newer mill.

So the question arises, that even though the numbers are claimant-favorable, are the similarities enough to justify, or are the
differences big enough that you want to make a
different judgment call with surrogate data
criteria, even though the numbers look very
claimant-favorable from everything we know.

MEMBER MUNN: Yes, your report
covers that very well, Arjun. One of the
questions that I may have missed in my re-
review is the question of, since cobbles have
jumped up to be the bogeyman at Bethlehem,
Bethlehem is doing this rolling in '49, '49
and '50, if they were at all, on obscure
weekends. And Simonds Saw is moving through
their process all the time.

Do we -- I do not recall, and I
didn't go back to look at the Simonds Saw
report, with respect to cobbles at Simonds
Saw.

DR. MAKHIJANI: Well, our original
judgment has been that cobbles were much more
unlikely at Simonds Saw, though I have not
looked for cobble data for Simonds Saw, nor
interviewed workers there, and Jim Neton or
NIOSH may know.
This is partly because of only two rolls, rollers at Simonds Saw and six at Bethlehem Steel, and the Bethlehem Steel throughput, the amount of uranium going through per unit time was significantly greater than at Simonds Saw. But I don't have the numbers from Simonds Saw.

MEMBER MUNN: Oh. I thought the reverse was true.

MR. THURBER: Arjun, this is Bill Thurber.

DR. MAKHIJANI: Hi.

MR. THURBER: Hi. I agree with what you said, and I think that the big difference is that at Bethlehem Steel, the transfer of the uranium bars from one mill stand to the next was on, essentially, rollers, and it's -- the cobbles occurred when the transfer of the physical movement of the uranium bar from one mill stand to the next got jammed up.

And there wasn't a similar arrangement at Simonds. As I understand it,
they basically wrestled the uranium to a mill stand and grabbed it on the other side. And so the probability of having cobbles would be quite small at Simonds as compared to Bethlehem.

DR. MAKHIJANI: Yes. And, Ms. Munn, just to clarify one point, the monthly throughput at Bethlehem Steel was lower than the monthly throughput at Simonds Saw. It was 75 tons compared to 200 or 300 tons --

MEMBER MUNN: Yes, that's what I was going to say.

DR. MAKHIJANI: But they were only working one weekend or two weekends a month, something like that, whereas Simonds Saw was working most of the time --

MEMBER MUNN: Yes. All of the time.

DR. MAKHIJANI: So the per hour throughput through the mill, which is what I was referring to, was greater at Bethlehem Steel. Per hour, not per month.

MEMBER MUNN: Yes. But the number
of hours was markedly different.

DR. MAKHIJANI: Right.

MEMBER MUNN: Much lower.

MEMBER ZIEMER: But there was--this is Ziemer. There was some cobble cutting at Simonds, is that not correct?

DR. MAKHIJANI: We, we haven't, I haven't looked at that. I haven't been involved in our review of Simonds. John, do you know --

DR. MAURO: I have to say, I do not recall discussing Simonds Saw cobble cutting. Bill, you were the one who probably looked at this last.

DR. GLOVER: Hey, John. This is Sam Glover. I was -- I spoke to the Simonds Saw and Steel workers last week.

DR. MAURO: Oh, there you go.

DR. GLOVER: There -- as they've described, because it was a hand-run operation, the cobbles didn't occur at Simonds, and so when we spoke to them, there was no equivalent cutting, torch cutting of
this material, because they just didn't -- the process was too dissimilar.

They certainly would have used, for cutting up material they used a -- they had a cutoff saw. We have pictures of that, the folks who were out with me when they had to cut these materials up, but there was no equivalent process.

MEMBER MUNN: Do you have -- do we have any dust data from where they were doing their cutting? That would be informative.

DR. GLOVER: There is cutoff saw dusting, yes.

CHAIRMAN MELIUS: This is Jim Melius, a few comments, just --

COURT REPORTER: I'm sorry, who was that before you, Mr. Melius?

MEMBER MUNN: That was Wanda.

CHAIRMAN MELIUS: That was Sam --

MEMBER MUNN: And Sam --

CHAIRMAN MELIUS: And before that Sam Glover. That was the new voice.

COURT REPORTER: Thank you.
CHAIRMAN MELIUS: That new voice was Sam Glover, I believe. Just -- they're not all to the same subject, but one is just a reminder that, not only did we not have sort of surrogate data criteria under development at the time we did Bethlehem, we didn't have SEC regulations, so when we were dealing with Bethlehem Steel we were, I would say, struggling to try to fit it into the dose reconstruction process at the time, and the only way that it seemed -- appeared to be feasible for doing that in any way was through the use of the Simonds Saw data.

So we didn't know if there were other data, and whether or not we would have handled it differently, you know, if it had been first considered afterwards, you know, it's just speculative.

The second comment I have is that, what does strike me in comparing the two facilities, is, that there are, there are differences. And I think it points to how, you know, differences, and the type of mills,
I mean, they're both rolling 16 inch versus 10, different operations and so forth, and what strikes me, is how difficult it is to compare these facilities in the way that we want to be able to compare them. Now, as I say, it can't be done, but it is, I think, difficult.

And the third comment was really just a follow up to what Wanda just said, is, you know, I -- ideally, even if we didn't have, you know, uranium data, or whatever, whatever we were looking at in these situations, there might be other data that would help us to, you know, dust data, or whatever, to compare these two facilities, and have a general idea under, you know, similar operations, would they, you know, lead to similar exposures.

And though my fear is that, that, you know, there wasn't, in this industry, and particularly in this time period, there was not a lot of routine monitoring done, because there weren't the kind of regulations we have
today, and even today, unless you are trying
to regulate -- you're regulating specific
exposure, there isn't a lot of other
monitoring that would be done.

And I just think it's going to be,
it is going to be very difficult to try to,
you know, this workplace plausibility, how
similar are these two facilities, how similar
will the exposures be, is, is difficult.

MEMBER BEACH: Jim, this is Josie.
Is the difference in the ventilation a very
large factor in this, also? Between the two
facilities?

CHAIRMAN MELIUS: I am not
familiar with, with Simonds Saw. We've --
with Bethlehem, our discussion since I think
it's in the tables, said there was relatively
little ventilation, particularly during the
period when these operations took place.

DR. NETON: This is Jim Neton.
The ventilation -- the data that we used at
Simonds Saw was the very earliest data before
they updated their program and installed
ventilation. They did have one small hood over what they called the quenching station. Outside of that there was no active ventilation in Simonds Saw, and the workers attest that there was no ventilation at Bethlehem Steel -- no active ventilation.

DR. MAKHIJANI: Particularly in regard to ventilation, Jim is exactly right. We found that they were pretty much comparable. One had a little bit of ventilation, but not over the rolling stations and --

MEMBER BEACH: Oh, okay.

DR. MAKHIJANI: They were comparable in regard to ventilation. I mean, the physical arrangement, you know, one was a rather larger building and room at Bethlehem Steel, and Simonds Saw was much more constrained and a smaller place. And so, they weren't exactly comparable in terms of how they were arranged, but the ventilation wasn't a huge difference, I don't think.

MEMBER MUNN: The question seems
to boil down to the plausibility of the activities surrounding the cobble sawing issue, and if there --

(Whereupon, a momentary interference in the connection rendered the participant's statement inaudible.)

MEMBER MUNN: I'm not hearing that.

CHAIRMAN MELIUS: Yes, I'm not -- a bad connection.

MEMBER MUNN: I can't hear that at all.

MEMBER ZIEMER: This is Ziemer. I can't understand that last comment, either.

CHAIRMAN MELIUS: I think it's outside interference.

MEMBER ZIEMER: Oh.

MEMBER MUNN: No wonder we can't understand it. It's worse than the material we are looking at.

(Laughter.)

MEMBER ZIEMER: This is Ziemer again. Let -- in relation to what Wanda was
talking about, let me ask SC&A, do we have any
-- the suggestion, I think, was that perhaps torch cutting of the cobbles might generate higher aerosol loads than the other activities. Are you sort of raising that as a possibility, or do we have data from other types of cutting that would suggest that that is, in fact, the case, or is it just raised as a possibility?

DR. MAKHIJANI: Dr. Ziemer, the data -- Jim Neton actually worked on a lot of this, so I would defer to him, but there was stainless steel cutting data that went into this, but no, we don't have uranium data.

And so far as the surrogate data are concerned, that's sort of the big issue, is we have no uranium data to use. And, while I think we were all in reasonable agreement that the result is claimant-favorable, but the judgment in this context is, what do you do if there is no uranium cutting data.

And then, the other sort of issue that is in the report that is a judgment issue
for you in the working group and the Board is on page 14, in regard to the workplace comparability for all the various things we were just talking about in response to Josie's questions.

MEMBER ZIEMER: Right.

CHAIRMAN MELIUS: Any other questions or comments?

MEMBER MUNN: No, my -- I would be interested in knowing if, even if it were only one data point that we might have from a physical sawing operation at Simonds, that one data point might be helpful in addressing the plausibility issue.

DR. NETON: Wanda, this is Jim. We do have sawing data. My recollection is, it is substantially lower than the thirty milligrams per cubic meter that we have used for the cobble cutting operation.

MEMBER MUNN: That was my memory too, Jim. It's one of the reasons why I thought since, since we seem to be focusing on the plausibility of oxy-acetylene torch
cutting and actual grinding cutting, it seems that if we took a look at the dust loadings from physical grindings operations, that it would at least give us a point of consideration for the feasibility question. Plausibility is going to end up being a judgment call, in any case.

DR. MAURO: Yes, I'd -- this is John. I think that what we have here, is the way in which we are approaching these problems now, under the new criteria, is this is actually a window that we are trying to create, that says "Okay, it is high enough."

The way we are approaching the problem with surrogate data, or with our models, et cetera, is that it is high enough that we feel comfortable that we're -- we've placed a reasonable upper bound on it. All -- every worker that worked there. But not so high that it doesn't -- as the words indicate in the write-up. So it's almost a window.

MEMBER MUNN: Yes.

DR. MAURO: As it both cases, each
-- the top of the window and the bottom of the window, is a subjective judgment call, that collectively we have to -- not we, you, have to feel comfortable with. That we've found that window, and that the number that was picked is, you know -- falls within that window, and it's a very difficult judgment.

You know, we put upon ourselves requirements, thresholds of acceptability that are difficult. But, you know, we would try to give you the place where, I think the data -- here's the data we have, here's where they came, where it comes from.

In the case of the cobble cutting is the place where the amount of data and where it comes from -- and that was selected for use -- really went toward placing an upper bound --

MEMBER MUNN: Yes --

DR. MAURO: That is, picking a number that, you know, everyone would agree, it really can't be higher than that. For the reasons that Arjun just explained.
Now, have we gone above the upper end of that window, where was -- you know, that only is an upper bound that really, for that particular operation, is not plausible. And that's the burden that we have placed on ourselves, is that, have we, you know, have we gone too high.

And I think that there are other circumstances where we are running into that. So plausibility has put, has put this, made this an appropriate challenge, but it is quite a challenge.

CHAIRMAN MELIUS: But I would go beyond that, because I think that there is also, with a surrogate data issue, a sort of an additional criteria, a related criteria, which is, are these two facilities so different, and the kind of, you know, data we have to compare the two facilities so meager, that we just can't tell whether or not that, that upper bound is, you know, plausible.

MEMBER MUNN: Well, I would propose that the bigger question is not
necessarily these facilities, but the materials which are generating the radiation that we are concerned with. As long as you are dealing with similar materials and there is a similar activity going on, then you have a valid basis for comparison, it would seem.

CHAIRMAN MELIUS: I strongly disagree, because I believe that the facility and that the way that they are handled can significantly affect the exposures. I mean, there is lots of industrial experience to back that up, and it's -- you know, does it happen all the time? No, but it, there is lots of situations where it, where it does. There is lots of factors that go in, I mean ventilation is sort of the common one but there's lots of others that, that can, and --

MEMBER MUNN: Oh, no-one would argue that, Jim. Certainly not. But my point is, unless you are dealing with the same type of materials, and what I've been hearing here today is, we don't have information about cutting uranium in other places, and then I
hear, "yes we do have. We are cutting uranium at Simonds Saw, also."

So my point is, we need not discard all of the information that we have, simply because the processes are not exact. It's also of enormous importance to be aware that the materials with which you are working are the same. And if we have that, then we have one more step toward defining the plausibility that we need.

MEMBER ZIEMER: There is -- this is Ziemer again. There is one other thing that we have in this particular case, because we are in a sense looking back, rather than at a site where we are trying to decide how to move forward. We have a site here that some decisions were made quite a while ago, and dose reconstructions were done.

On uranium aerosols, the biological endpoint is lung cancer. In fact, I'm not sure we see, even in the miners, anything that's elevated except lung cancers. Radiobiologists might correct me on that,
but my question is, do we have any claimants with lung cancer at this site that haven't been compensated? If that were the case, then we might ask, why not. But it seemed to me, we had a very high rate of, of compensation, which sort of indicates that the issue of scientific, sort of fairness, has been addressed.

CHAIRMAN MELIUS: I -- Dr. Ziemer, I would strongly disagree with that, I think that's --

MEMBER ZIEMER: With, with what?

CHAIRMAN MELIUS: With that as a, as a test for this, whether it is fair or not.

MEMBER ZIEMER: Well, what I'm saying is, for example, if you came out with only a few lung cancers being compensated, that might raise the question of whether or not the dust loading that had been assumed were adequate were --

CHAIRMAN MELIUS: Okay, I--

MEMBER ZIEMER: I think that we
all felt at the front end of this, that they were in fact, possibly way beyond what might be really be credible, but maybe not. But, in any event, we thought they were very conservative. And then the test of that in a practical way is, what is, what is the bottom line in terms of the compensation decisions.

You know, you can certainly have a, you can have assumptions that are so great that you are going to compensate everything anyway, and they are not really scientifically feasible. I think even SC&A has raised this a few times, that we've overdone it on other sites.

But, I'm just thinking of it as a practical point of view, if the fumes were greater, would we have, would we be -- for the cobble cutting -- would we be compensating more lung cancers, that's sort of the question I am asking.

CHAIRMAN MELIUS: Well, I think we ended up, I understand your comment better now, but I don't think we've separated out
the cobble cutting, I think everyone ends up getting the same --

MEMBER ZIEMER: Oh, yes. They do, but I think -- I understood SC&A's suggestion was that maybe the, maybe the numbers that we've assumed are inadequate because the cobble cutting has not been fully taken into consideration --

DR. NETON: This is Jim Neton. Just a point of correction. The cobble cutters do receive a different exposure than the general workers. It's more relevant in the 1951 and '52 period, where the actual air measurements that we have are much lower, and so, you know, we assume, I think a two hour per day cobble cutter exposure at 600 times the maximum allowable air concentration, compared to, I think the general plant conditions were somewhere around 20.

CHAIRMAN MELIUS: Okay.

DR. NETON: In 1949 and '50, though, I think the air concentration at general plant was 550 max, and the cobble
cutter received 600, there is almost no
difference.

CHAIRMAN MELIUS: Yes, okay.

MEMBER MUNN: If there were, in
fact, cobble cutters going on at that time.

DR. NETON: I think there were
cobble cutters. Sam has actually talked to
the one guy who said he was the cobble
cutter.

MEMBER MUNN: Yes.

DR. NETON: But that's a different

MEMBER ZIEMER: So you are
allowing for that, then.

DR. NETON: Yes, yes.

MEMBER ZIEMER: Okay. I had
forgotten that.

CHAIRMAN MELIUS: Any other
questions? Or, any other -- I mean, all this
information, the report and the refreshing of
our memories, or being introduced to this
site is all very recent, or we just,
literally just received -- are there
information needs that would be helpful for our meetings next week where we discuss this? I mean, I think we've identified some already, but are there others that anybody hasn't --

(No response.)

CHAIRMAN MELIUS: And I think NIOSH will also have had an opportunity to look this over and if they have comments by next week -- also, I don't know, Sam or Jim or whoever, the -- was your IG-004 out when you did the-- had that been done by the time you had done your surrogate data criteria? Had that been done by the time-- that document been prepared by the time you did the evaluation of the Bethlehem --

DR. NETON: No, it was not.

CHAIRMAN MELIUS: I didn't think so, so I guess there is some thought that ought to be given to that, as well. It is not --

MR. KATZ: Jim?

CHAIRMAN MELIUS: Yes.
MR. KATZ: Jim, this is Ted. Ted Katz. If this is -- people keep touching on a point that I think I'd like to address, that I don't know that it really has a bearing on Bethlehem Steel per se, given the nature of the discussion that you've had, but it does have a bearing when you are talking about plausibility in general, and I wonder if it wouldn't be a good time for me to address it, since there will be more talks about plausibility as a factor at the Board meeting, too.

And that is, and this really just sort of popped out at me when I read the SC&A discretionary report on Bethlehem Steel, this current one that we just received just before this meeting.

But at the front end, again, I'm not sure that it actually is operating in the discussion that you're having, but a number of things people have said have sort of touched on this view, which is, SC&A interprets the regulation with respect to
plausibility a little bit wrongly. And it's important, I think, although it's subtle, is with -- they talk at times, and then it's come up with a number of you too, with talking about this window, about the plausibility of the dose, or the dose window or whatever.

And plausibility, just, just to be clear, what have to be plausible are the circumstances of exposure that are taken into considerations. But, I mean, as all of you scientists know very well, I think, when you are using a model and you are using multiple conservatisms, even though all your circumstances individually can be plausible, to, sort of, the multiplication of those conservatisms, the result, the resulting dose, you know, if you were just to look at that dose and consider the dose, top end for example, that dose itself, you might say, well, no-one's going to encourage that dose. And that's because all of these conservatisms are taking -- are sort of
multiplied against each other. And so the only point I want to make clear is, is that, that is not an issue because the reg is not limiting in terms of what happens at the -- comes out of the pipeline in terms of dose. The regulation speaks to the circumstances being plausible.

And I, I just think it's important to, to keep that clearly in your minds when you -- should you discuss actual dose levels and whether those are plausible. I don't think that is the issue.

MEMBER MUNN: That is a penetrating thought, Ted. And it's one which perhaps should be made for sure at the Board meeting, at the time when we discuss this material.

CHAIRMAN MELIUS: I would actually have some pretty serious questions about that interpretation, Ted.

MEMBER MUNN: And that's why it needs to be said.

CHAIRMAN MELIUS: And I think it's
that -- I don't think we've strayed from it, in terms of how we've approached that. In terms of language, we may --

MR. KATZ: Well, Jim, the one I'm speaking of is the explanation given at the front end of the SC&A --

CHAIRMAN MELIUS: I know, but I'm not familiar with that.

MR. KATZ: Again, like I said, I don't know whether it's operationalized in any way in the discussion. I didn't hear it operationalized in the discussion about Bethlehem Steel in specific, specifically. But the language of the reg is what it is, and what's plausible are the circumstances, not, not the dose.

MEMBER MUNN: Good again to hear. And ladies and gentlemen, I hate to say this, but I have a plane to catch, and I'm going to have to leave the call. I can't imagine that anyone has anything they would want to ask me, but if you do, now is the time. I am on my way home.
MEMBER ZIEMER: Have a good trip, Wanda.

MEMBER MUNN: Thank you.

CHAIRMAN MELIUS: Have a good trip, Wanda, yes.


CHAIRMAN MELIUS: So if there are no more questions from the Work Group, does anybody from the Bethlehem Action Group, I believe it's called, have any comments or questions? I don't know if you are still on, it's been a pretty --

MR. WALKER: I am still on, but I have no questions, I'm just listening in.

CHAIRMAN MELIUS: Thank you.

COURT REPORTER: Who was that?

MR. WALKER: Ed Walker Jr.

CHAIRMAN MELIUS: Anybody else, I just want to give you the opportunity. And we will be -- this, you know, the Petition Evaluation, the Petition in this discussion will be continued by the full Board, actually
a week from today, about the same time. I believe it's on our agenda for the afternoon of next Thursday.

MR. WALKER: Yes, I will be there.

CHAIRMAN MELIUS: Good. Okay.

Any other closing comments, Ted, or anyone from the Work Group?

MR. KATZ: No thank you, I'm good.

CHAIRMAN MELIUS: Okay.

MEMBER ZIEMER: No thank you.

Ziemer.

CHAIRMAN MELIUS: Okay. If not, we can adjourn and I guess we'll see everyone in Niagara falls next week.

MEMBER ZIEMER: Very good. Thank you.

MR. KATZ: Thank you, everybody.

(Whereupon, the above-entitled matter went off the record at 2:14 p.m.)