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

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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

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WORK GROUP ON SEC ISSUES

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FRIDAY
JULY 30, 2010

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The Work Group convened via teleconference at 1:00 p.m. Eastern Daylight Time, James Malcolm Melius, Chairman, presiding.

PRESENT:

JAMES MALCOLM MELIUS, Chairman
JOSIE BEACH, Member
GENEVIEVE S. ROESSLER, Member
PAUL L. ZIEMER, Member

ALSO PRESENT:

TED KATZ, Designated Federal Official
ISAF AL-NABULSI, DOE
HANS BEHLING, SC&A
SAM GLOVER, DCAS
STU HINNEFELD, DCAS
EMILY HOWELL, HHS
JENNY LIN, HHS
ARJUN MAKHIJANI, SC&A
JOHN MAURO, SC&A
DAN McKEEL, Petitioner for Dow
MICHAEL RAFKY, HHS
LaVON RUTHERFORD, DCAS

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

(1:03 p.m.)

MR. KATZ: Okay. So this is the Advisory Board on Radiation and Worker Health, the SEC Work Group. And let's begin with roll call.

We are discussing sites today: NTS, Electro Met and Ames. So, please, when you -- when we go through roll call, please address conflict of interest, as well.

Someone has a line open that has feedback. They either have their speaker phone and -- I'm not sure what, but I'm hearing myself every time I speak.

So, everyone who is not speaking, mute your phone. If you don't have mute, use *6. Thank you.

Okay. Roll call, then, beginning with Board Members, with the Chair.

CHAIRMAN MELIUS: Yes. Jim Melius, and I have no conflicts.

MEMBER BEACH: Josie Beach. I

have no conflicts with Ames, Met Lab or Nevada Test Site.

MEMBER ZIEMER: Paul Ziemer, no conflicts with either of those labs.

MEMBER ROESSLER: Gen Roessler, no conflicts with anything, I don't think.

MR. KATZ: All right. NIOSH ORAU team?

MR. HINNEFELD: This is Stu Hinnefeld. I don't have any conflicts from those sites.

DR. GLOVER: Sam Glover, no conflicts with those sites.

MR. RUTHERFORD: LaVon Rutherford, no conflicts with those sites.

MR. KATZ: SC&A team.

DR. MAURO: John Mauro, SC&A, no conflicts.

DR. MAKHIJANI: Arjun Makhijani, SC&A, no conflicts with those sites.

DR. BEHLING: Hans Behling, SC&A, no conflicts.

MR. KATZ: Okay. That was Hans Behling, I think?

DR. BEHLING: Yes, it is.

MR. KATZ: Thanks. Okay. How about federal officials for HHS or the other departments, including contractors.

DR. AL-NABULSI: Isaf Al-Nabulsi, DOE, no conflicts.

MS. HOWELL: Emily Howell, HHS.

MS. LIN: Jenny Lin, HHS.

MR. RAFKY: Michael Rafky, HHS

MR. KATZ: Okay. And I should note I'm Ted Katz. I'm the Designated Federal Official for the Advisory Board. I have no conflicts.

And then, any members of the public on the line who want to identify themselves?

DR. McKEEL: This is Dan McKeel. I'm the Petitioner for Dow.

MR. KATZ: Dan. Very good. That does it with roll call and it's your agenda,

Jim.

CHAIRMAN MELIUS: Okay, thanks, I believe all the (Telephone interference.) of that draft document which is entitled, guidelines for inclusion, the SEC, for workers with less than 250 days of qualified employment.

So, you should have received that draft document, the redraft earlier this week.

COURT REPORTER: Excuse me, Chairman Melius. This is the Court Reporter. I was temporarily disconnected. If you wouldn't mind restarting your statement, I apologize.

CHAIRMAN MELIUS: That's okay, I was temporarily disconnected a few minutes ago also.

Everyone should have received two documents that we are going to discuss that talk about Work Group members. One was a redraft that I did of the guidelines for the inclusion in the SEC for workers with less

than 250 days of qualified employment.

I sent out an earlier draft to receive comments from the Work Group Members and from NIOSH on that and then incorporate those comments into the new draft which I sent out on Monday to everybody.

And then the second document is a document that SC&A did which reviewed the three sites, and sort of summarized some of the previous documents on -- that SC&A had developed on that.

And the title of that document, which is dated July 2010, is review of three case studies examined for addressing guidelines for possible addition, blah, blah, blah. And do that -- and, Gen, did you get a copy of that?

MEMBER ROESSLER: I did, thanks to Ted. He sent it.

CHAIRMAN MELIUS: And I was emailing this morning. I was tied up in a meeting, couldn't access the documents so I

asked Ted to, so --

MEMBER ROESSLER: Yes. I appreciate that. I don't know why I never got it. It was not in my files anywhere.

CHAIRMAN MELIUS: Yes. I couldn't even look back into the distribution of it to see how it went out and so forth. And that, I think, serves as sort of a background document to the revisions that I did to the guidelines.

So the document -- let me talk a little bit about those revisions to that because they are -- because they were significant revisions. I'd appreciate the comments from Work Group members and from NIOSH.

The first draft they did was actually based on the transcript of our previous meeting and I so tried doing that to make sure the discussion there and then based on the documents to try to then reorganize that better and focus it better on the issue of less than 250 days of exposure and some of

the considerations that, you know, we had talked about them were important there, but at the same time, you know, they needed -- several of those concepts that were summarized in the first draft really needed the clarification and I think I tried to achieve that.

One is by, you know, focusing a little more clearly on what's in the regulations and focusing on, you know, discrete incidents as the basis for this potential determination.

Secondly, in terms of looking at sort of the health endangerment issue and how we would judge that, I added some examples from -- some of which we had discussed before and some of which I took from the longer background of documents that SC&A had prepared we just -- I just mentioned to that.

And there are a few other changes there, so I think it's -- hopefully, it's a better document, more focused and better --

more understandable to people and more useful.

So, I guess at this point I would welcome any comments from the Work Group members on that and on the new -- the revised documents, if you have any.

Does anybody have any comments on that document, the guidelines document?

MEMBER BEACH: Jim, this is Josie. I thought the overall document was good. There were just a couple of little wording errors, but -- that I noticed.

CHAIRMAN MELIUS: Yes. I guess this might be easier if you sent those by email. I caught a couple so I made some --

MEMBER BEACH: Okay. Yes.

CHAIRMAN MELIUS: -- already, but if there are any general comments it would be probably more helpful for the purposes of this call.

MEMBER BEACH: Well, in the second page I was just wondering, under the first paragraph where it -- you were talking about

incidents, exposures resulting in these incidents, and then you say SC&A working paper.

And then I was wondering, November 17th, 2006, was that just an incident? I was trying to go back through the document to see. It just kind of left me wondering.

CHAIRMAN MELIUS: No. The -- I'm sorry. I may not have had that or -- there was an SC&A working paper from November 2006 called Parsing Health Endangerment Criteria.

MEMBER BEACH: Oh, okay.

CHAIRMAN MELIUS: It was -- came from when we were first -- the Work Group was first discussing this 250-day issue, and we went through it and analyzed, and in particular what I was referencing that for was we had reviewed -- summarized some of the information on criticality incidents.

MEMBER BEACH: Okay.

CHAIRMAN MELIUS: And realizing that's when this part of the discussion of

that and the follow-up to that was sort of we, you know, realized that criticality incidents involved a -- potentially a wide range of exposures.

MEMBER BEACH: Okay. Thank you.

MEMBER ZIEMER: This is Ziemer. I think probably if Josie doesn't have that, we probably should make -- have SC&A send her a copy.

It's good background information. I think there was a list of, for example, of all of the -- I think the test of the -- the specific tests as well as incidents such as Ames or events such as those at Ames and others.

So, it was a pretty extensive compilation of a number of situations where there might have been high individual exposures, just to give us some fodder for thought, I think.

DR. MAKHIJANI: This is Arjun.

Dr. Ziemer, there were actually

three or four different reports. One was the one that --

MEMBER ZIEMER: That's right. There were.

DR. MAKHIJANI: -- Dr. Melius was referring to, which was the survey of criticality incidents. Then the one you were referring to, I think, was a specific report to NTS, and then there were two reports on Ames.

MEMBER ZIEMER: Oh, yes.

DR. MAKHIJANI: And I'd be happy to collect them and send them --

MEMBER ZIEMER: Probably it would be good if Josie had all of the materials --

DR. MAKHIJANI: I will collect them right now and email them to her.

MEMBER ZIEMER: Yes.

MEMBER BEACH: Thanks. And I honestly think I probably have most of them. It just -- it wasn't clear to me what that was. So, thank you for the explanation.

CHAIRMAN MELIUS: Yes. And that has -- one that's referenced in the guidelines as a listing. It's based on tables with a listing of a number of criticality incidents, both in the United States and in other countries that have been documented.

It gives some idea of what was the potential level of exposure, something about the incident, criticality incident itself, and how many people exposed and things like that.

And I think it was just sort of useful to get a better understanding on the range of exposures that might be associated with such an incident.

MEMBER ROESSLER: Jim, this is Gen. I have a -- sort of a general comment. I did -- I looked at your first -- well, one version, earlier version of the guidelines, and then this recent one, and it's substantially improved.

I particularly like the four examples, because they do give real situations

where I think this can apply, the biological dosimeters, the early exposure estimates and so on.

But what I'm having a hard time trying to figure out what's going to happen from here on if we adopt this. It seems to me that this is going to be an individual decision, certainly good examples and good guidelines, but it still is going to be a really difficult thing to put into, you know, really make work.

CHAIRMAN MELIUS: I agree. And we've struggled with this for quite a while, and I think we hope to have something, I would say more -- a little bit more straightforward, and I think, you know, discussions in the Work Group at the last meeting, we had a -- I think we came to the realization that there was no easy way of doing this, and that it was going to be looking at individual situations and evaluating them in the context of some overall guidelines.

But those overall guidelines would not -- hopefully they'll be helpful, but they want -- it will still take a close examination of the particular situations in order to be able to reach a conclusion, and to make a decision on it.

Hopefully, it can be done in a way that looks at the overall site, that it wouldn't have to be, you know, sites where there's multiple incidents we'd be able to sort of sort through it in some way, but I'm not really even sure of that because the so-called discrete incidents at a particular site can vary quite a lot.

And even deciding what's a discrete incident may be difficult, particularly in some of the early sites where the -- you know, the records aren't very descriptive of what -- where -- situations where people are being exposed. I think in particular the Metallurgical Lab situation.

So, you're correct. I mean, Gen,

it's going to be a case-by-case, and hopefully we can come up with at least a framework for making that judgment. It would be -- mean that we could at least be consistent about how we do it compared to the claimants that are involved in those incidents.

So we're at least reaching that and maybe after we go through some examples or situations and by that it will come easier, but it is not a simple straightforward situation.

MEMBER ROESSLER: Well, then let me ask a follow-up question. When a decision needs to be made, will it be our Work Group making the decision? Will it be -- or making a preliminary decision, then presenting it to the Board, or just what will the procedure be?

CHAIRMAN MELIUS: I think it may be that or the situations for the sites that have already been referred to the Work Group, which are the, I think, the three that are listed there, Ames, Metallurgical Labs and

Nevada Test Site.

It also may be that some of these may be situations where NIOSH will now go back and look at some of these sites themselves and then say, well, maybe, you know, this is -- and I think we have to decide how that process will work.

But I think that would be in the future. Now, again, I think I'd like -- I think it would be good if we -- the Guidelines were helpful enough that another -- other work groups, for example, were looking at sites would -- where there are -- there have been incidents, it might fit into this situation or these guidelines -- we'd also make a judgment. They do or they do not. Or, they, you know, do or do not warrant further examination, and then I think we need to make a judgment as to, you know, whether -- what's the best place for the Board to -- the most efficient way and the best case for the Board to be able to do that.

I mean, one example even came up

in the review paper that Arjun did, SC&A did, on Nevada Test Site was that where the above-ground testing we had started to look at some of the incidents there that might fit under these criteria, but for below-ground, underground testing, we had not, and there may be -- very well be incidents there that might -- and we may want to at some point charge SC&A with reviewing those, those incidents in more detail.

But I know it's not a yes or no answer, and I think we need to decide and -- something we need to, you know, possibly make a recommendation to the entire Board in terms of how we think these should be handled.

MEMBER ROESSLER: Okay, that helps, Jim.

CHAIRMAN MELIUS: Yes. I don't think that's going to be -- we need to try to work -- at least my feeling would be we -- this Work Group, to try to at least work through the one -- the situations that have

been referred to us already, which are Ames, Met Lab and Nevada Test Site.

DR. MAKHIJANI: Dr. Melius, may I ask a question on the last paragraph of your guidelines, the last definition issues paragraph --

CHAIRMAN MELIUS: Yes.

DR. MAKHIJANI: -- if it's appropriate for me to do so?

CHAIRMAN MELIUS: Go ahead, Arjun.

DR. MAKHIJANI: Yes. Were you thinking of two different kinds of approaches here, one where, you know, workers were employed at the site or involved in, you know, substantive activities there relating to the production or testing or whatever, would be covered if they were less than 250 days because there's evidence of incidents and a separate category of SEC possibilities that we know there was X incident where a radium source was not handled according to the rules and the doses were exceeded and there were

white blood cell changes, so anybody who was involved in that incident can file an SEC petition?

Were you thinking of two separate categories or just around specific incidents and you have to file a specific petition or -- I'm wasn't quite clear about that.

CHAIRMAN MELIUS: Well, it may not be clear. What I was trying to address there was, I think that the way the -- the way I understand the regulations are that the regulations apply to a single discrete incident.

And yet we had situations where there may -- in our Work Group, this past Work Group meeting in discussions we talked about situations where there are multiple discrete incidents.

DR. MAKHIJANI: Right.

CHAIRMAN MELIUS: Ames was one example.

DR. MAKHIJANI: Right.

CHAIRMAN MELIUS: And I think I was -- what I was trying to clarify there was that that -- the first draft I had that mixed in with the guidelines to, you know, the judgment of a discrete incident and that, I think, was confusing and probably wasn't appropriate, was that, trying to at least put a place-holder in there that at some point we would have to also take into account the fact there may be multiple incidents that we -- there would be different amounts of information available about what extent people would be present at those incidents.

There would also be questions about how many incidents was a person exposed to and so forth.

So the health endangerment criteria really just would apply to a discrete incident, but it might be that when we then -- say, we had a finding that there was a discrete incident with high exposures that there -- that in terms of developing the Class

Definition, of how that -- how to make that operational, one would then at that point be taking into account the fact that there were multiple incidents.

So, you are correct, Arjun, that there are, I think, a few situations that we would have to wrestle with. One is -- I guess I'm thinking of Ames where there were like multiple incidents and it was sort of how do we -- or how to deal with that.

And then the second one, second Class Definition issue is maybe that we would have a single discrete incident, but we would also -- or maybe more than one, but -- at a site, but we would -- there would also be uncertainty about who was present at that incident.

To know that there was, you know, a certain work force that was there during a, obviously a certain time period, but exactly who was included in that work force was unclear.

And that came out of looking at some summary that you did on Met Lab and on Nevada Test Site where it appeared that at least on some of the incidents there was uncertainty as to about who was present and how we would then -- you know, if we had made a determination that that would involve that incident which involved health endangerment, we then would have to figure out how do we make a -- we determine who was there and focus that Class in an appropriate way.

It obviously wouldn't be absolutely everybody who had ever worked or whatever, but it would be during a time period and some way of trying to focus that more.

Again, it would depend on the amount -- the records that were available on that incident.

MEMBER ZIEMER: Dr. Melius, can I comment also? This Ziemer.

CHAIRMAN MELIUS: Yes, please.

MEMBER ZIEMER: I think one of the

items we need to keep in mind that, Arjun, is, I believe under the law we can't sort of add up smaller incidents and say that these constitute a bigger one or something like that, partially because we don't know the magnitude of these to start with.

But if there are -- in my mind, if there are multiple incidents you could perhaps talk in terms of the increased probability of someone being subject to an incident during the period under 250 days.

So, it might -- and I suppose we'd have to hear from counsel on this as to whether legally you can approach it this way, but if you had a site with a single incident, you'd have to be able to place someone there at that incident in terms of time and location.

But if you had a site like Ames where you had multiple incidents and you weren't quite sure how -- who was there, when and so on, it seems to me at least

conceptually, if there were multiple incidents you could talk about the probability that someone might have been exposed to an incident during their working periods.

If, perhaps -- perhaps it might be approached that way. I'm not sure from the legal point of view if we have to actually confirm that a person has been at an incident or whether we can talk in terms of the likelihood that they were there if an incident or multiple incidents occurred during the year of their work.

MS. HOWELL: Dr. Ziemer, this is Emily.

MEMBER ZIEMER: Yes.

MS. HOWELL: And I kind of offer a partial response to what you suggested.

MEMBER ZIEMER: Yes.

MS. HOWELL: I want to clarify, you're correct. You cannot, under the current regulation as written, add up multiple discrete incidents. They are a discrete

incident and if the person was present during that, then you're establishing that there was a high enough exposure to meet the regulatory standards and they would be added that way.

So, you can't add the multiple ones. Now, what you're -- what I think you're discussing alternatively is kind of considering discrete incidences that maybe were high, but not exceptionally high --

MEMBER ZIEMER: No, I'm not thinking of that so much as simply the likelihood that they were there during one of the discrete incidents.

And of course, if there are multiple incidents during the year and you don't know specifically either when the incidents occurred, only that they did, it seems to me that if there are multiple incidents, the likelihood that a person was there for one of them becomes greater.

MS. HOWELL: Well --

MEMBER ZIEMER: I don't know if

one could think of it that way. I mean --

MS. HOWELL: I think -- I think, you know, the Board can consider that when reaching a health endangerment determination in 250 days, but it shouldn't be the sole criteria.

MEMBER ZIEMER: Oh, no. No, I just --

MS. HOWELL: And the other thing, I guess, is that I would say you have to separate a discrete incident from an exceptionally high exposure.

I mean, for the present criteria to be met, you have to meet both of those requirements. But I can envision a situation where you may have a series of what you would consider discrete incidents, and that it was not a chronic, day-to-day exposure, but they did not meet the exceptionally high exposure threshold.

And there may be some wish to kind of aggregate those exposures, but

unfortunately, under the current regulatory language, we're left with either being able to get there through the 250 days and, you know, when you're looking at that for an SEC Class under 250 days, then a series of the three incidents is like one of many factors you may consider, and then there's presence for a single discrete incident with exceptionally high exposures.

So, I don't know if I'm really answering your question or not. Some of this we're going to have to kind of look at more as we hear more from all of you.

DR. MAKHIJANI: Dr. Ziemer. This is Arjun. Because the thing I was thinking of; at Ames, there were many blowouts. I guess you have to judge whether a single blowout qualified, but there are no records of who was present, but we know that generally the work force who worked there was liable to be present at some time or other.

But in the Met Lab there was a

cyclotron exposure with blood changes and as a result, I believe there was a discrete set of people who were there at that incident, and not everybody who worked at Met Lab, so I guess then you have to find out who they were.

They have to be something -- presumably something like two kinds of situations that could be characterized by these extremes where we don't know -- we can't place the individual which had incidents, many of them, each of which was big and then the second where you might have had only one incident with a discrete population present, maybe only one worker.

MEMBER ZIEMER: Yes.

CHAIRMAN MELIUS: This is Jim Melius. I would go back to Emily's comments and Dr. Ziemer's comments.

I guess what I was thinking, and I wasn't -- I didn't state it properly in that last paragraph, but was that there would be a situation where there might be multiple

discrete incidents with exceptionally high exposures at a site.

Now, exactly how we would handle that, I think we would need to work out, but that would be -- it would seem to me that there might be some way of not accumulating those, but including them in one recommendation, that those people would really be all captured under a single -- might be captured under a single Class Definition, and that might involve what you were referring to, Dr. Ziemer, sort of the probability that they were exposed, but it wouldn't be the issue where we would have multiple discrete incidents and we were, you know, adding those up.

It would be rather where there would be multiple discrete incidents that would -- that would fit our criteria for having exceptionally high exposure.

MEMBER ZIEMER: Yes. I was thinking along the same lines and postulate

that they are all high enough to be exceptional, and then talk about -- if you don't -- if you can't specifically place people there, but you're able to say it's likely that they wouldn't have been exposed to one of those -- because that's all it takes, is one.

CHAIRMAN MELIUS: Right.

MEMBER ZIEMER: During the course of their work of less than 250 days.

CHAIRMAN MELIUS: Yes.

MEMBER ZIEMER: That's the way I was thinking about it, particularly if there were multiple ones, then the likelihood, in principle, goes up.

CHAIRMAN MELIUS: And sort of operationalize that at these sites where there's not good records, you would have some sort of a Class Definition that would try to capture those with the -- yes, those people that had a significant probability of having worked during the time and having been exposed

to multiple -- you know, at least one and maybe more of these incidents.

It would meet with the -- the first step, I tried to -- one of the major significant changes I made in the guidelines was to separate that out.

In the first draft I had the two concepts mixed, and I thought it was confusing and wasn't appropriate. Really the first threshold, you know, it was a discrete incident with exceptionally high exposure.

MEMBER ZIEMER: Well, in that last paragraph, Jim -- this is Ziemer again.

CHAIRMAN MELIUS: Yes.

MEMBER ZIEMER: -- the third sentence that says this would depend on the level of documentation available for determining whether a worker was present at each discrete incident.

It seems to me we don't want to be left with showing that they are present at each one if there are multiple ones.

CHAIRMAN MELIUS: Yes.

MEMBER ZIEMER: You only have to show one, I guess.

CHAIRMAN MELIUS: Right.

MEMBER ZIEMER: Or high probability of one, maybe.

CHAIRMAN MELIUS: Right.

MEMBER ZIEMER: I'm just wondering if we would say each are at a discrete incident.

CHAIRMAN MELIUS: I think we -- the notes I just made were, present at one discrete incident with exceptionally high exposure. That paragraph needs to be rewritten. I made a few other changes as we were just talking.

MEMBER ZIEMER: Yes.

CHAIRMAN MELIUS: But what I was trying to do was to move that issue to -- really comes up under -- I think more likely to come up under a Class Definition. Or, frankly, I think it might come up under the

issue of when NIOSH, the Board or whatever -- we're trying -- we're looking at the -- once we can reconstruct the dose to begin with, it complicates that also.

Other comments from the Work Group members or -- Stu, you were saying how -- I actually missed some of the sign-ins. I'm not even quite sure who's on the phone.

MR. HINNEFELD: Yes. This is -- I am here and Sam is on as well. I had to unmute there for a minute.

CHAIRMAN MELIUS: Okay.

MR. HINNEFELD: Yes, I think there are -- yes, I guess, there -- it would seem to me that there would need to be some discussion about those -- the kinds of questions that are being talked about here, and I guess from our standpoint we would feel like there should be some differentiating factors from a situation where there were, you know, incidents of --

You know, one of the differentiating factors among sites where

there's going to be potential harm from presence versus other sites there there's not. You know, that's kind of our interest here, is to be able to apply this because I agree with you, Dr. Melius, is that with a set of criteria in hand, it would be something that we would expect to incorporate into our work, I think, if we, in fact, adopt a set of criteria, or either the same or similar.

If we adopt those, then that would be something we intend to incorporate into our work, and it would seem like the key element in here is what distinguishes one category from the other, one category meaning potential for harm as defined by 250 days and the other category where potential for harm is presence.

So, you know, we struggled with what we can do with this, with this decision, given the current language of the regulation. You know, it just doesn't -- it's not very helpful trying to sort out the kind of situations we're trying to sort out.

So, I guess the only other thing I would comment is I know that Jim Neton participated in a number of these discussions before this new conflict policy came out, and we've determined it would be conflicted on the 250-day decision, on that decision, 250-day criteria.

Now, if we can arrive at some 250-day criteria, Jim is not conflicted at any of these three sites, and I think his contribution to that discussion would be pretty valuable when we get these sites to -- site-specific or any site-specific discussion where he's not conflicted.

CHAIRMAN MELIUS: Well, you -- I don't mean to put you on the spot too much, but it's actually a more general question for everybody.

Do those examples, four examples there, capture -- I don't think we can reach a, you know -- you obviously -- I don't think you have a quantitative threshold.

MR. HINNEFELD: Right. Right.

CHAIRMAN MELIUS: But do those examples adequately capture everybody's sort of sense of what an exceptionally high exposure would be?

MR. HINNEFELD: Well, yes, number one, which talks about a decreased blood cell count is -- I think that's even an example that's cited in the existing regulation.

The part about the administration of chelation therapy gives me a little pause because I believe there were a variety of thresholds for chelation therapy that were adopted at various times and where some sites were very cautious to introduce a medical intervention, and would only do that if they had evidence to believe there was a pretty significant exposure.

Other sites were apparently very liberal with chelation intervention, and you know, just maybe a potential indication of exposures to a transuranic with introduced

chelation.

And so, to me, that one -- the part about the administration of chelation therapy being evidence of an exceptionally high exposure concerns me a little bit.

CHAIRMAN MELIUS: I don't disagree. I was tentative about that and I tried different wording and it's hard without a specific example, so --

MR. HINNEFELD: Right. The -- I think there's been some discussion about the Ames Laboratory exposure of scenarios from a blowout. I haven't participated in that and am not completely up to speed on that.

I think we would not argue that a blowout, a thorium blowout would probably represent the potential for, you know, exposure, a significant exposure, and then it comes sort of down to a definition of what an exceptionally large exposure, which is sort of a subjective -- I think I heard it described as a subjective scientific judgment.

So, I don't have a strong opinion, I guess, either side of that. Again the Metallurgical Laboratory talks about events that led to peripheral blood changes and I think that's probably one in line with the existing language.

The Nevada Test Site, without knowing more about it -- I apologize, I don't know more about the specifics. An exposure rate, in and of itself, to me, doesn't speak to an extremely large exposure.

And so, I would need to know more about the incidents and the duration. And also, these apparently were documented incidents and were the names documented and are we just talking about a few people on this event and a few people on that event, and they spent quite a, you know, a significant amount of time in there, and the radiation monitor showed up and said, gee, you guys shouldn't be here.

Or, this, you know, is just a --

because I know there were certain documented events that seem like maybe we could get into this if the exposure time was sufficient.

But I don't know how that becomes -- it's important information for the people that we -- that we can identify them or, if we can't, the people who are on-site that day, but it's hard -- seems to be a real broad or far-reaching question. So, like that's -- I'm ambivalent on that one for a couple of reasons.

CHAIRMAN MELIUS: And that's helpful too, I'm trying to excerpt from the SC&A report to have specific situations, and it may be that we, you know, need to work through the -- once we've worked through the individual sites and made a determination, you know, reach some agreement on that, then we'll have a -- be better able to state the criteria, so to speak --

MR. HINNEFELD: Yes. One would hope. And it is -- this whole question is the

chicken and egg. You know, what do you -- what gets set first.

CHAIRMAN MELIUS: Yes.

DR. MAKHIJANI: Dr. Melius, may I make a procedural suggestion? It might be that NIOSH or Stu and his crew would go through these tables one through four that we have in our report, because there are specific incidents mentioned there.

Maybe bin them in three bins, you know, one where you know it's exceptionally high exposures in an incident, then you can't identify the people, but a large number of people were there and you really can't identify the people.

The other is where, with a discrete incident like this cyclotron incident, where you know that a discrete population would have been present, but maybe you know them -- who they are -- maybe not.

And then there may be cases where there may not be incidents, where there may

not be exceptionally high exposures, and we could get a view -- and there are some opinions expressed here in the comments column in terms of our interpretation based on the past.

I went through the past transcripts of the discussions, including the last Working Group discussion, and tried to come up with things that are in the comments column and exposure levels and the relative, whether they were exceptionally high or not.

So you have the views that we've been able to extract from the past discussions so that might kind of move the specific discussion from these sites forward.

MR. HINNEFELD: Well, I think that would be useful for the discussion, to be honest, for us to take that on, and also it would give maybe the opportunity to rely on people like Sam with a little bit more background and maybe a couple of the other guys with some more expertise in this, and try

to reach some -- you know, maybe our thought process will be illustrative as we go through those and this binning process, the thing that we have to think about to do that may be illustrative to us in sort of differentiation criteria.

CHAIRMAN MELIUS: I think, you know, our past troubles with this issue have been Work Group meetings, and we engage -- we either try to engage in coming up with some straightforward criteria, and fail on that, then we try to engage the specific site situation.

And then we sort of feel uncomfortable because we don't know what the criteria, you know, are --

MR. HINNEFELD: Right.

CHAIRMAN MELIUS: -- and I think we need to sort of approach them both together and I think we're trying to do now, and I think that would be a way of doing that.

Paul, Gen, or anybody else have

comments on those examples or --

MEMBER ZIEMER: This is Ziemer. I had a comment similar to Stu's on number four in terms of expressing things in terms of dose rates rather than total doses.

Actually, tens of r per hour, it's not uncommon for normal operations to occur at those levels and, of course, the worker doses are restricted by time so that you can maintain levels below some specified total dose.

Obviously, if you're up in the hundreds of r per hour, that's a different situation. But, I guess probably expressing entry into an area in terms of dose rates certainly can be a little misleading if we take that out of the context of, you know, in some stay time.

So, I wonder if there would be a better way of expressing that on that particular one, you know.

DR. GLOVER: Dr. Melius, this is

Sam Glover. Would it be okay to offer a comment?

CHAIRMAN MELIUS: Sure would.

DR. GLOVER: Okay. For the -- one of the things that -- just a suggestion. You know, we had a list of a series of examples that are sort of being offered as evidence and if they were to go back to the Work Group -- I know there's a lot of specifics like back and forth between NIOSH, Jim Neton and them, what were the realistic exposures.

And SC&A's reports, we haven't commented on the realistic -- on the realism of any of these. You know, they've sort of been offered in a hypothetical, you know, if this was like this, and we all agreed that this is what happened, then would you all agree to it.

We really haven't tried to respond to their specific examples, and almost the -- could you take the -- you know, other than number one, they're not hypothetical. They

are offered into evidence. The Ames Lab, Met Lab, NTS.

So, rather than having the specific examples, could we take your criteria and then go back to the Working Group and then make it, after they get fleshed out or worked out against the criteria here, they could potentially become examples for your -- you know, they could be then modified to include after they've been fully worked out.

CHAIRMAN MELIUS: Yes -- no, I think that was one of the things we wanted to be able to do. At the same time, I think, in the guidelines themselves that we needed to maybe -- we can't describe the whole situation, you know, then the guidelines would go on for pages and pages and then be less useful.

So, it was sort of excerpting that. I mean, for example, in Ames, I mean, when I tried to say there was the estimates of the intake, that was the SC&A estimates. I

wasn't saying that was the only estimate.

And, you know, these are situations where we can't reconstruct dose, so there's going to be multiple estimates. But I think eventually we should, you know, reach agreement on is that a fair, you know, description of how we would reach, you know, a conclusion on a particular incident.

So those will change over time and we should go back and forth on. I just wanted to get some place to get a starting point for each of the sites and so forth.

DR. MAURO: Dr. Melius, this is John Mauro. If I may add an observation also.

CHAIRMAN MELIUS: You sure may.

DR. MAURO: When I read the section where you have the four examples, when you come to two, three and four, when I read it, I wasn't really sure whether you were using those examples as places where we know discrete incidents occurred, where the potential for substantially high or

exceptionally high exposures might have occurred.

But we're not necessarily saying they did occur, and therefore, use these as examples of when it's clear and unambiguous that we have situations where you would say, yes, this meets the criteria as opposed to just examples of incidents.

I guess that was one of the things I wasn't quite sure, you know, how those examples were intended to be used.

The second related item is -- and this is based more on the -- my recollection of the discussions regarding Ames and Met Lab and Nevada.

I believe, and certainly not everyone may see it this way, but I believe there was a general consensus that the individual exposures at Ames would seem to lean toward something that one would consider yes, this is -- meets these exceptionally high exposures under the conditions that are

defined by the rule.

The same thing goes at Met Lab. I think the tendency during our conversation was yes, because basically of the blood, the blood count.

However, I would say that we're a little bit more in an ambiguous area when it comes to the report that we submitted regarding the Nevada Test Site. I don't -- I think there was mixed sentiment on which of those various incidents that were discussed in our reports tended towards being more like 250-day or not.

So -- and I just wanted to offer that up as an observation.

DR. GLOVER: See, one of the things is the reality as we dig into these and we sort of talk about these examples, like for Ames, I believe the blowouts for uranium, we have bioassay for.

So then we get into, you know, which specifics and I'm just hesitant -- it

would be almost nice if we -- if the examples -- and again, this is just my comment, if they were more less Ames-related and maybe, okay, take from Ames if you were to see this, if this is really where it comes down, then this would be, you know, versus saying this is what we saw at Ames. So, that's just my suggestion.

MEMBER ROESSLER: This is Gen. I have a comment, too, as long as you're talking about Ames.

First of all, I like examples, and I think it gives us the guidelines sort of thing we have, indicators that they were high doses, high exposures and here's some samples of it.

But on the Ames one, I have kind of a problem with that. If you're going to work on it some, in the last sentence there where it says blowouts. The intakes were on the orders of tens of nanocuries, and that's one criteria in itself, I think.

That one, I think, you'd have to specify what radionuclide it is. I have a hard time, just looking, tens of nanocuries and saying, oh, oops, that's really high, unless you're more specific.

Then, in the second part of that sentence, it doesn't seem to read well to me or something. On the order of tens of hundreds or shouldn't that be --

CHAIRMAN MELIUS: It should be or, I think.

MEMBER ZIEMER: Or tens to hundreds.

CHAIRMAN MELIUS: No, it's order of tens or hundreds of.

MEMBER ROESSLER: Or hundreds of. Okay.

I offer that, if you're going to be, you know, looking at that one in more detail.

CHAIRMAN MELIUS: That's -- I excerpted these from Arjun's SC&A tables and

was -- tried to condense a, you know, a fairly -- a lot of information from a table into a sentence or two, and probably failed.

DR. MAKHIJANI: The radionuclide involved is thorium.

CHAIRMAN MELIUS: Thorium, yes.

DR. MAKHIJANI: And its decay process.

CHAIRMAN MELIUS: And so that was the previous, I think the column in the table, and so I didn't include the column, I included a sentence from the comment and so forth. But those are all kind of helpful suggestions.

Yes, you know, what Sam was saying, if -- we may get to a point where we would have some nonspecific examples. I'm just a little reluctant, because I want to -- I think we need to stay focused -- at this point we need to also stay focused on the actual incidents that we're going to have to, you know, evaluate.

And I don't -- I hate to put up a

hypothetical that's, you know, everyone agrees it's a, you know, horrendous dose and, you know, it would qualify, but if it's not something we're really going to deal with, then I think the -- I don't think it's that helpful.

I think the thing, we can come up with hypotheticals about what's an exceptionally high exposure, but it's more specific situations that -- that we could have, but there's probably some balance there that we need to reach between sort of reality-based and hypotheticals.

So, the more general criteria help us in dealing with new situations. It does not -- I think one thing we're seeing is that the situations are -- are reversed, which is what makes them harder to, more difficult to deal with.

DR. MAKHIJANI: Dr. Melius, this is Arjun -- I don't know if people have had time to go through the report that we

submitted, but there's a lot more in it than Ames. And there are, for instance, Nevada Test Site, a shot 4 incident where the highest exposure was 39 rads in one incident, and the next was 28 r.

And then there was an incident during the underground testing period that didn't involve testing actually, it involved a cobalt-60 source, and there was a hand dose of 1200 rem and a pelvic dose of 42.5 rem, although the badge, overall badge dose was less than ten rem.

And so, there are a number of very specific things that I think it would be useful to know whether they are exceptionally high exposures or not, and then there are actual documentation of where, in some cases, of what the red blood cell changes or using current NCRP guidelines whether chelation therapy might be administered.

And I had Joyce actually do those specific research on when it is administered

and some of those references are provided, and so it might help focus things.

MEMBER ZIEMER: This is Ziemer. One comment. I think we are going to have to be very cautious in making sure that we avoid cases where you're actually able to bound the dose and put numbers on it, because that kind of defeats the whole purpose of the thing.

In fact, if we start -- if we end up doing that, then we have put a number on the issue of -- of health endangerment which currently does not have a real number attached to it, which is also bothersome, of course, from a scientific point of view.

But, if these incidents can be bounded, then that -- you don't need an SEC. All you need is a person to show his presence, anyway. But -- or actually you can find doses.

But, somehow -- and it's fine on examples, but I think we're going to have to be careful so that we don't end up saying,

okay, once you pass some number, it's -- you have either health endangerment or you're at -- you're at an incident.

I don't know how we avoid that, but I think that's a problem from a legal point of view.

CHAIRMAN MELIUS: Oh, yes. No, I think your -- that's a very good point, Dr. Ziemer. This is -- we're not even -- shouldn't even be talking about this situation unless we were unable to reconstruct the dose, and that's sort of the threshold to even get into this discussion, and so -- correct.

And so, it's not -- it's always going to -- it should always be a situation where we, you know, have to, you know, we don't have a good accurate estimate of the dose, can't reach it, so --

MEMBER ZIEMER: Right.

CHAIRMAN MELIUS: And so, if it weren't, it would be, I mean, somewhat easier, though, putting a number on endangerment has

its own difficulty. But, again, we just wouldn't be there.

MEMBER ZIEMER: Yes, but, for example, at Ames, if we say the estimate is tens of nanocuries or tens to hundreds of rem, we put some boundaries on things here, and that's -- that's what I'm concerned about, that it looks -- on the blowouts, we have numbers of orders of tens of nanocuries of thorium.

I don't know how you avoid that, but --

CHAIRMAN MELIUS: I tried to use examples where there was -- one is to always include a range so it doesn't imply that we know it is, you know, 500 or more or something like that.

MEMBER ZIEMER: Yes. No, I understand that. I'm just struggling with how to end up with a document that sort of meets the legal need and satisfies it scientifically, that -- because what we mean

by high dose, number one, becomes somewhat subjective, but it's sort of like I don't want to define it, but I know it when I see it.

We all have kind of an intuitive feel for what that is, but it may be different from everyone. But I think we -- we certainly want to avoid having a sharp number in here.

DR. BEHLING: This is Hans Behling. Can I make a comment on those few statements by Drs. Ziemer and Melius regarding Ames?

CHAIRMAN MELIUS: Sure.

DR. BEHLING: The numbers that you see quoted in that point that Arjun made is really a number that has a basis of empirical values and applied to all site-specific hidden parameters, and let me explain.

In the original report that I wrote that defines those numbers, what I took was a blowout that was documented at Fernald, and there are empirical data regarding that blowout in terms of which fraction of the

material actually became airborne and was not recovered.

And then I tailored that fraction to actual quantities that are being used at Ames for both thorium processing and uranium in their blowout and took empirical data involving the facility at Ames that would perhaps then define an air concentration if there was X number of kilograms of material blowout, a portion of that went airborne and then I looked at the actual physical dimensions of the lab report at Ames where that material would have become airborne and then used a reasonable approach to quantifying what an inhalation intake would have been resulting from that blowout.

And I did -- I believe I used 15 minutes as an exposure because not only were these people there as scientists, but because it was also a facility that was covered by secrecy, they, the scientists, themselves had to actually act as their own personal fire

department so they were not in a position just to run out and vacate the premises.

And so, that's the basis for those numbers. So, reasonable assumptions that derive through those numbers.

MEMBER ZIEMER: Well, this is Ziemer, and I agree with that, Hans. I'm saying what you've done -- basically done a good job of reconstructing the dose, and we're, in a sense, concerned about events where you can't do that.

DR. BEHLING: Yes.

DR. GLOVER: This is Sam Glover. One of the things that, you know, I think we were concerned about is what is in from that one. How that -- you know, as you said you -- we just didn't know how many occurred, and so therefore that's one of the reasons why I believe it was added as an SEC.

So, here we're stringing together potentially a series of these potentially notable events and, you know, one of the

things that we've -- that we've brought up a few times is that there are limitations to the existing regulations, and some of these things may be that the Board, you know, your input on revisiting the regulations on how internal dosimetry is handled for these incidents or, you know, the regulation may not be adequate to handle some of these things.

DR. BEHLING: But -- this is Hans Behling again. Again, what I tried to do was both a ratio and time frame regarding incident because, in my calculations I actually differentiated exposure, internal exposure, again, time-integrated exposure over a one year, five to ten years from an incident that in a short duration of 15 minutes, I believe it would be integrated doses for one year, five years, ten years for an inhalation period of 15 minutes, and then also added to that perhaps the time interval between frequent blowouts measured at 30 days.

So, there were two discrete dose

estimates, inhalation estimates with regard to the first 15 minutes, and then a subsequent integration dose with the next period of 30 days, and from the table you will come to the realization that the dominant dose comes from the first 15 minutes of exposure following a blowout.

And that certainly would qualify for a discrete incident.

So, we can reasonably conclude that these blowouts were routine and that they occurred over periods from the early 40s to the 50s during the time that they were processing uranium and thorium, and so that any person who may have worked there for even as little as one or two months will probably -- or it is a high probability that they may be exposed to at least a single event, and that single event would have resulted in significant internal exposures.

DR. GLOVER: This is Sam Glover one more time. I just -- you just said one or

two months, and so that's different than presence.

And so this is, again, one -- a potential discussion of presence versus the 250 days, and where we may have some limitations on some of our language, you know, the current criteria.

And also, again, the level of detail that we're getting into is just another area where I think it, you know, it would be very helpful to go back to the Working Group and get all the people who really -- because this is very detailed, and we're offering into evidence a lot of different calculations, and we've had discussions back and forth on some of these things.

I think, you know, getting someone like -- if we had a set of criteria without these specifics and said, okay, let's try to use this and somebody like Jim Neton, then, could -- you know, because he's participated in hundreds of hours of this stuff, and I

don't have the benefit of that all the time.

And not including him and the agency, I think, at least from my personal view is, that limits some of our -- our feedback, and I think that's -- that would be a shame.

MS. HOWELL: And this is Emily. I have to -- I was -- Hans was going in and out through a lot of what he was saying, so I'm not sure if I heard correctly, but I have to pick up on what Sam's already mentioned about some of these measurements being -- while I gather that Hans is saying that the majority of the doses he's estimating was from a 15-minute incident, there were still some that were calculated over a 30-day period or one- or a two-month period for internal dosing.

We get into this very difficult area with the regulation as it's currently written when we start estimating those kinds of numbers in order to justify a discrete incident because I'm not sure -- and I'm not

giving a definite opinion on this right now, but I'm concerned about whether or not you could do a calculation that's taking into consideration some period of time that is beyond the actual discrete incident and how we have to define that term, to establish that something was a discrete incident.

DR. BEHLING: Well, I guess I had mentioned, the dose from a single blowout does, in fact, involve the first 15 minutes so -- if you want to drop off the balance of the 30 days that I used as an arbitrary value between subsequent blowouts, that would be fine, because it really wouldn't matter much.

The dominant dose from a single blowout is the dose that a person would receive in the first 15 minutes.

DR. MAKHIJANI: This is Arjun. Just a little bit of history here, because there has been a lot of water over this dam.

Not only SC&A did do reports, but NIOSH has done one report also in which they

had somewhat different numbers than Hans', but generally concurred with the idea and pointed out there were differences between Fernald and Ames.

But the most important thing I want to point out here is that NIOSH also did another calculation based on some limited thorium bioassay data from the 50s, assuming that it arose from an incident and calculated some doses, although we didn't know whether it arose from an incident.

And those doses were in the tens of thousands or thousands of rem and were considered implausibly high. So, it's actually not the case that the examples and the approach that was used to illustrate the doses were likely to be high, at least so far as the existing work is concerned.

CHAIRMAN MELIUS: One of the problems that we have, we do have a lot of history and a lot of discussion. I have a couple of comments because I think we also

need to sort of define a way to work with this.

And I'm not sure at this point whether trying to go back and rehash everything is the most efficient way of approaching this. And I don't -- the agency -- the government's got to make up its own mind when Jim Neton is conflicted or not conflicted.

I don't think -- I don't want to have us in a position of having to, you know, do something on that basis. That's something for the government to decide, you know, your rules on conflict and bias and just do that. I mean, we just proceed and then you can handle that accordingly.

I think we do have time set aside on the agenda for Idaho coming up to this. We've had other sites fall by the wayside that we thought were going to take up a fair amount of time at this meeting, so at least theoretically we have more time than we even

originally set aside for this.

So, I think we should try to use this time, you know, as best we can, because it's -- our agenda is -- I have a feeling that because we're -- our agenda may be a little lighter than expected for Idaho. It means it's going to be heavier than expected in our next meeting, I believe, in New Mexico.

So, I think we should try to make progress in this, and what I was thinking of, and I would be interested in feedback from the Work Group Members and so forth, is -- is that we, one, have a discussion with the Full Board on at least the guidelines, the general outline of the guidelines. Maybe not the specific wording yet, of every part of it, but at least the general outline of that, of where we think we're going.

And I have one question related to that, but I'll get back to that in a second.

Then, that would be followed by -- and I'd ask the SC&A to do a presentation that

would review the three sites, at least to the extent that they've been, you know, worked up so far and there's information.

So, you know, we present the information we have on these sites and how it might, you know, why we're concerned and what information there is on discrete incidents at those sites.

I understand there's a question earlier that, at least on the Nevada Test Site, I don't think there's been as much of a focus on this so far, so we may be based on the underground testing, so it may not be as complete.

But I think it would be worth spending some time -- remember we have four new Board Members that have had no involvement with this or at least very little. I'm not sure -- remember when Henry Anderson left the Board, how much we discussed while he was still on the Board the first time.

But I think it would be worth

bringing -- talking about these examples and summarizing information so at least all the Board Members are on the same level of information about these and understand the situation better so that we will be able to move forward more efficiently in the following meetings.

Does that make sense to Dr. Ziemer and others?

MEMBER ZIEMER: That sounds fine to me, Jim. I also wondered -- I thought that maybe Stu was suggesting that perhaps the NIOSH group also wanted a chance to review in more detail the July 13th document of SC&A.

Did I understand that correctly, and maybe have some response to that as well?

CHAIRMAN MELIUS: Yes.

MR. HINNEFELD: Yes. Well, you know, what I said -- I'm sorry. Did you want me to say something?

CHAIRMAN MELIUS: Yes, I did. I was going to say -- what I was going to, you

know, introduce you, introduce that and it is -- I mean, I don't think we're expecting necessarily a written response and time is relatively short, so I don't want to put too much of a burden on you.

But if there at least could be some general response to that and --

MR. HINNEFELD: I think -- I think we can have some, you know, spoken response to the -- to the example that the stand will be -- I think it will be similar to what I said on the phone earlier, and I think we can fill it out, you know, a little bit more.

And then, if -- you know, if that's how you want us to present it. I think our position going in here is that, you know, we're not telling them to stay hard and stand hard and fast, and Ames has to be the rule because that's not what we're saying.

We're trying to come up with a position that seems kind of logical and is compliant with the law, and we're having a lot

of trouble doing that.

So, yes, but we don't have -- and in particular with some of the specific examples and any kind of reservations that we might have about the specific examples or sort of endorsement that we might have of those specific examples, I would think that we would do.

Now, we discussed earlier about the possibility of us binning all the events described in the Table One of the SC&A documents from the three sites and some of those situations they've described were not carried forward into the examples.

So, shall we, for the meantime, between now and the Board meeting, we'll just worry about the examples that were written in the 250-day criteria documents.

But would you like us to proceed with some sort of binning after that or do you feel like that's been sufficiently binned and discussed?

CHAIRMAN MELIUS: Well, I'd actually reverse that, I think, for the purposes of the meeting, the Board meeting. I think if you could focus on the SC&A documents, and that, I think, would be the basis for the SC&A presentation at the meeting, at the Board meeting.

MR. HINNEFELD: Okay.

CHAIRMAN MELIUS: That describes the site and so it's more being able to -- we're not proposing anything, I mean, so it's not, you know, does this fit or not fit or whatever, but it's more, you know, are we capturing what's important about those -- those sites and, you know, the information that if it's available, it's relevant, a judgment on 250 days.

And the guideline itself, you know, I've been looking for both the NIOSH, SC&A and this Work Group to, you know, let's see if we can, you know, come up with better -- how do we improve those examples and come up

with better -- better illustrated examples that would go on to the guidelines.

DR. MAURO: Dr. Melius, this is John. I'd like to make an affirmative statement regarding the examples and how they are used here, because I think as long as the examples that are mentioned in the criteria, the draft criteria document, go toward just examples of circumstances which create candidates for consideration for the 250-day.

Not that they are examples of when 250 should be granted, but circumstances, different kinds of circumstances that have arisen in the past where consideration needs to be given as opposed to a determination has been made.

And I think these are very good examples. And, unfortunately, I think during the course of this conversation we -- we went into a level of granularity regarding each example that started to drive us in the direction that implied we were concluding

that, yes, we should grant the 250-day for this -- under these circumstances.

I'd sooner think that the examples will serve us well as situations under which it would be appropriate to consider that these kinds of circumstances, and -- but of course, on a case-by-case basis, the collective judgment would have to be made whether that meets a threshold.

Now, the kinds of thresholds that you attempted to include, I think, you know, regarding blood count, but avoiding dosimetric circumstances -- I guess what I'm getting at is, if we use the examples more as situations where this -- where these issues become of concern as opposed -- that's where the value lies and where I think they have a home in the criteria document.

MR. HINNEFELD: Okay. So, then, John, you're proposing that the examples in Table One of your report, then, are examples that you would --

DR. MAURO: I'm sorry. No. I'm talking not so much about our work, but the draft --

MR. HINNEFELD: Okay. So you're talking about examples in the 250-day criteria document?

DR. MAURO: Yes. Yes. Right. In other words, citing these examples in the 250-day criteria document, the one we have in front of us right now, these three examples, as circumstances where -- which -- which trigger the concern that requires investigation is how I read this, but it's clear from, you know -- but as you read it and our conversation as it progressed, it wasn't clear that that was the intent.

I think -- I think it's right now there's probably very little disagreement amongst everyone on the phone that these three examples, Ames, Nevada Test Site and the Metallurgical Lab are circumstance -- situations existed there where certainly this

is something that requires consideration.

How that's resolved, now, you know, is really -- the degree to which the criteria document could lay out nonquantitative criteria for helping the decision-makers when they -- on a case-by-case basis.

You know, that -- you know, and that -- I think that's what was trying to be done here. So, I think this draft is not that far away from serving the purposes of a guideline, but I -- but the work that it sounds like that you were about to engage in or will be engaging in, Stu, goes more toward your folks making a judgment whether you think this particular incident that occurred at this particular location, you would feel constitutes something that warrants, you know, designation that's meeting the 250-day criteria.

So, I mean, I think that's a different subject. I don't know if everyone's

following this distinction I'm making here.

CHAIRMAN MELIUS: Can I maybe clarify what my -- my view of this would be, is that the SC&A documents, Table One, sort of, those would be what I would call a good candidate, where this should be considered, and what we want in the guidelines are, at least at this point we should be trying to achieve our very good candidate -- I mean, a level above that.

It should be selected out of there where -- where the, you know, at least in our judgment now we really sort of focus specifically on these that these would be very good candidates, really, highly -- seems people would highly consider that they would, you know, have met this criteria.

And when we've then gone to work and eventually looked at the three sites in greater detail, some of these may fall out because, you know, maybe the dose could be reconstructed or, yes, maybe the -- you know,

people are, you know, that at the site, they really worked -- you know, the exposure was only a very short time or something -- there's other reasons, so these don't capture all of the information.

We never will, but maybe we'll have better ones or whatever. But they should be sort of a higher-level candidate. And I'd like to make them better, you know, more helpful examples, but it really won't be until we've sort of gone through the effort on all the sites.

What I'm, you know, more interested in is, sort of, NIOSH being able to raise the issues on the SC&A White Paper things that ought to be thought about at these sites. Again, not that it's, you know, point/counterpoint or whatever, but -- but these situations, and that we're all sort of agreeing on the -- at least the general outline of facts for those sites and how we should approach this -- this, without having

done, you know, what we will need to do on the individual sites.

Is that helpful or clarifying?

MEMBER ZIEMER: Well, this is Ziemer. I think it is, and I think John's point is also well made. And what you would do, then, in the document with the examples is move away from some of the specific numbers and describe them more qualitatively as the types of events that could lead to, quote, high exposures. I think John's point is also well made.

CHAIRMAN MELIUS: This --

MEMBER ZIEMER: But a discussion of the document would be helpful because, in a sense, we have to get a feel for -- from the real world about what that really means, I guess.

CHAIRMAN MELIUS: And what I think we would do would be to have at least a -- you know, I'll revise this draft document and circulate it to the other Board Members.

Everyone has it, but the presentation would be a little bit more general.

And I guess my other question -- I don't mean to put Emily on the spot, but I will -- at this point, I mean, Emily, are you comfortable with the general outline of this approach, not the -- not even the wording or anything like that, but is this something that at least you feel comfortable that the Board should be discussing and not getting us totally astray?

MS. HOWELL: Well, I mean, I think, you know, we've all said that this has been something that has been difficult for the agency to apply, and so I think that these conversations are good.

I have a few concerns about some of the specifics of the guideline document. I mean, I -- I guess what I would say is, you have -- we can't really -- I can't give you an opinion in a hypothetical situation.

I can say that the conversation

you're having is fine and you need to have it. It's kind of like when we get to a final document and consideration of actual classes or incidents, it will be easier for us to speak to those specific situations.

You know, and I feel like there's two different things going on. There's the guidelines document that you've revised, and I think it's much better in its revised form but, like I said, I do still have a couple of concerns.

And then there's a factual application document that SC&A has produced. So, I -- you know, like I don't know that I can give you a much more thorough response than that right now.

CHAIRMAN MELIUS: That's fine. That's just -- I don't think we can expect more. In time. There is -- I mean, I just want to mention this, I think there's also -- there is a sort of timeliness issue we've been wrestling with this a long time and, we know

it's difficult but it's not something we should be very leisurely about, I think.

You know, I think we need to try to resolve it to the extent that we can, to the extent that we can do that within the, you know, the current regulations is sort of the quickest way of doing that because -- and we can -- we can, on some of these sites we go -- we may reach a different, you know, situation where they really ought to -- you know, 250 days may not be appropriate for a site but, that's going to -- it needs to be dealt with. It has to be dealt with through a regulation change at the designated time.

Then, what I would propose and, again, a suggestion, would be a presentation on the guidelines, what the Work Group has been doing to the Full Board, and then a presentation by SC&A on the -- a summary on the three -- three sites so that we all have a common ground or at least the general facts about -- about these sites, and how the 250-

day issue arises there and so forth.

And then, you know, it -- whatever response, contribution NIOSH, you know, you feel comfortable to make by that time --

MR. HINNEFELD: Okay. I apologize. My phone dropped the call there for a little -- a few minutes ago, and so -- well, this is -- when you say on the three sites, so is this all of the Table One event that -- in SC&A's report where they have these three sites and then they -- from each site they have a number of situations as sort of candidates and sort of our reaction to those?

CHAIRMAN MELIUS: Yes. But the Table Three --

MR. HINNEFELD: I think it's Table One.

DR. MAKHIJANI: Yes. There are several. There are four tables.

CHAIRMAN MELIUS: Four tables.

MR. HINNEFELD: Table One is just Ames.

DR. MAKHIJANI: Two for NTS and one for Ames.

MR. HINNEFELD: Oh, okay.

CHAIRMAN MELIUS: And there's two --

MR. HINNEFELD: Okay. Okay. Got you. Got you. Okay.

CHAIRMAN MELIUS: I'm not sure that Arjun correctly -- Table Four, I mean, I think, which is the underground testing, it could be mentioned. That really isn't something that's been developed in as much detail as the others. Correct?

DR. MAKHIJANI: Yes. You're absolutely right. There's actually one incident involving an external dose that's in underground testing period and I mentioned it a little bit earlier.

The internal dose which would involve much of the discussion, I think we have not explored for incidents. We -- I just have given a couple of examples where the

doses could be inferred to be substantial, but we don't actually know whether they were associated with incidents, because we haven't looked into it.

DR. MAURO: Stu, this is John. I think that we would all be interested in NIOSH's perspective if those example incidents that we characterize, or circumstances, because I would call the Met Lab more of a circumstance than an incident for reasons that are apparent when you read the report.

Whether or not those circumstances/incidents as we described them in those tables, that you would agree that they are candidates, you know, and warrant and merit discussion within the context of 250 days, or do you feel that there may be some of them that you say yes, certainly do, but others you do not feel that way and why, and that will help drive us toward a consensus on at least calling out how we're looking at this and try to achieve a place that would have

some conciliation where we can agree.

You know, where is the glass half full? Of course, from then on, whether or not -- once they're a candidate and we agree they're a candidate, then of course it becomes -- we start the difficult task of, you know, whether or not, yes or no.

And perhaps, as you do that, as the Work Group or the Board does that, it will help move us in the direction of developing general criteria that can be a little bit more explicit.

Sort of like, almost an iterative process of driving us toward not only the resolution of which candidates should be granted SEC status of less than 250 days, but it will simultaneously drive the process of setting those criteria that could be expressed in general terms.

Allow the chicken and the egg to move forward together. I mean, it's -- let it emerge from the process. Unfortunately, we're

trying to do this in a linear way. Let's pick the criteria and then apply the criteria and make a judgment, and that's a problem.

And -- or -- it's really inappropriate for us to go ahead and collectively make a judgment without the criteria.

So, either way, we're -- we have a problem. But if somehow we can allow the process to unfold and starting with an agreement amongst all concerned, what represents examples that, yes, you and the Board and everyone involved feel, certainly, are situations/criteria that warrant consideration.

MR. HINNEFELD: Okay. We'll proceed along that path, then, and see what we can do by the Board meeting. We'll -- yes, you're right. I understand --

(Telephone connection with Mr. Hinnefeld was lost.)

CHAIRMAN MELIUS: Did we lose --

MEMBER ROESSLER: Is everybody gone?

DR. GLOVER: I'm still here.

DR. MAURO: Yes. I'm still here. I think --

MEMBER BEACH: I'm still here.

CHAIRMAN MELIUS: I think Stu --

MEMBER ROESSLER: Stu dropped out.

CHAIRMAN MELIUS: Yes.

DR. MAURO: Did we lose Stu? Stu, are you there?

DR. GLOVER: I think we lost Stu.

MR. RUTHERFORD: Yes, it was Stu.

MEMBER ROESSLER: While he's gone, this is Gen, I'll make a comment. Since we are going in the direction of this coming up at the Board meeting, which I think is really good to get insight from the new Board Members, and let others look at it again.

I'd recommend to Ted, when he sends out a new agenda, that he include the files, particularly that White Paper from

SC&A, the July paper we've been talking about.

And also included are -- make sure that people who don't use their CDC addresses or email addresses for one reason or another have that document.

MR. KATZ: Yes, Gen. I'm here. There's no question that these documents have to go to all the Board Members.

CHAIRMAN MELIUS: Right.

MEMBER ROESSLER: Yes. And sort of recommend somehow or another that they -- that they look at some of them before the meeting. It will be much more productive if they've looked at them.

MR. HINNEFELD: Yes, this is Stu.

MR. KATZ: Again, I'm --

MR. HINNEFELD: I'll send Verizon a nasty note.

MR. KATZ: Gen, I'm happy to send an encouraging note with the documents. Anyway, so I'll take care of that.

CHAIRMAN MELIUS: Certainly.

DR. GLOVER: And would it -- this is Sam Glover. I had one on regards to our presentation. Do you want us to really focus on how well those -- we believe the sort of merit versus getting into the details, because there have been disagreements over, you know, how we come to these different numbers.

It gets into the details, you know, so that a lot of facts put into evidence here, where we would get into in a Work Group meeting and actually, okay, what do we know or don't know about a thing, about a particular circumstance.

So, I just want to make sure how -- how -- where you want us to go in our discussions. It's really with regard to helping your criteria statement or is this really towards reviewing that particular site when we may bring other arguments to bear?

CHAIRMAN MELIUS: It's the former. It's dealing with the guidelines, so it's not all the details of the -- each incident.

DR. GLOVER: Okay.

MEMBER ZIEMER: And this is Ziemer. I might add, Sam, I think part of this is to inform the Board Members of the -- both the nature of the issue and where we are on it and maybe some additional insights, but they don't necessarily need all the -- all of the detail at this point --

MR. KATZ: Right, Jim.

MEMBER ZIEMER: -- on the calculations.

CHAIRMAN MELIUS: And so what I would add, I can't remember if it's on the agenda, but we would not be trying to make a recommendation on any of these sites at the Idaho Board Meeting.

MR. KATZ: Right. Right. Jim, this is Ted. I was planning, based on this discussion, to revise the agenda so that it's very clear that this is a general discussion of the guidelines with specific examples in that discussion, but I wouldn't lay it out as

I have it now where I have Met Lab and Ames' SEC petition laid out with the opportunity for petitioner to comment, because it's really not -- not that kind of session.

CHAIRMAN MELIUS: Right. Correct. And I would just add to that, at least my prioritization on the three sites sort of going forward from here, is I think we should, you know, then we need to move on Ames.

I think that's the -- at least the most straightforward in terms of there's really one type of incident to deal with. Met Lab has some different situations, incidents, whatever you want to call them, that sort of would be next, because I think at least they're -- we know what we know there. But I think it takes a little different approach.

And then Nevada Test Site, I think we have some more -- have some more work to do so that will take a little bit of more work before we can get there. But I think that would be the general order of how we would try

to resolve this.

Now, you know, it may not work, but let's see how it does going forward.

DR. MAKHIJANI: Dr. Melius, just a minor suggestion on that last part. On NTS, as you've said several times, we really haven't done work on the underground testing period for this, but there is some -- we did an explicit report on the atmospheric testing period that can be drawn on, for less than 250 days.

CHAIRMAN MELIUS: Yes, and I think it would be worthwhile going forward -- on the underground in terms of a report. I'm just trying to think what's the best timing on that.

DR. MAKHIJANI: Right.

CHAIRMAN MELIUS: It certainly would be best not to start it before we at least have the benefit of some Board discussion at the next meeting.

DR. MAKHIJANI: No, no, no. I

agree with that because, you know, we've done a lot of reports that we're still discussing. I just -- I just was pointing out that.

CHAIRMAN MELIUS: Yes.

DR. MAKHIJANI: In the context of your discussion we have some numbers from the atmospheric testing.

CHAIRMAN MELIUS: Yes. Since the Board Meeting is coming up, let's -- we'll sort of make a note and let's -- possibly make that assignment at the Board meeting and see where we are at that point.

Does that make sense, Ted?

MR. KATZ: Yes, that makes perfect sense to me.

CHAIRMAN MELIUS: Any other comments or questions?

(No response.)

CHAIRMAN MELIUS: I thank everybody for their attention on a Friday afternoon.

If there are no more comments or

questions, we will see everybody in Idaho in a couple weeks.

(Whereupon, the above-entitled matter went off the record at 2:42 p.m.)